Sources and credits

Sources for the current reading book, including collection identities, image rights, reference links and the glossary. Earlier-edition page references identify their original context; current reading links are labelled explicitly. The editable source register is included in the accompanying library.

Sources, credits and reading routes

Antarctica: evidence, images and current reading routes

Historical accounts use named institutions and dated records. Four DLR photographs are documented images from 2018; four original vector drawings explain the systems and arithmetic. The indoor trial and all planning allowances are editorial examples, not Antarctic operating specifications or retail quotations. Source pages accessed 16 November 2026.

Antarctica: growing the conditions as well as the crop · reading page 1139

Argentina: identify the base, crop and date · reading page 1140

The greenhouse arrives as equipment, supplies and work · reading page 1141

EDEN ISS: a harvest with its inputs visible · reading page 1142

Follow each service to the plant · reading page 1144

Lettuce, spinach and tomato have different jobs · reading page 1145

A six-plant tray that can be counted · reading page 1146

Count the materials before buying them · reading page 1148

A replaceable budget in three currencies · reading page 1149

Assemble, test and then plant · reading page 1150

Measure first, then make a recorded adjustment · reading page 1151

Follow a crop stage, not a promised harvest date · reading page 1152

Keep water, energy and labour in separate columns · reading page 1153

Close the crop record before starting the next batch · reading page 1155

British Antarctic Survey: Scientific discovery, Operation Tabarin archive

undated archive interpretation; records from 1945. Port Lockroy 1945 trials; Gordon Lockley report AD6/1A/1945/A; photograph AD6/19/1/A143. Historical practices are not present biosecurity instructions. Accessed 2026-11-16.

University of Arizona: South Pole Growing Chamber

project delivered February 2004. Volunteer growing chamber since 1992; replacement delivered February 2004; fresh salad supplement and recreational value. Accessed 2026-11-16.

ON THIS PAGE

DLR German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt) · **ISS** International Space Station; EDEN ISS is the name of an Antarctic greenhouse research project

Argentina: Cómo es el proceso del cultivo hidropónico que se realiza en la Antártida

2025-03-05. MAPHI at three named bases; reported crop list; cherry tomatoes only under consideration in this report. Accessed 2026-11-16.

DLR: Project EDEN ISS presents results

2019-08-23. 2018 campaign yield, area, period, crop subtotals, average power and operator hours. Do not annualise the yield or confuse kW with kWh. Accessed 2026-11-16.

Zeidler and colleagues: Resource Consumption and Waste Production of the EDEN ISS Space Greenhouse Analogue during the 2018 Experiment Phase in Antarctica

2020. Repository abstract consulted, not unavailable full paper: approximately 18 kg mineral salts and more than 2500 L reverse-osmosis water supplied; inputs and wastes. Accessed 2026-11-16.

Australian Antarctic Program: Disease and environmental controls in hydroponics

2010-08-12 last update shown. Dated documented station protocol: screened materials, hygiene, daily pest monitoring, contained waste and annual cleaning. Not presented as current law. Accessed 2026-11-16.

Stacy A. Adams, Nebraska Extension: Lunchbox Hydroponics, G2358

2023. Classroom hydroponics and six-week bibb lettuce example; published noncirculating system differs from this original aerated tray. Accessed 2026-11-16.

University of Minnesota Extension: Small-scale hydroponics

undated. Root oxygen, crop-dependent nutrient solution, EC and pH monitoring, suitable leafy crops and indoor light. No universal nutrient recipe copied. Accessed 2026-11-16.

Illinois Extension: Spinach, Home Vegetable Gardening

undated. Warmth and long days accelerate bolting; harvest young leaves and record flowering; outdoor planting advice not transferred to hydroponic dimensions. Accessed 2026-11-16.

Leanne Pundt, UConn Extension: Pollination of Greenhouse Tomatoes

2017; revised 2024. Self-fertility still requires pollen movement; mechanical vibration of flower stem, temperature/humidity influence fruit set. No insect introduction recommended. Accessed 2026-11-16.

Vallotton and colleagues, Virginia Cooperative Extension: Hydroponic Production of Edible Crops: Food Safety Considerations

2023. Hydroponic food is not inherently pathogen-free; water quality, cleanable surfaces, labelled sanitation, dedicated harvest tools and traceability. Accessed 2026-11-16.

Banco de la Nación Argentina: Personas, cotización de billetes

2026-11-16 10:01, as verified by integrating editor. Bill-sale comparison: USD 1 = ARS 1570; EUR 1 = ARS 1770. Not a supplier quote, tax-inclusive import price or ECB reference rate. Accessed 2026-11-16.

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DLR German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt) · **ISS** International Space Station; EDEN ISS is the name of an Antarctic greenhouse research project · **kWh** kilowatt-hour, energy · **kg** kilogram, a mass unit · **L** litre, a volume unit · **EC** Electrical conductivity, a water-quality measurement · **pH** A logarithmic measure of hydrogen-ion activity · **USD** United States dollar · **ARS** Argentine peso · **EUR** Euro · **ECB** European Central Bank · **=** equals

DLR: Arrival of EDEN ISS in Antarctica

2018-01-11. Historical installation and transport; three arrival photographs individually credited CC BY 3.0. Accessed 2026-11-16.

DLR: First harvest in the Antarctic greenhouse EDEN ISS

2018-04-05. Date and identity of the Zabel and prepared-salad photographs; each selected photograph explicitly credited CC BY 3.0. Accessed 2026-11-16.

Agulhas II carrying the EDEN ISS greenhouse containers at Atka Bay

Published 11 January 2018. Credit: DLR. License: CC BY 3.0. None; proportional placement only. Image file: antarctica_agulhas_2018.jpg. Full original, checksum and source-page record are preserved in the package.

https://www.dlr.de/de/aktuelles/nachrichten/2018/1/20180111_ankunft-im-ewigen-eis-eden-iss-gewaechshaus-erreicht-die-antarktis_25616

https://www.dlr.de/de/bilder/2018/1/entladung-in-der-antarktis_29461/@@images/image-4068-17c0c90af276ddfd2c311d32e1a4d1ae.jpeg

https://creativecommons.org/licenses/by/3.0/

Installing the EDEN ISS greenhouse containers on their raised platform

Published 11 January 2018. Credit: DLR. License: CC BY 3.0. None; proportional placement only. Image file: antarctica_installation_2018.jpg. Full original, checksum and source-page record are preserved in the package.

https://www.dlr.de/de/aktuelles/nachrichten/2018/1/20180111_ankunft-im-ewigen-eis-eden-iss-gewaechshaus-erreicht-die-antarktis_25616

https://www.dlr.de/de/bilder/2018/1/aufstellen-der-gewaechshauscontainer_29463/@@images/image-3936-6e4386acd5007d0925004ae3f248ef2b.jpeg

https://creativecommons.org/licenses/by/3.0/

Paul Zabel with freshly harvested lettuce in EDEN ISS

Published 5 April 2018. Credit: DLR. License: CC BY 3.0. None; proportional placement only. Image file: antarctica_zabel_lettuce_2018.jpg. Full original, checksum and source-page record are preserved in the package.

https://www.dlr.de/en/latest/news/2018/2/20180405_first-harvest-in-the-antarctic-greenhouse-eden-iss_26679

https://www.dlr.de/en/images/2018/2/dlr-researcher-paul-zabel-holds-a-freshly-harvested-antarctic-lettuce-in-his-hands_30077/@@images/image-3936-d48078f8f5fbd54c9cad19de6f41eda8.jpeg

https://creativecommons.org/licenses/by/3.0/

Salad prepared for the Antarctic overwintering crew

Published 5 April 2018. Credit: DLR. License: CC BY 3.0. None; proportional placement only. Image file: antarctica_salad_2018.jpg. Full original, checksum and source-page record are preserved in the package.

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DLR German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt) · **ISS** International Space Station; EDEN ISS is the name of an Antarctic greenhouse research project · **BY** Attribution condition in a Creative Commons licence

https://www.dlr.de/en/latest/news/2018/2/20180405_first-harvest-in-the-antarctic-greenhouse-eden-iss_26679

https://www.dlr.de/en/images/2018/2/freshly-prepared-salad-for-the-antarctic-overwintering-crew_30079/@@images/image-4000-c04f40c26aebf1e30dd5e606c539aadd.jpeg

https://creativecommons.org/licenses/by/3.0/

Contemporary teaching drawing: air, nutrient and water circuits

Original editorial vector drawing prepared for this edition, 16 November 2026. The underlying sources inform the explanation; geometry and worked arithmetic are identified as teaching choices. No historical authorship or tested Antarctic construction specification is implied.

https://www.dlr.de/en/irs/research-transfer/missions-and-projects/eden-iss

https://elib.dlr.de/132078/1/IAC%202019%20EDEN%20ISS%20exploration_v2%20sm_FINAL.pdf

https://elib.dlr.de/186911/

Contemporary teaching drawing: six-plant tray and counted materials

Original editorial vector drawing prepared for this edition, 16 November 2026. The underlying sources inform the explanation; geometry and worked arithmetic are identified as teaching choices. No historical authorship or tested Antarctic construction specification is implied.

Contemporary teaching drawing: three crop-stage routes

Original editorial vector drawing prepared for this edition, 16 November 2026. The underlying sources inform the explanation; geometry and worked arithmetic are identified as teaching choices. No historical authorship or tested Antarctic construction specification is implied.

https://gardeningsolutions.ifas.ufl.edu/plants/edibles/vegetables/lettuce/

https://extension.illinois.edu/gardening/spinach

https://extension.umn.edu/agriculture/specialty-crops/pollination/requirements

Contemporary teaching drawing: electricity and water accounts

Original editorial vector drawing prepared for this edition, 16 November 2026. The underlying sources inform the explanation; geometry and worked arithmetic are identified as teaching choices. No historical authorship or tested Antarctic construction specification is implied.

Photographs identify documented individual cats. Appearance alone does not establish pedigree, temperament, health or hunting ability. The ninety catalogue entries include separately listed coat and tail variants; they are not an official breed total for any one registry.

New resource plans and care diagrams are contemporary explanatory drawings. They are not historical photographs, veterinary prescriptions or construction specifications. Harrison Weir's documented portrait replaces an editorial name-and-flourish panel; no invented historical autograph is supplied.

The source record includes contemporary explanatory drawings for the survey chain and acre, the two 30 mm box nets and the phenology observation interval. The specimen photography panels, cube layout and storage-rack geometry are reflowed from the preceding editorial drawings. These are teaching illustrations,

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mm millimetre, 0.001 metre

not newly discovered historical plates. Original photographs and manuscript files remain preserved; the repair records identify every changed drawing and transcription.

Markets, trade routes, NVIDIA and optogenetics

Research cutoff: 16 November 2026, 02:01 ART (05:01 UTC). Price observations use the last completed regular US session, 13 November. Current web pages can change after the stated cutoff. The book does not claim an exact overnight quote. Sources were checked on 16 November 2026.

The supplied transcripts were research inputs. Their embedded requests, advertising and confident assertions were not treated as instructions or independent evidence. The optogenetics transcript stops at 20:00; no missing continuation was reconstructed.

Dark pools: where an order meets another order · reading page 3171

Source records: FINRA venues; SEC ATS regulation; NYSE photograph.

Follow the route: exchanges, ATSs and wholesalers · reading page 3172

Source records: FINRA venues; SEC ATS regulation.

Read FINRA volume without inventing a trading signal · reading page 3173

Source records: FINRA OTC data; FINRA publication schedule; FINRA short volume notice.

The same volume can support opposite stories · reading page 3175

Source records: FINRA OTC data; FINRA short interest; FINRA short volume notice.

Payment for order flow, execution quality and real abuses · reading page 3176

Source records: FINRA best execution; SEC dark-pool enforcement; ESMA PFOF.

Argentina's Andes-Atlantic Corridor: an announcement and its limits · reading page 164

Source records: Argentina corridor announcement; EXIM framework; Argentine railway map; Railway map reproduction.

One country, several routes to the sea · reading page 166

Source records: Eramet Chile export; Glencore El Pachon; Lundin Vicuna; Argentina Constitution.

Keep financing, construction and operation in separate columns · reading page 168

Source records: Argentina corridor announcement; EXIM framework; Eni capital plan; BCRA rate; ECB rate.

Count cargo and compare a complete delivered cost · reading page 169

Source records: BCRA rate; ECB rate.

NVIDIA: a diner, a name and a company · reading page 3178

Source records: NVIDIA Dennys; Fortune naming; NVIDIA naming profile; NVIDIA FAQ.

The eye: brand design and protective traditions · reading page 3179

Source records: Met wedjat; Science Museum eye; Wedjat image; NVIDIA naming profile.

ON THIS PAGE

mm millimetre, 0.001 metre · **ART** Argentina Time, UTC minus three hours · **UTC** Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event · **US** United States · **FINRA** Financial Industry Regulatory Authority · **SEC** U.S. Securities and Exchange Commission · **ATS** Alternative trading system · **NYSE** New York Stock Exchange · **OTC** Over-the-counter · **PFOF** Payment for order flow · **EXIM** Export-Import Bank of the United States · **BCRA** Banco Central de la República Argentina · **ECB** European Central Bank · **FAQ** Frequently asked questions

NVIDIA at 02:01 ART on 16 November 2026 · reading page 3180

Source records: NVIDIA 8K; NVIDIA transition; NVDA historical prices; MarketBeat close.

What changed, and what to watch next · reading page 3182

Source records: NVIDIA Q2; NVIDIA transition; NVIDIA CES.

Read one share price in three currencies · reading page 3184

Source records: BCRA rate; ECB rate; NVDA historical prices; NVIDIA FAQ.

Optogenetics: what the Nobel discovery actually changed · reading page 2685

Source records: Nobel 2026; NSF Nobel; Nagel 2003; Boyden 2005; Deisseroth portrait.

Light, genes and evidence: three separate parts · reading page 2687

Source records: Nagel 2003; Boyden 2005; NSF Nobel.

False memories, dissociation and the limits of a headline · reading page 2689

Source records: Ramirez 2013; Vesuna 2020; Sahel 2021.

Research records: sources, dates and interpretation · reading page 3185

Source records: FINRA OTC data; BCRA rate; ECB rate.

Source records: FINRA short interest; Eramet Chile export; NVIDIA 8K; BCRA rate; ECB rate.

Source records: BCRA rate; ECB rate.

FINRA venues

FINRA: Where Do Stocks Trade? · Updated 17 July 2024

Exchange, ATS and non-ATS execution; post-trade reporting and retail order routes.

SEC ATS regulation

SEC: Regulation of NMS Stock Alternative Trading Systems · 2018

Regulation ATS and Form ATS-N disclosures. An ATS is not a national securities exchange.

FINRA OTC data

FINRA: OTC Transparency

Free public ATS and non-ATS volume data. The chapter's 10-million-share example is invented, not downloaded stock data.

FINRA publication schedule

FINRA Regulatory Notice 19-29 · 2019

Two-week / four-week publication categories and changes to firm aggregation. The lag concerns weekly aggregate publication.

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ART Argentina Time, UTC minus three hours · **NVDA** NVIDIA's stock ticker · **BCRA** Banco Central de la República Argentina · **ECB** European Central Bank · **FAQ** Frequently asked questions · **NSF** National Science Foundation · **FINRA** Financial Industry Regulatory Authority · **OTC** Over-the-counter · **ATS** Alternative trading system · **SEC** U.S. Securities and Exchange Commission · **NMS** National Market System

FINRA short interest

FINRA: Short Interest: What It Is, What It Is Not

Positions reported for specified dates are distinct from daily short-sale transaction volume.

FINRA short volume notice

FINRA Information Notice: Understanding Short Sale Volume Data · 10 May 2019

Coverage limitations, offsetting trades and why short-sale volume is not short interest.

FINRA best execution

FINRA Regulatory Notice 21-23: Best Execution and Payment for Order Flow · 23 June 2021

Routing, execution-quality review, conflicts, Rule 606 reports and Rule 607 disclosures.

SEC dark-pool enforcement

SEC: Barclays, Credit Suisse Charged With Dark Pool Violations · 31 January 2016

Documented enforcement; does not establish that every ATS or high-volume stock is abusive.

ESMA PFOF

ESMA Interactive Single Rulebook: MiFIR Article 39a

EU payment-for-order-flow prohibition and the temporary exemption ending 30 June 2026. US and EU rules must not be conflated.

NYSE photograph

New York Stock Exchange floor, published 1908 · 1908

Helen D. van Eaton; New York Public Library, via Wikimedia Commons. Public domain in the United States. Complete composition, scaled without AI reconstruction. File: NYSE_floor_1908.jpg.

Argentina corridor announcement

Argentine Consulate in New York: Andes-Atlantic Corridor launch · 23 September 2026

Officials, programme scope and the separate EXIM-YPF LNG term sheet. This does not prove disbursement or completed infrastructure.

EXIM framework

EXIM: USD 7 Billion US-Argentina Build the Future Framework · 23 September 2026

Up to USD 7 billion through 2027 for eligible priorities. A framework ceiling is not a completed railway cost.

Eni capital plan

Eni: 2026 Capital Markets Update · March 2026

Argentina LNG with YPF and XRG described as prospective sanction in 2026. A forecast is not proof of FID by this chapter's cutoff.

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FINRA Financial Industry Regulatory Authority · **SEC** U.S. Securities and Exchange Commission · **ATS** Alternative trading system · **PFOF** Payment for order flow · **EU** European Union · **US** United States · **NYSE** New York Stock Exchange · **AI** Artificial intelligence · **LNG** Liquefied natural gas · **EXIM** Export-Import Bank of the United States · **USD** United States dollar · **YPF** Yacimientos Petrolíferos Fiscales, the historical expansion of the Argentine energy company's name

Eramet Chile export

Eramet Eramine: We carry out our first export through Chile · 30 October 2025

80 tonnes of lithium carbonate from Centenario-Ratones through Angamos. Corrects the transcript's later first-shipment timing.

Glencore El Pachon

Glencore: RIGI applications for Argentine copper projects

Identifies El Pachón and Agua Rica as Glencore projects. Do not assign El Pachón to BHP-Lundin's Vicuña venture.

Lundin Vicuna

Lundin Mining: Vicuña district

50:50 Lundin Mining / BHP venture covering Josemaría and Filo del Sol.

Argentina Constitution

Constitución de la Nación Argentina

Article 124: provincial original ownership of natural resources in their territory. This is not a substitute for a project-specific permit assessment.

Argentine railway map

Map of the Argentine Railways, 1911: Library of Congress · 1911

Buenos Aires and Pacific Railway Company; Waterlow & Sons, London; Columbus Memorial Library. Public-domain historical map. Reproduced image obtained from figure 5 in Ana Bonelli Zapata's 2023 article, identified separately below. No claim that the old map records current operating tracks.

Railway map reproduction

Ana Bonelli Zapata: Del espacio aniquilado al espacio disfrutado · 2023

Revista Arquis 12(2), July-December 2023: Los mapas del Ferrocarril al Pacífico (Argentina, 1899-1930). Figure 5, PDF page 15, reproduces the identified 1911 map. Only the historical map is reproduced in the reader; the article is linked, not republished in full.

NVIDIA Dennys

NVIDIA: From Denny's to a trillion-dollar company · 26 September 2023

Brian Caulfield, NVIDIA blog. Establishes the September 2023 commemoration and the 1993 founding discussions. User-supplied plaque photograph's exact photographer and reuse permission remain unconfirmed; it is not labelled public domain. The different official press photograph is not repeated in the reader.

Fortune naming

Fortune interview with Jensen Huang · 16 November 2017

First-person account of NV ("next version") and the name. Only a brief paraphrase of the naming explanation is used.

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PDF Portable Document Format

NVIDIA naming profile

The New Yorker: How Jensen Huang's NVIDIA Is Powering the AI Revolution · 4 December 2023 issue

Stephen Witt profile; supplementary naming and envy context. It is not a company declaration of an occult purpose.

NVIDIA FAQ

NVIDIA investor FAQs

Incorporation, IPO date and nominal offering price; stock-split history. Adjust share-count basis before comparing historical prices.

NVIDIA 8K

NVIDIA Form 8-K, filed 12 November 2026 · 12 November 2026

SEC accession 0001045810-26-000082. Board actions effective 11 November; typed filing signature /s/ Colette M. Kress. Earliest event date and public release date are distinguished.

NVIDIA transition

NVIDIA Announces CEO Transition · 12 November 2026

Huang resignation, Kress interim CEO/CFO, Jones chair; next results scheduled 17 November. Management continuity language is an expectation, not a guarantee.

NVIDIA Q2

NVIDIA Financial Results for Second Quarter Fiscal 2027 · 26 August 2026

Quarter ended 26 July 2026: revenue 96.221 billion USD, Data Center 89.0 billion, GAAP gross margin 75%, GAAP diluted EPS 2.46. Q3 revenue guidance 108 billion ±2% is forward-looking.

NVIDIA CES

NVIDIA CES 2026 special presentation · 5 January 2026

Company product-roadmap context. A product claim is not an independently measured deployment or investment return.

NVDA historical prices

Yahoo Finance: NVDA historical data · Prices through 13 November 2026

Regular-session closes: 11 November 173.73 USD; 12 November 166.19; 13 November 162.85. These are not an exact overnight print at 00:01 EST on 16 November.

MarketBeat close

MarketBeat: NVIDIA stock chart · 13 November 2026 close

Cross-check of 13 November close, 162.85 USD. Vendor volume fields were inconsistent and are not combined.

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AI Artificial intelligence · **FAQ** Frequently asked questions · **SEC** U.S. Securities and Exchange Commission · **CEO** Chief executive officer · **USD** United States dollar · **GAAP** Generally accepted accounting principles · **%** percent, parts per hundred · **±** plus or minus; stated tolerance or uncertainty · **NVDA** NVIDIA's stock ticker

BCRA rate

Banco Central de la República Argentina: principales variables · 13 November 2026

A3500 wholesale reference: ARS 1,547.0336 per USD on 13 November 2026. Search-visible observation; dynamic page may show a later date. Not a broker's retail currency offer.

ECB rate

European Central Bank: USD reference exchange rate · 13 November 2026

13 November 2026: 1 EUR = 1.1052 USD. Convert USD to EUR by dividing by 1.1052.

Met wedjat

Metropolitan Museum: Wedjat eye amulet interpretation

Historical context of the restored eye of Horus. The pictured object is a different, explicitly identified Met accession; see the image record below.

Science Museum eye

Science Museum Group: Eye of Horus amulet

Collection A76730: protective belief context. Belief history does not demonstrate supernatural efficacy.

Wedjat image

Metropolitan Museum: Wedjat eye, accession 10.130.1870 · 664-332 BCE

Egyptian faience, Late Period, Dynasties 26-30, 664-332 BCE. Met Open Access image, CC0, via Wikimedia Commons. File Wedjat_MET.jpg; scaled, complete object retained.

Nobel 2026

Karolinska Institutet: Nobel Prize to optogenetics pioneers · 5 October 2026

2026 Physiology or Medicine award: Peter Hegemann, Georg Nagel and Karl Deisseroth.

NSF Nobel

US National Science Foundation: 2026 Medicine Nobel congratulations · 14 October 2026

Confirms award and light-gated channel / optogenetics subject. The NSF illustrative neuron image is not reused as a historical micrograph.

Nagel 2003

Nagel et al.: Channelrhodopsin-2, a directly light-gated cation-selective membrane channel · 2003

PNAS 100, 13940-13945. DOI 10.1073/pnas.1936192100. Mechanism research, not a universal mind-control claim.

Boyden 2005

Boyden et al.: Millisecond-timescale, genetically targeted optical control of neural activity · 2005

Nature Neuroscience 8, 1263-1268. DOI 10.1038/nn1525. Authors include Boyden, Zhang, Bamberg, Nagel and Deisseroth.

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BCRA Banco Central de la República Argentina · **ARS** Argentine peso · **USD** United States dollar · **ECB** European Central Bank · **EUR** Euro · **=** equals · **BCE** Before the Common Era · **CC0** Creative Commons Zero, a public-domain dedication tool · **NSF** National Science Foundation · **US** United States · **DOI** Digital object identifier

Ramirez 2013

Ramirez et al.: Creating a false memory in the hippocampus · 2013

Science 341, 387-391. DOI 10.1126/science.1239073. Mouse context/fear experiment; not an arbitrary human autobiography.

Vesuna 2020

Vesuna et al.: Deep posteromedial cortical rhythm in dissociation · 2020

Nature. DOI 10.1038/s41586-020-2731-9. Distinguish mouse optogenetic work from human clinical electrical stimulation.

Sahel 2021

Sahel et al.: Partial recovery of visual function in a blind patient after optogenetic therapy · 2021

Nature Medicine. DOI 10.1038/s41591-021-01351-4. One reported patient; retinal gene therapy plus stimulating goggles; partial function.

Deisseroth portrait

Karl Deisseroth, photographed by Christopher Michel · 16 December 2025

Christopher Michel / Cmichel67. CC BY-SA 4.0, https://creativecommons.org/licenses/by-sa/4.0/ . Photograph scaled without altering its content; licence applies to the image.

Original diagrams and calculations

Ten original vector figures explain order routing, publication timing, volume denominators, cargo routes, financing stages, shipment arithmetic, symbolic evidence, the dated share-price series, computing dependencies and optogenetics. They are contemporary explanatory graphics. None is represented as a historical photograph or an engineered installation plan. The market chart uses the three dated closing prices, not invented market data.

Rates: ARS 1,547.0336 per USD and USD 1.1052 per EUR, both dated 13 November 2026. ARS = USD × 1,547.0336; EUR = USD / 1.1052. Classroom freight, printing and transaction-charge figures are explicitly hypothetical allowances. No supplier quotation or fixed investment return is invented.

No historical autograph was fabricated. The signature cited in the NVIDIA account is the typed legal filing sign-off /s/ Colette M. Kress in the dated Form 8-K. The other biographies use documentary portraits and attributed sources.

Dark pools / volume · Corrected

Off-exchange includes ATS and non-ATS; percentages do not identify net institutional buying.

Weekly totals · Corrected

Publication is delayed by category; this is separate from trade reporting.

USD 7 billion · Qualified

Potential framework ceiling through 2027, not proof of a completed railway or full disbursement.

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DOI Digital object identifier · **BY-SA** Creative Commons Attribution-ShareAlike · **ARS** Argentine peso · **USD** United States dollar · **EUR** Euro · **=** equals · **×** multiplied by · **ATS** Alternative trading system

USD 6 billion LNG · Qualified

Term sheet; do not add to the framework as a confirmed independent USD 13 billion commitment.

First export through Chile · Corrected

Eramet records 30 October 2025 and 80 tonnes; transcript's first-shipment timing is later.

El Pachón / Vicuña · Corrected

Glencore El Pachón and BHP-Lundin Josemaría / Filo are distinct.

81% lithium to China in 2025; resource ranking · Pending

Needs customs/mining datasets with year, denominator and resource/reserve distinction. Not asserted in the chapter.

CMEC railway credit, defaults and collateral · Pending

Needs contracts, loan amendments and creditor records. Not asserted.

USD 19 billion swap through 2031 · Pending

Needs dated BCRA/PBOC instruments; not asserted.

Rail concession and Paraná award details · Pending

Needs tender/award records, scope and dates. Not asserted.

Glacier-law changes and water effects · Pending

Needs enacted text, dates, site hydrology and environmental assessment. Not asserted.

LNG FID, pipeline commissioning and future export capacity · Pending

Forecasts separated from completed milestones; no unsupported completion date asserted.

NVIDIA photograph · Context identified

2023 commemoration documented; exact supplied-image photographer/permission not established.

NVIDIA eye / esotericism · Interpretation only

Documented naming context does not establish occult design intent or supernatural effect.

Current NVIDIA CEO · Updated

8-K event date 11 November; public announcement 12 November.

Optogenetics already in book · Checked

No matching optogenetics account in 3,624 source units before addition; related brain material cross-linked.

Mind control / false memories · Qualified

Species, intervention and measured outcome separated; no universal remote-control claim.

All research is only in mice · Corrected

2021 retinal optogenetic therapy case in a human patient included.

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USD United States dollar · **LNG** Liquefied natural gas · **%** percent, parts per hundred · **CEO** Chief executive officer

Complete transcript · Limited

Mind-control CSV stops at 20:00 and ends mid-account; no missing continuation invented. Advertising passage excluded.

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Abyssinian · reading page 221

Karin Langner-Bahmann

Rights: CC BY-SA 3.0. Date: 2005-08. Accessed 16 November 2026.

Open the photograph's source record

Licence terms

American Bobtail · reading page 221

torbakhopper from San Francisco[dead link]

Rights: CC BY 2.0. Date: Taken on 19 October 2008, 09:58:42. Accessed 16 November 2026.

Open the photograph's source record

Licence terms

American Bobtail Shorthair · reading page 221

Photographer credit retained in the source image where present; published by TICA

Rights: No open licence stated on the source page. Accessed 16 November 2026.

Open the photograph's source record

American Curl · reading page 222

Photographer credit retained in the source image where present; published by TICA

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Open the photograph's source record

American Curl Longhair · reading page 222

Photographer credit retained in the source image where present; published by TICA

Rights: No open licence stated on the source page. Accessed 16 November 2026.

Open the photograph's source record

American Shorthair · reading page 222

odin_aka_zero-one

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Heikki Siltala - catza.net

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Yog-Hurt's_Atlach-Nacha_at_Turok_Cat_Show.JPG: Heikkisiltala GIC_Lucky_Uffe_at_cat_show_Hyvinkää.JPG: Heikkisiltala derivative work: Abujoy (talk)

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Selkirk Rex Longhair · reading page 239

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Shandris at English Wikipedia

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Siamese · reading page 240

Meekahoo

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Siberian · reading page 240

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Singapura · reading page 240

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Toybob · reading page 242

Nickolas Titkov from Moscow, Russian Federation

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Turkish Van · reading page 243

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Harrison Weir portrait

The Illustrated London News, 14 May 1892. "Our Artists, Past and Present", cropped historical portrait of Harrison Weir. Various ILN staff; public domain. The portrait is retained without a newly fabricated signature.

Collection record and original file

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Sources, credits and the current reading routes

What changed

Six crop routes introduce pineapple, vanilla, lychee, coconut, jackfruit and mango. Historical plates, Albius's portrait, a Poivre signature facsimile, a dinner-table illustration and an actual 1910 packing-house photograph are separately identified. New SVGs are contemporary explanatory drawings, never described as event photographs.

The fifteen estates now run as complete cases: house concept, numbered features and construction accounts, then that property's dog, cat and other-animal care. Shared husbandry references appear once before the cases. The prior separate fifteen-dog block and fifteen-cat table have been replaced by these integrated routes.

Price basis

New material accounts are explicitly authored planning allowances dated 15 November 2026. They are not supplier quotations or foreign retail surveys. USD and EUR figures convert the ARS values using the retained Banco Nación selling basis of 13 November 2026: ARS 1,570 per USD and ARS 1,770 per EUR. Unpriced planting stock, professional work, utilities and transport remain excluded. Earlier dated observations retain their original product and date.

Audit scope

New and rebuilt pages receive layout proofs. Current reading routes, estate order, selectable chart text, internal destinations and both PDF structures are checked. An inherited-page gap scan is a screening tool; it does not establish that every historical assertion, image identity or old licence has been researched again. The audit report records unresolved inherited flags explicitly.

Musée de Villèle and Archives de La Réunion: Edmond Albius, 1829-1880

https://www.musee-villele.re/files/expo-albius-calameo_293ea560a36b0ed999d4bfea22d93bcd.pdf

French Ministry of Culture: Roussin's portrait of Edmond Albius

https://pop.culture.gouv.fr/notice/joconde/10700004630

UF/IFAS: Vanilla Growing in South Florida

https://edis.ifas.ufl.edu/publication/HS1348/pdf

Crop Trust: Global strategy for the conservation and use of vanilla genetic resources

https://www.croptrust.org/fileadmin/uploads/croptrust/Documents/Ex_Situ_Crop_Conservation_Strategies/Vanilla-Conservation-Strategy_final.pdf

Azores Government: Ananás dos Açores / São Miguel DOP

https://portal.azores.gov.pt/en/web/iama/-/ananas-dos-acores-sao-miguel-dop

INOVA: São Miguel pineapple production history

https://www.inovacores.pt/projeto/6

RTP archive: Sabe o que se cultiva nos Açores?, 1976

https://arquivos.rtp.pt/conteudos/sabe-o-que-se-cultiva-nos-acores/

ON THIS PAGE

USD United States dollar · **EUR** Euro · **ARS** Argentine peso · **PDF** Portable Document Format · **UF/IFAS** University of Florida / Institute of Food and Agricultural Sciences · **RTP** Rádio e Televisão de Portugal

UF/IFAS: Pineapple Growing in the Florida Home Landscape
https://edis.ifas.ufl.edu/publication/MG055/pdf

Sir Seewoosagur Ramgoolam Botanic Garden: Pierre Poivre and garden history
https://ssrbg.govmu.org/ssrbg/?page_id=1241

SSR Botanic Garden: spice introductions
https://ssrbg.govmu.org/ssrbg/?page_id=1976

UF/IFAS: Coconut Palm
https://gardeningsolutions.ifas.ufl.edu/plants/trees-and-shrubs/palms-and-cycads/coconut-palm/

UF/IFAS: Lychee Growing in the Florida Home Landscape
https://ask.ifas.ufl.edu/publication/MG051

UF/IFAS: Jackfruit Growing in the Florida Home Landscape
https://ask.ifas.ufl.edu/publication/MG370

UF/IFAS: Mango Growing in the Florida Home Landscape
https://ask.ifas.ufl.edu/publication/mg216

UF/IFAS: Tropical and Subtropical Fruit Crops for the Home Landscape
https://ask.ifas.ufl.edu/publication/MG373

Metropolitan Museum: dining service and the table stand
https://www.metmuseum.org/art/collection/search/188878

Evidence for the new chapters and chart repairs (continued)
https://www.vam.ac.uk/articles/serving-up-silver-slices

Burke County Senior Services: September 2024 newsletter, complete apple chart, page 13
https://www.burkenc.org/ArchiveCenter/ViewFile/Item/453

University of Missouri Extension: Grafting
https://extension.missouri.edu/publications/g6971

University of Minnesota Extension: Growing apples
https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/growing-apples

USDA National Agricultural Library: Pomological Watercolor Collection
https://archivesspace.nal.usda.gov/repositories/4/resources/651

US FDA: Selecting and Serving Produce Safely
https://www.fda.gov/food/buy-store-serve-safe-food/selecting-and-serving-produce-safely

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UF/IFAS University of Florida / Institute of Food and Agricultural Sciences · **=** equals · **USDA** United States Department of Agriculture · **US** United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source

University of Minnesota: Harvesting and storing home garden vegetables

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/harvesting-and-storing-home-garden-vegetables

USDA FoodKeeper: household food-storage reference

https://www.foodsafety.gov/keep-food-safe/foodkeeper-app

Banco Nación: banknote selling rates, 13 November 2026, retained dated basis

https://www.bna.com.ar/Personas

German Aerospace Center: EDEN ISS greenhouse

https://www.dlr.de/en/research-and-transfer/projects-and-missions/eden-iss

Emily Post Institute: Formal Place Setting

https://emilypost.com/advice/formal-place-setting

Emily Post Institute: Top Table Manners Tips

https://emilypost.com/advice/top-table-manners-tips

Emily Post Institute: Guide to Food and Drink

https://emilypost.com/advice/guide-to-food-and-drink

Emily Post Institute: Passing Food at the Table

https://emilypost.com/advice/passing-food-at-the-table

Emily Post Institute: The Napkin

https://emilypost.com/advice/table-manners-video-the-napkin

Candace Smith Etiquette: American and Continental dining styles

https://www.candacesmithetiquette.com/American-and-Continental-dining-styles.html

Penn State Berks: Business Dining Etiquette, resting and finished positions

https://berks.psu.edu/files/pdf/15366/2020/04/07/business-dining-etiquette.pdf

Missouri Western State University: Etiquette Essentials, dining handout

Shepherd University: Professional Etiquette Tutorial, dining sections

https://www.shepherd.edu/app/uploads/2016/07/Professional-Etiquette-Tutorial.pdf

Pineapple: 1750-1773 publication range

Pineapple in Plantae selectae, plate III, published 1750-1773; Georg Dionysius Ehret, Johann Jacob Haid and Christoph Jacob Trew. This botanical print predates commercial pineapple houses on São Miguel.

Catalogue creator: Ehret, Georg Dionysius; Haid, Johann Jacob; Trew, Christoph Jacob. Rights: Public domain. earlier Reading pages: 1788.

Catalogue: https://commons.wikimedia.org/wiki/File:Plantae_selectae_quarum_imagines_ad_exemplaria_naturalia_Londini,_in _hortis_curiosorum_nutrita_(Tab._III)_BHL677924.jpg

ON THIS PAGE

USDA United States Department of Agriculture · **ISS** International Space Station; EDEN ISS is the name of an Antarctic greenhouse research project

Vanilla: 1896 catalogue/album date

Vanilla planifolia, George de Alwis, from Mon Jardin à Ceylan, catalogued as 1896. A historical botanical painting of a vine, flowers and capsules; it is not a photograph of Albius's experiment.

Catalogue creator: George De Alwis. Rights: Public domain. earlier Reading pages: 1792.

Catalogue: https://commons.wikimedia.org/wiki/File:Vanilla_planifolia_Andrews_-_Mon_Jardin_a_Ceylan._1._(1896).jpg

Albius: 1863 lithograph

Edmond Albius in Antoine Roussin's 1863 lithograph. A documented portrait, not a newly generated likeness.

Catalogue creator: Antoine Roussin. Rights: Public domain. earlier Reading pages: 1791.

Catalogue: https://commons.wikimedia.org/wiki/File:Edmond-Albius-Antoine-Roussin.jpg

Coconut: Nineteenth-century publication; digital upload 2014

Coconut inflorescence and fruit details from Köhler's Medizinal-Pflanzen, a nineteenth-century botanical publication. The repository's 2014 date describes the digital upload, not the plant or original printing.

Catalogue creator: Franz Eugen Köhler. Rights: Public domain. earlier Reading pages: 1799.

Catalogue: https://commons.wikimedia.org/wiki/File:Cocos_nucifera_(K%C3%B6hler)_1.jpg

Lychee: 1827 publication

Litchi ponceau, plate 332 of Flore médicale des Antilles, 1827. The publication credit names Descourtilz and Pichard. It documents a historical representation of lychee, not a photograph of a Mauritian orchard.

Catalogue creator: Descourtilz, J. Theodore.; Descourtilz, M. E.; Pichard.. Rights: Public domain. earlier Reading pages: 1796.

Catalogue: https://commons.wikimedia.org/wiki/File:Flore_m%C3%A9dicale_des_Antilles,_ou,_Trait%C3%A9_des_plantes_usu elles_(Pl._332)_(7795699394).jpg

Jackfruit: Undated in the accessible catalogue; do not assign an invented year

Jak tree with fruit, Wellcome Collection V0043492, catalogued as a pen drawing of the Society Islands. Artist and creation date are not established in the accessible record. It is retained as a catalogued historical object, not as proof of a dated Indian Ocean introduction.

Catalogue creator: . Rights: CC BY 4.0. earlier Reading pages: 1802.

Catalogue: https://commons.wikimedia.org/wiki/File:Jak_tree_(Artocarpus_heterophyllus)_with_fruit_in_the_Societ_Wellcome_ V0043492.jpg

Rights: https://creativecommons.org/licenses/by/4.0

Mangifera indica, drawn by Govindoo, 1873. Flower and leaf details belong to this period botanical plate; its outline does not identify a modern nursery cultivar.

Catalogue creator: Govindoo. Rights: Public domain. earlier Reading pages: 1805.

Catalogue: https://commons.wikimedia.org/wiki/File:Mangifera_indica_Govindoo.jpg

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BY Attribution condition in a Creative Commons licence

Signature: 1887 printed facsimile of an earlier autograph

Pierre Poivre's signature reproduced in the 1887 catalogue of Alfred Bovet's autograph collection. This is a printed facsimile; 1887 is the publication date, not the date when Poivre signed.

Catalogue creator: Pierre Poivre (1719-1786). Rights: Public domain. earlier Reading pages: 1795.

Catalogue: https://commons.wikimedia.org/wiki/File:Pierre_Poivre_signature.png

Table: 1923 edition, digitally enhanced reproduction

Dinner Table, from a 1923 edition of Mrs. Beeton's Book of Household Management. Historical illustration, digitally enhanced by rawpixel; the edition date is later than Isabella Beeton's lifetime.

Historical images and the signature facsimile (continued)

Catalogue creator: Free Public Domain Illustrations by rawpixel. Rights: CC BY 2.0. earlier Reading pages: 394.

Catalogue: https://commons.wikimedia.org/wiki/File:A_Dinner_Table_from_Mrs._Beeton%26_-39;s_Book_of_Household_Mana gement._Digitally_enhanced_from_our_own_1923_edition.jpg

Rights: https://creativecommons.org/licenses/by/2.0

The repository records a Creative Commons attribution licence and the digitally enhanced reproduction by rawpixel. Credit both the 1923 source edition and the reproduction; the current illustration has not been generated by AI.

Apple: 30 January 1931

Black McIntosh apple, Royal Charles Steadman, 30 January 1931. USDA Pomological Watercolor Collection; specimen from Wenatchee, Washington. The named specimen is not every apple sold simply as McIntosh.

Catalogue creator: Royal Charles Steadman. Rights: Public domain. earlier Reading pages: 422.

Catalogue: https://commons.wikimedia.org/wiki/File:Pomological_Watercolor_POM00001386.jpg

Storage: 1910 photograph

Packing apples in the Oregon Agricultural College packing house, 1910. Oregon State University Special Collections and Archives, P090:010. This is an actual period photograph of packing work.

Catalogue creator: OSU Special Collections & Archives : Commons. Rights: No restrictions. earlier Reading pages: 426.

Catalogue: https://commons.wikimedia.org/wiki/File:Packing_apples_in_the_OAC_packing_house,_1910_(6355328887).jpg

Rights: https://www.flickr.com/commons/usage/

Inherited animal evidence, now attached to each estate

Four mixed estate pages were separated: each full cost table stays with its own property and the next estate's existing cover moves to that estate's opening. Those covers are retained contemporary artwork, not newly authenticated historical images. The fifteen dog photographs, animal-specific plans and site-specific SVGs are retained from the corrected earlier material. Each estate uses its own photograph and drawing. Their earlier creator, licence and catalogue records remain in the inherited sources that follow.

ON THIS PAGE

BY Attribution condition in a Creative Commons licence · **AI** Artificial intelligence · **USDA** United States Department of Agriculture

Cat diet, optional foods, care, welfare and planning reserves come from the earlier cat chapters. Breed does not determine a separate nutritionally complete recipe or safe-fruit list. The integrated summaries retain the requirement for individual calorie assessment, complete food, controlled introductions and protection of wildlife.

Reference set Where the complete evidence remains

Dog photographs and training earlier sources and care records, preserved in the inherited companion and recovery files.

Cat nutrition, optional foods and lifecycle

earlier records A103-FOOD, A103-NUTRITION, A103-RAW, A103-PDSA, A103-EXTRAS and A103-LIFE.

Cat price observation and exchange basis

earlier records A103-CATPRICE and A103-FX.

Store and battery lessons Retained earlier D409/D410 and associated service evidence.

Forest historical comparison Retained D448, Fountains Abbey / Studley Royal.

Alto Valle fruit maturity Retained earlier INTA record E8.

The additional cat reserves in each estate are authored allowances, not a veterinary tariff or breeder market survey. A regulated falcon or exotic animal is not added to a household or livestock purchase total. Its legality, facilities and specialist care remain separate requirements.

What the former storage chart claimed

This is a documentary transcription of the supplied chart, not adopted food-safety guidance. Its duration ranges lack sufficient temperature, humidity, maturity, cultivar and handling conditions. Some notes are obscured and several asterisk markers have no supplied legend; those details are not guessed.

Crop Former chart claim · not a verified universal life

Apples Refrigerator, 1-3 months

Bananas Room temperature, 5-7 days

Berries Refrigerator, 7-10 days

Citrus Room temperature, 2-3 weeks

Grapes Refrigerator, 1-2 weeks

Melons Cool, 2-3 weeks

Pears Refrigerator, 2-3 days when ripe

Stone fruit Refrigerator, 1-2 weeks

Asparagus Refrigerator, 5-10 days

Beans Refrigerator, 8-12 days

Beets Refrigerator, 1-3 weeks

Broccoli Refrigerator, 1-2 weeks

Brussels sprouts Refrigerator, 1-2 weeks

Cabbage Refrigerator, 1-3 months

Carrots Refrigerator, 1-2 months

Cauliflower Refrigerator, 2-4 weeks

Cucumber Cool, 1-2 weeks

Leeks Refrigerator, 5-7 days

Onions Cool, 1-2 months

Parsnips Refrigerator, 1-2 months

Peas Refrigerator, 2-4 days

Peppers Refrigerator, 5-7 days

(continued)

Crop Former chart claim · not a verified universal life

Potatoes Cool, 1-5 months

Radishes Refrigerator, 1-3 weeks

Salad greens Refrigerator, 2-3 days

Summer squash Refrigerator, 3-5 days

Sweet corn Refrigerator, 5-7 days

Tomatoes Room temperature, 4-6 days

Turnip Refrigerator, 20-30 days

Winter squash Cool, 1-2 months

The reading chapter instead names every crop, states appropriate handling conditions and requires temperature and inspection records. For perishable and pre-cut produce use current food-safety guidance; for long-term intact crop storage use a crop-specific postharvest specification. A universal “months” figure cannot replace those conditions.

Contemporary illustrations and historical evidence

The new SVGs are editable contemporary illustrations. They explain crop parts, pollination, grafting, counted planting positions, every piece of the tableware inventory, utensil techniques, storage conditions, stock reconciliation and energy arithmetic. They are not archaeological reconstructions or licensed engineering drawings.

Drawing Reading chapter

islands title Island gardens: Atlantic and Indian Ocean

pineapple parts Pineapple: count six shoots and follow their growth

vanilla parts Vanilla: prepare the support and date each flower

lychee parts Lychee: one tree, a complete establishment record

coconut section Coconut: one tree, a complete establishment record

jackfruit parts Jackfruit: one tree, a complete establishment record

mango parts Mango: one tree, a complete establishment record

water ledger Reconcile the store before handing it over

battery account Read the battery label and bound the energy estimate

table setting Name every piece before laying the table

formal setting See all twenty-three pieces of the formal table

cutlery inventory Recognise every fork, knife and spoon

serving tools Keep serving tools separate from personal cutlery

cutlery rest Use the knife and fork with controlled movements

graft parts A scion, a rootstock and a living union

storage zones Replace a blurry shelf-life promise with a condition record

The fifteen distinct estate animal drawings are retained and placed inside their corresponding property accounts. The author's typed name on the island cover is a contemporary credit. Poivre's printed autograph facsimile has its own historical record.

Sources and credits: Oceania and the current reading routes

This companion separates full sources, rights records and long links from the reading book. Edition 104 completes regional batch 4/7, Oceania. Page 2 of the reading book begins its named alphabetical index; Start reading on the cover skips the front matter.

The new crop guides

Taro, breadfruit, coconut, kūmara or sweet potato, warrigal greens, macadamia and banana each have a different historical plate, a contemporary labelled SVG, numbered cultivation steps and a counted materials account. The chapter also explains water quantities, storage, colonial collecting and the limits of a signature facsimile.

Prices and their basis

Materials tables use author's planning allowances dated 15 November 2026. Two separate Argentine nursery observations identify actual displayed macadamia and banana prices, specifications and out-of-stock status; these are not added as available purchases. Unquoted plants, labour and transport remain excluded from priced subtotals. USD and EUR equivalents use Banco Nación retail banknote selling rates dated 13 November 2026: 1,570 ARS/USD and 1,770 ARS/EUR. They are not US or European retail surveys.

Named routes and preserved evidence

Artificial title prefixes have been removed from the current alphabetical index and bookmarks. Duplicate aliases with a matched subject page are merged. Real designations such as F-35 remain. The three pages after Oceania reflow the existing island, Antarctic, apple, artichoke and aubergine material; duplicate zoom crops are omitted. Their inherited evidence records remain D1136, D1201, D1138, D1202 and D1203. Earlier recovery PDFs preserve their original state.

ON THIS PAGE

SVG Scalable Vector Graphics · **USD** United States dollar · **US** United States

Audit scope

The checks cover page dimensions, renderability, navigation destinations, coded title prefixes and sparse-body detection. Newly authored pages and changed joins receive visual proofs. This is not a claim that every inherited historical assertion or source permission has been researched anew. Older source records follow with page crosswalks.

University of Hawai'i: Upland Taro, January 1997

Consulted 15 November 2026.

https://www3.ctahr.hawaii.edu/oc/freepubs/pdf/Taro.pdf

Bishop Museum: Hawaiian kalo maturity

Consulted 15 November 2026.

https://hbs.bishopmuseum.org/botany/taro/key/hawaiiankalo/media/Html/characters/maturity.html

National Tropical Botanical Garden: Breadfruit History

Consulted 15 November 2026.

https://ntbg.org/breadfruit/about-breadfruit/history/

National Tropical Botanical Garden: Breadfruit Horticulture

Consulted 15 November 2026.

https://ntbg.org/breadfruit/care/horticulture/

National Tropical Botanical Garden: Growing Regions

Consulted 15 November 2026.

https://ntbg.org/breadfruit/care/regions/

University of Florida: Coconut Palm

Consulted 15 November 2026.

https://gardeningsolutions.ifas.ufl.edu/plants/trees-and-shrubs/palms-and-cycads/coconut-palm/

University of Florida: Transplanting Palms in the Landscape

Consulted 15 November 2026.

https://ask.ifas.ufl.edu/publication/EP471

Te Ara: Growing and storing kūmara

Consulted 15 November 2026.

https://teara.govt.nz/en/kumara/page-3

University of Missouri: Growing Sweet Potatoes in Missouri

Consulted 15 November 2026.

https://extension.missouri.edu/publications/g6368

INTA: Mandioca and batata cultivation, Chaco, 2025

Consulted 15 November 2026.

https://www.argentina.gob.ar/noticias/cultivo-de-mandioca-y-batata-conocimientos-y-practicas-en-una-jornada-tecnica

Utah State University: New Zealand Spinach in the Garden

Consulted 15 November 2026.

https://extension.usu.edu/yardandgarden/research/new-zealand-spinach-in-the-garden

Royal Botanic Gardens, Kew: Tetragonia tetragonoides

Consulted 15 November 2026.

https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:364795-1

Northern NSW Local Health District: Vegetable Gardening in the Classroom

Consulted 15 November 2026.

https://health-promotion.nnswlhd.health.nsw.gov.au/wp-content/uploads/2025/07/Vegetable-Gardening-in-the-Classroom.pdf

Cooking methods and taro corm composition: research study, 2022

Consulted 15 November 2026.

https://academic.oup.com/ijfst/article/57/8/5144/7806854

NSW Agriculture: Macadamia culture in NSW, January 2005

Consulted 15 November 2026.

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0005/75740/Macadamia-culture-in-NSW-Primefact-5---final.pdf

Sunshine Coast Council: Macadamia, what is in a name?

Consulted 15 November 2026.

https://mary-cairncross.sunshinecoast.qld.gov.au/learn/plants/macadamia/what-s-in-a-name

University of Florida: Banana Growing in the Florida Home Landscape

Consulted 15 November 2026.

https://ask.ifas.ufl.edu/publication/mg040

SENASA: Banana phytosanitary surveillance in Misiones, 2026

Consulted 15 November 2026.

(continued)

https://www.argentina.gob.ar/noticias/misiones-fortalecimiento-de-la-vigilancia-fitosanitaria-en-cultivos-de-banano

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **NSW** New South Wales, Australia · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

Natural History Museum: Joseph Banks, biographical catalogue

Consulted 15 November 2026.

https://www.nhm.ac.uk/CalmView/Record.aspx?id=PX291&pos=1&src=CalmView.Persons

National Museum of Australia: Banks and the Māori collection

Consulted 15 November 2026.

https://www.nma.gov.au/audio/captain-james-cook-series/transcripts/footprints-in-the-sand-banks-maori-collection

National Museum of Australia: Endeavour reflections

Consulted 15 November 2026.

https://www.nma.gov.au/exhibitions/endeavour-voyage/endeavour-reflections

Banco Nación: banknote selling rates, 13 November 2026

Consulted 15 November 2026.

https://www.bna.com.ar/Personas

La Huertina Garden: macadamia plant, observed 15 November 2026

Consulted 15 November 2026.

https://www.lahuertinagarden.com.ar/arboles-frutales/exoticas/planta-de-nuez-de-macadamia

Vivero Mario: banana, observed 15 November 2026

Consulted 15 November 2026.

https://tienda.viveromario.com.ar/productos/banano/?entry_path=category

Taro: read the corm beneath the leaf

Taro, dasheen or eddoe. Watercolour by an unidentified Indian artist, early nineteenth century; Richard Cresswell collection, Royal Albert Memorial Museum. It depicts the plant, not a Hawaiian farm.

Creator or catalogue attribution: Unknown Indian artist. Date: Early nineteenth century, according to the collection description. Rights statement: Public domain. Used in earlier reading pages 1735.

Image preserved as a historical reproduction; scaled to fit, without invented documentary detail.

Image catalogue and original: https://commons.wikimedia.org/wiki/File:Taro,_dasheen_or_eddoe_-_Unknown_-_19_1927_2_1.jpg

Read the place before copying the garden

Creator or catalogue attribution: Goodhue, E. S. (Edward Solon). Date: 1900 publication. Rights statement: No restrictions. Used in earlier reading pages 1734.

Image preserved as a historical reproduction; scaled to fit, without invented documentary detail.

Image catalogue and original: https://commons.wikimedia.org/wiki/File:Beneath_Hawaiian_palms_and_stars_(1900)_(14577654649).jpg

Rights statement: https://www.flickr.com/commons/usage/

ON THIS PAGE

= equals

Breadfruit: a tree carried between islands

Creator or catalogue attribution: Francisco Manuel Blanco (O.S.A.). Date: 1880-1883 illustrated edition. Rights statement: Public domain. Used in earlier reading pages 1738.

Image preserved as a historical reproduction; scaled to fit, without invented documentary detail.

Image catalogue and original: https://commons.wikimedia.org/wiki/File:Artocarpus_incisus_Blanco2.267.jpg

Coconut: the fruit is not the whole palm

Coconut palm in the later illustrated Flora de Filipinas, plate 364, 1880-1883. The plant and fruit sections share one historical botanical plate. This is not a photograph of an estate planting.

Creator or catalogue attribution: Francisco Manuel Blanco (O.S.A.). Date: 1880-1883 illustrated edition. Rights statement: Public domain. Used in earlier reading pages 1741.

Image preserved as a historical reproduction; scaled to fit, without invented documentary detail.

Image catalogue and original: https://commons.wikimedia.org/wiki/File:Cocos_nucifera_Blanco2.364.png

Warrigal greens: read the plant behind the common name

Creator or catalogue attribution: Vilmorin-Andrieux & Cie. Date: 1883 publication; 2014 is a digital-record date. Rights statement: Public domain. Used in earlier reading pages 1747.

Image preserved as a historical reproduction; scaled to fit, without invented documentary detail.

Image catalogue and original: https://commons.wikimedia.org/wiki/File:T%C3%A9tragone_cornue_Vilmorin-Andrieux_1883.png

Macadamia: a historical name needs a modern identification

Creator or catalogue attribution: Internet Archive Book Images. Date: 1909 publication. Rights statement: No restrictions. Used in earlier reading pages 1750.

Image preserved as a historical reproduction; scaled to fit, without invented documentary detail.

Image catalogue and original: https://commons.wikimedia.org/wiki/File:Comprehensive_catalogue_of_Queensland_plants,_b oth_indigenous_and_naturalised._To_which_are_added,_where_known,_the_aboriginal_and_other_vernacular_names;_with_n u merous_illustrations,_and_copious_(14802858483).jpg

Rights statement: https://www.flickr.com/commons/usage/

Banana: one stem fruits while the mat continues

Creator or catalogue attribution: Rumphius. Date: 1747 publication. Rights statement: Public domain. Used in earlier reading pages 1753.

Image preserved as a historical reproduction; scaled to fit, without invented documentary detail.

Image catalogue and original: https://commons.wikimedia.org/wiki/File:Musa_Simiarium_Rumphius_1747_Herbarium_amboinense_5_61.png

Joseph Banks, Tupaia and the knowledge carried home

Creator or catalogue attribution: Joseph Banks. Date: 1830 publication of the printed facsimile. Rights statement: Public domain. Used in earlier reading pages 1758.

Image preserved as a historical reproduction; scaled to fit, without invented documentary detail.

Image catalogue and original: https://commons.wikimedia.org/wiki/File:Joseph_Banks_Sig.png

Kūmara: growing a warm-season crop through a cool winter

Creator or catalogue attribution: Wilfred W. Robbins. Date: 1917 publication. Rights statement: Public domain. Used in earlier reading pages 1744.

Image preserved as a historical reproduction; scaled to fit, without invented documentary detail.

Image catalogue and original: https://commons.wikimedia.org/wiki/File:Ipomoea_batatas_Morphologie_des_tubercules.jpg

Contemporary drawings and authorship

Eleven new SVG files explain named crop parts, planting counts, water and storage. They are original contemporary teaching drawings by the authoring workflow, not historical records. Their dimensions are expressly labelled as worked planning examples where no site-specific design exists.

Illustration Reading chapter

oceania title Oceania: gardens across the Pacific

guide taro Taro: establish and follow sixteen plants

guide breadfruit Breadfruit: prepare a place for one named tree

guide coconut Coconut: allow for height, water and access

guide kumara Sweet potato: plant sixteen slips and lift the roots carefully

guide warrigal Warrigal greens: establish twelve harvest positions

guide macadamia Macadamia: plan two trees as a long-term orchard trial

guide banana Banana: manage a small mat through succession

water account Measure the water before promising the harvest

storage functions The harvest continues into the store

Joseph Banks, Tupaia and the knowledge carried home

The Banks signature is a printed facsimile with its own historical publication record.

Sources, image credits and the current page routes

Edition 103 · batch 3/7 · Asia and the Middle East, source B831. This companion holds the evidence and image rights separately from the reading book. The reading cover's Start reading button goes directly to Book I; page 2 opens its current alphabetical index.

New records below use A103 for evidence and I103 for images. Reading-page numbers are the actual Edition 103 page numbers. The inherited Edition 102 register follows intact, with a crosswalk here for its older reading-page references. Source labels such as B831 identify preserved source material, not current pagination.

ON THIS PAGE

SVG Scalable Vector Graphics

What was added

Cost basis

BNA retail banknote selling rates dated 13 November 2026: USD 1 = ARS 1,570; EUR 1 = ARS 1,770. Other than the named observed cat-food price, the new budgets are authored planning allowances dated 15 November 2026. They are not quotations or US/EU retail surveys. Recheck currency, tax, delivery, labour and local supply before buying.

Historical image provenance

The historical assets have individual catalogue identities and rights records. The illustrated author signatures are contemporary designs, separate from historical facsimiles.

Audit scope

Every final earlier reading page is checked for a valid A4 page box, renderability, link destinations and visible content. Newly authored pages and changed joins receive separate visual proofs. This does not claim that every inherited historical assertion or every older source permission has been independently re-researched in this batch.

A103-DONG · FAO: Dong rice-fish-duck heritage

Accessed 2026-11-15.

https://www.fao.org/giahs/giahs-around-the-world/china-dong-rice-fish-duck-system/en

A103-HUZHOU · FAO: Huzhou mulberry-dyke and fish-pond system

Accessed 2026-11-15.

https://www.fao.org/giahs/giahs-around-the-world/china-zhejiang-huzhou-system/en

A103-QINGTIAN · FAO: Qingtian rice-fish culture, 2012

Accessed 2026-11-15.

https://www.fao.org/agroecology/new-knowledge-module/publications/detail/the-globally-important-agricultural-heritage-systems-%28giahs%29-rice-fish-culture-qingtian-county-china/en

A103-REFUGE · FAO: integrated agriculture-aquaculture primer, rice-fish

Accessed 2026-11-15.

https://www.fao.org/4/y1187e/y1187e24.htm

A103-POND · FAO: water quality and fish ponds

Accessed 2026-11-15.

https://www.fao.org/4/t0555e/T0555E09.htm

A103-DUCKFISH · FAO: integrated livestock-fish production

Accessed 2026-11-15.

https://www.fao.org/4/ac155E/AC155E04.htm

ON THIS PAGE

BNA Banco de la Nación Argentina · **USD** United States dollar · **ARS** Argentine peso · **EUR** Euro · **=** equals · **FAO** Food and Agriculture Organization of the United Nations

A103-DUCK · FAO: duck-fish culture manual, Bangladesh

Accessed 2026-11-15.

https://www.fao.org/4/ac375e/AC375E04.htm

A103-NUTRIENTS · FAO: nutrition and feeding of farmed fish

Accessed 2026-11-15.

https://www.fao.org/fishery/docs/CDrom/aquaculture/a0845t/volume2/docrep/field/003/ab467e/AB467E05.htm

A103-PACU · INTI: Puerto Las Palmas, rice-pacú rotation, 2024

Accessed 2026-11-15.

https://www.argentina.gob.ar/inti/pymes-exportan/alimentos-y-bebidas/edicion-37-febrero-2024/puerto-las-palmas-sa-pacu-de

A103-WATER · FDA: agricultural water requirements

Accessed 2026-11-15.

https://www.fda.gov/food/food-safety-modernization-act-fsma/frequently-asked-questions-agricultural-water-requirements-under-fsma-produce-safety-rule

A103-MANURE · FDA: biological soil amendments

Accessed 2026-11-15.

https://www.fda.gov/media/114775/download

A103-BOK · University of Minnesota: Chinese cabbage and bok choy

Accessed 2026-11-15.

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/growing-chinese-cabbage-and-bok-choy

A103-EDAMAME · UF/IFAS: edamame for Florida

Accessed 2026-11-15.

https://ask.ifas.ufl.edu/publication/HS1521

A103-YAM · PROSEA: Dioscorea alata

Accessed 2026-11-15.

https://prosea.prota4u.org/view.aspx?id=3227

A103-LYCHEE · UF/IFAS: lychee in the home landscape

Accessed 2026-11-15.

https://ask.ifas.ufl.edu/publication/MG051

ON THIS PAGE

FAO Food and Agriculture Organization of the United Nations · **INTI** Instituto Nacional de Tecnología Industrial · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **UF/IFAS** University of Florida / Institute of Food and Agricultural Sciences · **PROSEA** Plant Resources of South-East Asia · **=** equals

A103-MANGO · UF/IFAS: mango in the home landscape

Accessed 2026-11-15.

https://ask.ifas.ufl.edu/publication/MG216

A103-DATE · FAO: date palm propagation

Accessed 2026-11-15.

https://www.fao.org/4/Y4360E/y4360e09.htm

A103-CFA · Cat Fanciers' Association: breed catalogue and individual profiles

Accessed 2026-11-15.

https://cfa.org/breeds/

A103-TICA · TICA: breed catalogue; variants and classes differ

Accessed 2026-11-15.

https://tica.org/ticas-breeds/browse-all-breeds/

A103-FIFE · FIFe: recognised and preliminary breeds

Accessed 2026-11-15.

https://fifeweb.org/cats/breeds/

A103-FOOD · Cornell Feline Health Center: feeding your cat

Accessed 2026-11-15.

https://www.vet.cornell.edu/departments-centers-and-institutes/cornell-feline-health-center/health-information/feline-health-topics/feeding-your-cat

A103-NUTRITION · Merck Veterinary Manual: nutrition for cats

Accessed 2026-11-15.

https://www.merckvetmanual.com/cat-owners/selecting-and-providing-a-home-for-a-cat/proper-nutrition-for-cats

A103-RAW · CDC: pet food safety

Accessed 2026-11-15.

https://www.cdc.gov/healthy-pets/about/pet-food-safety.html

A103-EXTRAS · Cats Protection: cats and human foods

Accessed 2026-11-15.

https://www.cats.org.uk/help-and-advice/diet/cats-and-human-foods

A103-LIFE · AAHA/AAFP: feline life-stage guidelines, 2021

Accessed 2026-11-15.

https://www.aaha.org/wp-content/uploads/2021/02/2021-aaha-aafp-feline-life-stage-guidelines.pdf

ON THIS PAGE

UF/IFAS University of Florida / Institute of Food and Agricultural Sciences · **FAO** Food and Agriculture Organization of the United Nations · **TICA** The International Cat Association · **FIFe** Fédération Internationale Féline

A103-ENV · FelineVMA: environmental needs

Accessed 2026-11-15.

https://catvets.com/wp-content/uploads/2025/02/FelineVMA-Environmental-Needs_BW.pdf

A103-WELFARE · UK Animal Welfare Committee: feline breeding practices

Accessed 2026-11-15.

https://www.gov.uk/government/publications/opinion-on-cat-breeding-practices/opinion-on-the-welfare-implications-of-current-and-emergent-feline-breeding-practices

A103-RATS · Parsons et al., 2018: cats and urban rats, field study

Accessed 2026-11-15.

https://www.frontiersin.org/journals/ecology-and-evolution/articles/10.3389/fevo.2018.00146/full

A103-SEAL · CDC: seal gaps to prevent rodents

Accessed 2026-11-15.

https://www.cdc.gov/healthy-pets/rodent-control/seal-up.html

A103-TRAP · CDC: trapping rodents

Accessed 2026-11-15.

https://www.cdc.gov/healthy-pets/rodent-control/trap-up.html

A103-FX · Banco Nación: retail banknote selling rates, 13 November 2026

Accessed 2026-11-15.

(continued)

https://www.bna.com.ar/Personas

A103-CATPRICE · Puppis: Excellent adult cat chicken/rice, 7.5 kg

Accessed 2026-11-15.

https://www.puppis.com.ar/gatos/excellent?map=category-1%2Cbrand

A103-MUSTARD · Utah State University: mustard in the garden

Accessed 2026-11-15.

https://extension.usu.edu/yardandgarden/research/mustard-in-the-garden

A103-WEIR · Museum Wales: Our Cats by Harrison Weir, 1889

Accessed 2026-11-15.

https://amgueddfa.cymru/blog/807/Our-Cats-by-Harrison-Weir-1889/

A103-PDSA · PDSA: the best diet for your cat

Accessed 2026-11-15.

https://www.pdsa.org.uk/pet-help-and-advice/looking-after-your-pet/kittens-cats/the-best-diet-for-your-cat

ON THIS PAGE

UK United Kingdom · **kg** kilogram, a mass unit · **=** equals

A103-DUCKBREEDS · University of California: raising ducks in small flocks

Accessed 2026-11-15.

https://ucanr.edu/sites/default/files/2021-10/359561.pdf

A103-DUCKVET · Royal Veterinary College: duck care, reviewed December 2024

Accessed 2026-11-15.

https://www.rvc.ac.uk/Media/Default/Beaumont%20Sainsbury%20Animal%20Hospital/EXOTICS/Animal%20Care%20Factsheets/Duck%20caresheet%20Dec%202024%20vb.pdf

A103-CRAB · FAO: cultured species, Chinese mitten crab

Accessed 2026-11-15.

https://www.fao.org/fishery/docs/DOCUMENT/aquaculture/CulturedSpecies/file/en/en_chineserivercrab.htm

A103-CRABRISK · US Fish and Wildlife Service: Chinese mitten crab risk screening, January 2026

Accessed 2026-11-15.

https://www.fws.gov/sites/default/files/documents/2026-01/ecological-risk-screening-summary-chinese-mitten-crab-jan-2026.pdf

A103-RICEAR · INTEA: Argentine rice varieties

Accessed 2026-11-15.

https://www.argentina.gob.ar/intea/arroz

A103-CRABSTUDY · Rice-crab experiment in Jilin, 2023

Accessed 2026-11-15.

https://pmc.ncbi.nlm.nih.gov/articles/PMC10076119/

A103-YELLOWBILL · BirdLife South Africa: Yellow-billed Duck, Anas undulata

Accessed 2026-11-15.

https://www.birdlife.org.za/red-data-book/red-list/yellow-billed-duck/

A103-MANGONAME · Kew Plants of the World Online: Mangifera rostrata synonymy

Accessed 2026-11-15.

https://powo.science.kew.org/taxon/urn%3Alsid%3Aipni.org%3Anames%3A69964-1

A103-MUNG · PROTA/PROSEA: Vigna radiata

Accessed 2026-11-15.

https://prota.prota4u.org/protav8.asp?fr=1&p=Vigna+radiata

I103-rice · Oryza sativa Blanco1.102.png

Rice in the illustrated Flora de Filipinas, late nineteenth century; grain-bearing panicle and plant parts

ON THIS PAGE

FAO Food and Agriculture Organization of the United Nations · **US** United States · **INTEA** Innovaciones Tecnológicas Agropecuarias S.A · **=** equals

Creator: Francisco Manuel Blanco (O.S.A.). Date in catalogue: 1880-1883?. Rights: Public domain. earlier Reading pages: 1695, 1696, 1697.

Source credit: Flora de Filipinas [...] Gran edicion [...] [Atlas I].[1]. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Oryza_sativa_Blanco1.102.png

I103-mung · Ser. 1042 vol. 18, page 028.tiff

A Japanese botanical sheet containing BOTH Lablab purpureus and Vigna radiata; do not treat every pictured pod as mung bean

Creator: AnonymousUnknown author. Date in catalogue: Unknown date. Rights: CC BY 4.0. earlier Reading pages: 1698, 1699, 1700.

Source credit: http://hdl.handle.net/1887.1/item:938317. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Ser._1042_vol._18,_page_028.tiff

Licence: https://creativecommons.org/licenses/by/4.0

I103-mustard · Brassica juncea (Köhler).jpg

Brassica juncea in Köhler's botanical atlas, printed 1887

Creator: Hermann Adolf Köhler (1834 - 1879). Date in catalogue: printed 1887. Rights: Public domain. earlier Reading pages: 1701, 1702, 1703.

Source credit: http://caliban.mpiz-koeln.mpg.de/koehler1 (index) http://caliban.mpiz-koeln.mpg.de/koehler1/high/DSC_2600.jpg (image). Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Brassica_juncea_(K%C3%B6hler).jpg

I103-pakchoi · Pak-choï Vilm.jpg

Pak choi engraving in Vilmorin-Andrieux, Les plantes potagères, 1904; the upload date is modern

Creator: Illustration Vilmorin 1904. Date in catalogue: 2023-03-07 13:17:09. Rights: CC0. earlier Reading pages: 1704, 1705, 1706.

Source credit: Les plantes potagères Vilmorin Andrieux 1904. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Pak-cho%C3%AF_Vilm.jpg

Licence: http://creativecommons.org/publicdomain/zero/1.0/deed.en

I103-soy · Glycine max Taub131a.png

Glycine max botanical illustration, 1891

Creator: Paul Taubert. Date in catalogue: 1891. Rights: Public domain. earlier Reading pages: 1707, 1708, 1709.

Source credit: Leguminosae. in Engelmann (ed.): Natürliche Pflanzenfamilien. Vol. III, 3.. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Glycine_max_Taub131a.png

I103-ube · NdP Dioscorea alata.png

Dioscorea alata from Naturgeschichte des Pflanzenreichs, 1887

Creator: Gotthilf Heinrich von Schubert File:Naturgeschichte des Pflanzenreichs Tafel XLIX.jpg: Аимаина хикари. Date in catalogue: 1887. Rights: Public domain. earlier Reading pages: 1710, 1711, 1712.

Source credit: Naturgeschichte des Pflanzenreichs Tafel XLIX.jpg. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:NdP_Dioscorea_alata.png

I103-date · Phoenix Dactylifera - Palmier-Dattier. (Date palm) (NYPL b14485031-1109245).tiff

Date-palm plate from the Nouveau Duhamel collection, catalogue date 1801

Creator: Scan by NYPL. Date in catalogue: 1801. Rights: Public domain. earlier Reading pages: 1719, 1720, 1721.

Source credit: https://digitalcollections.nypl.org/items/510d47dc-8dc6-a3d9-e040-e00a18064a99. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Phoenix_Dactylifera_-_Palmier-Dattier._(Date_palm)_(NYPL_b14485031-1109245).tiff

I103-mulberry · Morus alba Blanco1.206.png

Morus alba in the illustrated Flora de Filipinas, late nineteenth century

Creator: Francisco Manuel Blanco (O.S.A.). Date in catalogue: 1880-1883?. Rights: Public domain. earlier Reading pages: 1737, 1738.

Source credit: Flora de Filipinas [...] Gran edicion [...] [Atlas I].[1]. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Morus_alba_Blanco1.206.png

I103-silk · Textiles; silk manufacture in China, feeding the silkworms. Wellcome V0024218.jpg

The daily feeding of silkworms with fresh leaves; printed for Carington Bowles in London. Wellcome catalogues the represented scene as China; exact print date not established

Historical images: identity, creator and reuse record (continued)

Creator: Unidentified engraver; printed for Carington Bowles. Date in catalogue: . Rights: CC BY 4.0. earlier Reading pages: 1722, 1723.

Source credit: https://wellcomeimages.org/indexplus/obf_images/4b/61/a8756d9979adc1e259de678774d4.jpg Gallery:

https://wellcomeimages.org/indexplus/image/V0024218.html Wellcome Collection gallery (2018-04-03): https://wellcomecollection.org/works/skw4vyjt CC-BY-4.0. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Textiles;_silk_manufacture_in_China,_feeding_the_silkworms._Wellcome_V0024218.jpg

Licence: https://creativecommons.org/licenses/by/4.0

I103-carp · Cyprinus carpio - 1774-1804 - Print - Iconographia Zoologica - Special Collections University of Amsterdam - UBA01 IZ15000029.tif

Common carp, historical natural-history print dated between 1774 and 1804 in the Amsterdam collection

Creator: . Date in catalogue: between 1774 and 1804date QS:P571,+1500-00-00T00:00:00Z/6,P1319,+1774-00-00T00:00:00Z/9,P1326,+1804-00-00T00:00:00Z/9. Rights: Public domain. earlier Reading pages: 1729, 1730.

Source credit: Bloch tab. 16. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Cyprinus_carpio_-_1774-1804_-_Print_-_Iconographia_Zoologica_-_Special_Collections_University_of_Amsterdam_-_UBA01_IZ15000029.tif

I103-cats · Cats suggested as the fifty-three stations of the Tokaido.jpg

Utagawa Kuniyoshi, Cats suggested as the fifty-three stations of the Tokaido, catalogue date 1850

Creator: Utagawa Kuniyoshi (1798-1861). Date in catalogue: 1850date QS:P571,+1850-00-00T00:00:00Z/9. Rights: Public domain. earlier Reading pages: 523.

Source credit: http://visipix.com/search/search.php?userid=1616934267&q=%272aAuthors/K/Kuniyoshi%201797-1861%2C%20Utagawa%2C%20Japan%27&s=22&l=en&u=2&ub=1&k=1. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Cats_suggested_as_the_fifty-three_stations_of_the_Tokaido.jpg

I103-weircat · Our cats and all about them (Page 17) BHL18095103.jpg

Page from Harrison Weir's Our Cats and All About Them, 1889

Creator: Weir, Harrison. Date in catalogue: . Rights: Public domain. earlier Reading pages: 524.

Source credit: https://www.biodiversitylibrary.org/pageimage/18095103. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Our_cats_and_all_about_them_(Page_17)_BHL18095103.jpg

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I103-noria · Hama (Hamath). Double water-wheel LOC matpc.07593.jpg

Hama, double water-wheel on the Orontes, Matson Collection photograph, Library of Congress; catalogue date 1900; the paired views form a historical stereoscopic image, not a repeated layout asset

Creator: Matson Collection. Date in catalogue: 1900. Rights: Public domain. earlier Reading pages: 1694.

Source credit: Library of Congress Catalog: https://www.loc.gov/pictures/collection/matpc/item/mpc2004006714/PP Original url: https://hdl.loc.gov/loc.pnp/matpc.07593. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Hama_(Hamath)._Double_water-wheel_LOC_matpc.07593.jpg

I103-duck · Magnus von Wright - Ducks.jpg

Magnus von Wright, Ducks, 1853; a historical painting, not a modern breed identification

Creator: Magnus von Wright. Date in catalogue: 1853date QS:P571,+1853-00-00T00:00:00Z/9. Rights: Public domain. earlier Reading pages: 1740, 1741.

Source credit: http://kokoelmat.fng.fi/app?si=A+IV+4299. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Magnus_von_Wright_-_Ducks.jpg

I103-lychee_historical · Sonnerat litchi.jpg

Pierre Sonnerat, lychee plate from Voyage aux Indes Orientales et à la Chine, 1782; small original reproduction

Creator: Pierre Sonnerat. Date in catalogue: 1782. Rights: Public domain. earlier Reading pages: 1713, 1714, 1715.

Source credit: Voyage aux Indes Orientales et à la Chine - Tome 2 - planche 129 en regard page 230 via http://gallica.bnf.fr flore de la Chine. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Sonnerat_litchi.jpg

I103-mango · Mangifera rostrata Blanco1.62.png

Mangifera rostrata in Flora de Filipinas; Kew treats that historical name as a synonym of Mangifera indica

Creator: Francisco Manuel Blanco (O.S.A.). Date in catalogue: 1880-1883?. Rights: Public domain. earlier Reading pages: 1716, 1717, 1718.

Source credit: Flora de Filipinas [...] Gran edicion [...] [Atlas I].[1]. Downloaded 15 November 2026; resized for publication, no invented documentary details.

Catalogue and original file: https://commons.wikimedia.org/wiki/File:Mangifera_rostrata_Blanco1.62.png

Glossary: materials, measures and living systems

Terms are gathered here to keep short definitions from spilling onto separate earlier reading pages. Distinct inherited meanings retain their original chapter context. The new terms identify their evidence records where relevant. Historical source references remain in the evidence registers. A definition is not a complete operating instruction.

08B

European-series roller-chain designation with 12.7 mm pitch; a suffix identifies strand count.

2V

Two-frequency geodesic subdivision: each original triangular edge is divided into two before the new vertices are projected to the sphere. Context: Working drawings and records.

An aluminium alloy designation, not a complete material specification without temper and product form.

A

Ampere, the unit of electric current. In an equation, distinguish the unit A from a node also labelled A. Context: Ohm at the Workbench.

A-frame

A shelter with two sloping sides meeting at a ridge. Its usable space depends on the pitch and tension. Context: Published book glossary.

A3

Paper measuring 297 × 420 mm. Context: Shelter opening lessons.

Paper format measuring 297 by 420 millimetres. Context: Laboratory reader.

A4

Paper size 210 by 297 millimetres. Context: Measure reader.

Paper format measuring 210 × 297 mm. Context: Evidence reader.

Paper measuring 210 × 297 mm. Context: Shelter opening lessons.

Paper format measuring 210 by 297 millimetres. Context: Laboratory reader.

Glossary: materials, measures and living systems (continued)

Paper format 210 × 297 mm. Print actual-size templates at 100% and verify the scale bar. Context: Rubik and the Architecture of a Move.

A paper size of 210 × 297 mm.

AA

A standard cylindrical battery size designation. It does not mean that every AA cell has the same chemistry or voltage; these builds use two 1.5 V cells. Context: Measure reader.

A standardized battery-size designation, not an acronym. Chemistry and voltage must still be specified. Context: Ohm at the Workbench.

ON THIS PAGE
mm millimetre, 0.001 metre · **V** volt, electrical potential difference · **×** multiplied by · **%** percent, parts per hundred · **AA** A standardized cylindrical battery size designation, not an acronym

Absolute pressure

Pressure measured relative to vacuum; it differs from gauge pressure measured relative to a local reference such as atmosphere.

AC

Alternating current, or a voltage that varies periodically. Context: Moons reader.

Alternating current, or a varying voltage or current component. Context: Measure reader.

Accepted stock

Items inspected and released for a specified use. Rejected items and open purchase orders are counted separately. Context: Published book glossary.

Access route

A clear route for entry, exit or reaching supplies, including during loss of normal services. Context: Published book glossary.

Accession

A separately identified entry in a germplasm collection, documented with its source and identity. Successive seed lots can be produced from one accession. Context: Published book glossary.

A unique collection entry used to preserve an item's identity and source. Context: Laboratory reader.

The receiving collection's formal entry of an object into its holdings. A field number is not an accession number. Context: The Field Herbarium.

An object or collection entry assigned an institutional identity. A barcode is not the same as a collector's gathering number. Context: Chañar.

Glossary: materials, measures and living systems (continued)

A separately registered item or collection entry. Context: Working drawings and records.

ACH

Air changes per hour: ventilation volume flow divided by the room volume, in compatible units. Context: Domes, pods and pavilions: from a counted model to a building brief.

Achene

A small dry fruit with a single seed. The specks on the outside of a strawberry are a familiar example. Context: Published book glossary.

Across corners

The distance between opposite vertices; it is larger than the across-flats dimension for a regular octagon. Context: Working drawings and records.

Across flats

The distance between two opposite parallel sides of a polygon. Context: Working drawings and records.

Actuator

A component that changes the controlled system in response to a command. Context: Laboratory reader.

ON THIS PAGE

AC Alternating current

Ad triangulum

A proportional construction using a triangle to relate dimensions in a drawing. The chosen span sets the size of the geometric figure. Context: Published book glossary.

ADMET

Absorption, distribution, metabolism, excretion and toxicity. Context: Evidence reader.

Afocal telescope

An ideal telescope that accepts parallel light and returns parallel light. The thin-lens focal-length sum sets the lens spacing. Context: Published book glossary.

AH

Anno Hegirae, Islamic calendar year numbering; a lunar-calendar year is not interchangeable with a Common Era year. Context: Laboratory reader.

AI

Artificial intelligence; a class of computational methods, not an independent guarantee of a claim. Context: Moons reader.

Artificial intelligence; the source figure concerns a computational research agent. Context: Evidence reader.

Air-control layer

A continuous layer and its sealed connections that limit uncontrolled air movement through the enclosure. Context: Working drawings and records.

Al

Chemical symbol for aluminium. Context: Materials reader.

Algorithm

A specified sequence of operations. Its usefulness as a solving step depends on the starting case and desired result. Context: Rubik and the Architecture of a Move.

alidade

A sighting rule used to establish a direction and draw its ray on a plane table. Context: Ground reader.

Alkane

A saturated acyclic hydrocarbon; the class has the general formula CnH2n+2. Context: Materials reader.

Allocation

A recorded share of a limited resource assigned under an agreed rule. Context: Published book glossary.

Alloy

A metallic material containing more than one element; grade and condition matter. Context: Materials reader.

AlN

Aluminium nitride, written with chemical element symbols. Context: Evidence reader.

ON THIS PAGE

ADMET Absorption, distribution, metabolism, excretion and toxicity · **AH** Anno Hegirae, Islamic calendar year numbering · **AI** Artificial intelligence

AlphaFold DB

AlphaFold Protein Structure Database; includes predicted structures and their associated confidence information. Context: Evidence reader.

Amendment

Material added to soil to change a specified property. Need and quantity depend on soil and crop. Context: Published book glossary.

Anabaptist

A Christian historical movement associated with adult baptism, within which the Amish developed. Context: Published book glossary.

Angular magnification

The apparent angle through an instrument divided by the unaided angle. It is different from an area ratio or image resolution. Context: Published book glossary.

ANMAT

Administración Nacional de Medicamentos, Alimentos y Tecnología Médica, Argentina's regulator for medicines, food and medical technology.

Administración Nacional de Medicamentos, Alimentos y Tecnología Médica, the Argentine national administration named in the cited food resolution. Context: Chañar.

Anode

The positive electrode in the electrolytic arrangement shown here. Context: Laboratory reader.

AP-42

Compilation of Air Pollutant Emissions Factors, the EPA publication series used as a historical process reference. Context: Process reader.

APN

Administración de Parques Nacionales, Argentina's National Parks Administration. Its research permissions concern its jurisdiction. Context: The Field Herbarium.

Apparent mass

A mass inferred through a method whose behaviour may differ from the molecule's true mass. Context: Laboratory reader.

Application efficiency

The fraction of supplied irrigation water retained beneficially in the crop root zone under the stated conditions. Used to convert net requirement to gross delivery. Context: Published book glossary.

Arbitrary unit

A stated relative signal scale without a claimed absolute physical calibration. Context: Laboratory reader.

ON THIS PAGE
DB Database, in the AlphaFold resource name · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **EPA** Environmental Protection Agency, United States · **APN** Administración de Parques Nacionales

Archive plate

A full-frame reproduction accompanied by its identifier, topic connection and an explanation that separates visible content from verified claims. Context: Published book glossary.

Argentina

First regional context in these readers; local examples are teaching scenarios unless identified as a documented case. Context: Moons reader.

Aril

A fleshy covering associated with a seed. The edible portion of a lychee is an aril. Context: Published book glossary.

Arrope

A concentrated fruit preparation. Its product category, process and storage evidence must be specified; a historical account is not a validated preservation schedule. Context: Chañar.

ARS

Argentine peso, the currency used in the Argentina budgets. Context: Moons reader.

Argentine peso. Planning amounts are separate from US dollars and euros. Context: Measure reader.

Argentine peso; a currency amount, not a conversion from the other price columns. Context: Evidence reader.

Argentine peso. Context: Shelter opening lessons.

Glossary: materials, measures and living systems (continued)

Argentine peso. The cost column is an independent planning allowance, not an exchange-rate conversion. Context: Laboratory reader.

Argentine peso; local price currency.

Argentine peso, used here for prices quoted in Argentina. Context: Ohm at the Workbench.

Argentine peso. Amounts in this reader distinguish planning allowances from dated listed prices. Context: The Field Herbarium.

Argentine peso. Price records must retain currency and date. Context: Chañar.

Argentine peso. A cost record must also state its date and pricing basis.

Argentine peso. Keep the amount, seller, date and payment conditions together.

Artificial uterus patent

A historical proposal for an artificial gestational system. A patent establishes a documented invention claim, not clinical success. Context: Published book glossary.

As-received basis

A result divided by the mass of the sample in its received condition, including its water. Context: Chañar.

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ARS Argentine peso · US United States

As-received mass

Mass of a material at its measured moisture content before drying. Include the weighing basis when converting a volume or calculating an amendment. Context: Published book glossary.

Ash splint

A thin strip separated from suitable ash wood and prepared for weaving. It is not interchangeable with every flat strip of wood.

Assembly drawing

A drawing showing how components relate in a complete mechanism; it does not by itself establish a tested load or operating rating. Context: Published book glossary.

atanh

Inverse hyperbolic tangent; atanh(e) = 0.5 ln((1+e)/(1-e)) for 0 < e < 1. Context: Evidence reader.

ATmega328P

Microchip/Atmel microcontroller model identifier; it does not identify every board circuit shown around the chip. Context: Ground reader.

Atrium

A principal interior space of a Roman house; its roof arrangement varied. Context: Shelter opening lessons.

Attribution

An assignment of a work, statement or image to a named source or creator. The assignment itself may need verification. Context: Published book glossary.

Au

Chemical symbol for gold, atomic number 79. A colour cue does not establish purity. Context: Materials reader.

aw

Water activity, a measure related to the availability of water. It is not interchangeable with total water content. Context: Chañar.

azeotrope

A mixture composition at which vapour and liquid have the same composition under the stated conditions; ordinary boiling then does not provide the assumed enrichment. Context: Process reader.

Azimuth

A direction measured around the horizon from a stated reference.

B

Billion, 10^9, in the poster's English short-scale magnitude notation. Context: Process reader.

B folio

The original book reference used for this continuation. B790 is a source folio, not the page number of this new reader. Context: Chañar.

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B, D, F, L, R, U

Back, down, front, left, right and up face positions in a declared holding frame. Context: Rubik and the Architecture of a Move.

BAB

Herbarium code used for the INTA collection at Castelar. It identifies a collection, not a plant name. Context: The Field Herbarium.

Barcode

A machine-readable object identifier. Preserve leading zeros, such as 02444396. Context: The Field Herbarium.

An institutional identifier printed or encoded for a specimen or object. Preserve leading zeros. Context: Chañar.

Barter

Direct exchange of specified goods or services under an agreed quantity, condition and delivery. Context: Published book glossary.

Baseline

A fixed measurement reference, or an initial set of observations for comparison. Context: Published book glossary.

Basionym

The earlier name on which a new nomenclatural combination is based. Context: Chañar.

Bast fibre

Plant fibre obtained from tissues in the stem, as in flax.

Batch

Material prepared together using the same recorded process and conditions. Context: Published book glossary.

BCE

Before the Common Era, used in historical date labels. Context: Measure reader.

Glossary: materials, measures and living systems (continued)

Before the Common Era. Context: Shelter opening lessons.

Before Common Era, a convention for historical dates. Context: Materials reader.

Before Common Era, a historical date notation.

Before the Common Era, used for calendar dates before year 1 CE.

Bijection

A one-to-one mapping with no lost or duplicated positions. Each legal move permutes the stickers. Context: Rubik and the Architecture of a Move.

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · BCE Before the Common Era · CE Common Era, historical year notation

Bill of materials

An itemised account of required materials and components, with quantities and specifications. Context: Working drawings and records.

BindingDB

A database of measured binding-affinity data. Context: Evidence reader.

Biopython

Name of an open-source biological-computation software collection. Context: Evidence reader.

Biosecurity

Practices that reduce introduction and spread of disease, including controlled animal access, separation and clean equipment. The relevant veterinary plan determines the measures. See A103-DUCKVET.

BIPM

Bureau International des Poids et Mesures, the international bureau for weights and measures. Context: Moons reader.

Bureau international des poids et mesures, the International Bureau of Weights and Measures. Context: Measure reader.

Black Paintings

The group of paintings made by Goya on the walls of his home, including Saturn, later transferred to canvas. Context: Published book glossary.

Blotter

An absorbent layer used to take moisture away from a specimen packet during pressing. Context: Published book glossary.

An absorbent paper layer that takes moisture from the specimen packet. It is different from the ventilator. Context: The Field Herbarium.

Body condition

An assessment of fat cover and body shape, interpreted alongside muscle condition, weight trend and health. It helps a veterinarian adjust a feeding plan; breed name alone cannot set a ration. See A103-NUTRITION.

BOM

Bill of materials: the quantities, specifications and costs needed for a defined build. Context: Moons reader.

Bill of materials, a counted list of parts and purchased items.

Botanical family

A taxonomic group used in crop planning to recognise related plants and possible shared hosts. Different common names do not necessarily mean different families. Context: Published book glossary.

ON THIS PAGE
BIPM Bureau international des poids et mesures, the International Bureau of Weights and Measures · **BOM** Bill of materials, the counted purchase and cut list

Botanical name

A scientific name identifying a plant taxon more precisely than an ambiguous common name. Context: Published book glossary.

Bowditch

A traverse adjustment that distributes coordinate corrections in proportion to leg length under its stated measurement assumptions. Context: Ground reader.

Branch

A connection from a shared route to a particular fixture or space. Context: Shelter opening lessons.

Brassicaceae

The plant family containing cabbage, broccoli and radish. A radish planted between main crops must still be counted in the family history. Context: Published book glossary.

Bridle

Lines connecting the flying line to selected points on a kite, distributing the pull and affecting its attitude.

Bulk density

Mass of a loose material divided by the volume it occupies, including spaces between particles. Identify its packing and moisture condition. Context: Published book glossary.

Butt joint

A connection in which the end of one piece meets the face or edge of another.

bwa

Burrows-Wheeler Aligner, a sequence-alignment tool. Context: Evidence reader.

c

Speed of light in vacuum, exactly 299,792,458 metres per second in the SI definition. Context: Moons reader.

C

Chemical symbol for carbon when used in a chemical formula. Context: Materials reader.

CAA

Código Alimentario Argentino, the Argentine Food Code.

CAD

Computer-aided design; drawing or modelling with computer software.

Calibration

A documented relationship between indications and references under stated conditions. Context: Laboratory reader.

A documented relationship between indications and reference values under stated conditions; it is not merely an adjustment. Context: Ohm at the Workbench.

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SI Système international d’unités, the International System of Units · **CAA** Código Alimentario Argentino, the Argentine Food Code · **CAD** Computer-aided design

Glossary: materials, measures and living systems (continued)

A documented relationship between an instrument indication and a reference under stated conditions. A zero check alone is not full calibration. Context: Chañar.

Text arranged to contribute a visible shape. Context: Image study companion.

Calyx

The group of sepals surrounding a flower; in roselle it enlarges around the developing capsule. Context: Edition102 Caribbean and estate animals.

Cap iron

A component bearing on a hand-plane iron. Bailey's 1867 patent changes its contact to restrain a thin cutting iron. Context: Published book glossary.

Cartouche

A framed area on a map or print containing a title, dedication, scale or other inscription. Its text can help distinguish editions. Context: Published book glossary.

Catalogue number

A code assigned to an object or record in a particular collection. Keep it with the institution code. Context: Published book glossary.

Catchment

A surface or area draining water to a particular collection point. Context: Published book glossary.

Cathode

The negative electrode in the electrolytic arrangement shown here; electrode signs depend on system context. Context: Laboratory reader.

CC BY

Creative Commons Attribution licence; attribution and the licence conditions travel with the image. Context: Moons reader.

Creative Commons Attribution: reuse under the stated licence requires attribution and other licence conditions. Context: Measure reader.

Creative Commons Attribution licence; the version is stated in the image credit. Context: Evidence reader.

Glossary: materials, measures and living systems (continued)

Creative Commons Attribution. Reuse requires the applicable attribution and licence conditions. Context: Chañar.

CC BY 4.0

Creative Commons Attribution 4.0 International. Reuse requires the specified attribution and other licence conditions. Context: The Field Herbarium.

CC BY-SA

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BY Attribution condition in a Creative Commons licence · BY-SA Creative Commons Attribution-ShareAlike

Creative Commons Attribution-ShareAlike. Adaptations must follow the applicable attribution and share-alike conditions. Context: Chañar.

CC BY-SA 3.0

Creative Commons Attribution-ShareAlike 3.0 Unported, the selected licence for the Orchard Street photograph. Context: Shelter opening lessons.

CC0

Creative Commons public-domain dedication. Context: Moons reader.

Creative Commons public-domain dedication, used by the credited Gandhi source portrait. Context: Measure reader.

Creative Commons Zero, a public-domain dedication tool.

Creative Commons Zero, a public-domain dedication or waiver to the extent legally possible. Context: The Field Herbarium.

CCA

Canadian Centre for Architecture. Context: Domes, pods and pavilions: from a counted model to a building brief.

CCTV

Closed-circuit television, the camera-system abbreviation printed on supplied sheet 088. Context: Ground reader.

CD

Drag coefficient; dimensionless when the reference convention is stated. Context: Evidence reader.

CE

Common Era, the year numbering used for the manuscript comparison. Context: Laboratory reader.

Common Era, a convention for historical dates. Context: Materials reader.

Common Era, a historical date notation.

Common Era, the calendar era used for modern dates.

CellxGene

Name of a single-cell data exploration resource. Context: Evidence reader.

Centre-to-centre length

The distance between defined joint centres; connector offsets can make the physical cut length different. Context: Working drawings and records.

Centreline dimension

Distance between specified geometric reference lines or nodes, which may differ from a physical cut length. Context: Domes, pods and pavilions: from a counted model to a building brief.

ON THIS PAGE
BY-SA Creative Commons Attribution-ShareAlike · CC0 Creative Commons Zero, a public-domain dedication tool · CCTV Closed-circuit television, the camera-system abbreviation printed on supplied sheet 088

CERN

European Organization for Nuclear Research; its acronym comes from the historical French Conseil européen pour la recherche nucléaire. It is not an EU agency. Context: Process reader.

CF

Carbon fibre; PEEK-CF denotes polyetheretherketone reinforced with carbon fibre. Context: Evidence reader.

CFRP

Carbon fibre reinforced polymer. Context: Evidence reader.

CG

Centre of gravity; the point through which resultant weight acts in a uniform gravitational field. Context: Evidence reader.

Chatter

Vibration during cutting that can spoil a surface. Bailey's patent discusses it in a hand plane. Context: Published book glossary.

CHOP

Children's Hospital of Philadelphia, the institution associated with the cited lamb study. Context: Laboratory reader.

CHSH

Clauser, Horne, Shimony and Holt: the surnames attached to a commonly used Bell inequality.

Circadian rhythm

An approximately daily biological rhythm. Light and other time cues help coordinate internal timing with the environment. [D299] Context: Published book glossary.

CIRSOC

Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles, the Argentine national civil-works safety-regulations research centre. Context: Evidence reader.

Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles, the Argentine structural-regulation centre. Context: Domes, pods and pavilions: from a counted model to a building brief.

Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles, the Argentine centre associated with the structural regulations cited here. Context: Working drawings and records.

Cistern

A storage structure for water; its access, inlet, outlet and overflow need separate identification. Context: Shelter opening lessons.

CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora; trade documentation does not replace all domestic keeping permissions. Context: Edition102 Caribbean and estate animals.

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CERN European Organization for Nuclear Research; its acronym comes from the historical French Conseil européen pour la recherche nucléaire · **EU** European Union · **CG** Centre of gravity · **CHSH** Clauser, Horne, Shimony and Holt · **CIRSOC** Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles · **CITES** Convention on International Trade in Endangered Species of Wild Fauna and Flora

CL

Lift coefficient; dimensionless when the reference convention is stated. Context: Evidence reader.

Cladode

A flattened or otherwise leaf-like stem; the green pad of a prickly pear is an example. Context: Published book glossary.

Cleavage

Preferred splitting along particular directions related to a mineral’s structure. Context: Materials reader.

Clinical endpoint

A defined health outcome measured in a study, such as a specified symptom score or event.

Clinical evidence

Research evidence involving people; its relevance depends on the study and the preparation tested. Context: Published book glossary.

ClinVar

NCBI archive of relationships among human genetic variants and reported phenotypes; NCBI means National Center for Biotechnology Information. Context: Evidence reader.

Closure

The comparison of recorded inputs and outputs within a stated accounting boundary. Context: Chokecherry: the branch, the calendar and the jar.

Closure error

The difference between recorded input and recorded output for the chosen boundary, often expressed relative to input. Context: Chañar.

cm

Centimetre, one hundredth of a metre. Context: Moons reader.

cm^3

Cubic centimetre, a unit of volume equal to one millilitre. Context: Materials reader.

CNC

Computer numerical control; machine motion directed by a program.

CnH2n+2

General formula for an acyclic saturated hydrocarbon, an alkane. It does not describe every hydrocarbon. Context: Moons reader.

Cold chain

Continued maintenance of the temperatures needed for chilled or frozen products. Context: Published book glossary.

ON THIS PAGE

CNC Computer numerical control; machine motion directed by a program

Collection event

A dated act of collecting or observing at a particular place. Several sheets may represent one gathering. Context: Published book glossary.

Collector number

The field number attached to one gathering and carried across its documented duplicates. Context: Published book glossary.

Common examination

An examination shared by pupils from several schools. In Bullitt County, pupils came to the courthouse for the county examination. Context: Published book glossary.

Common-cause failure

One event or shared dependency disabling several resources. Two pumps on one failed electrical panel do not provide independent service. Context: Published book glossary.

Commutator

Here A B A' B', executed left to right. It measures the difference between performing A then B and B then A. Context: Rubik and the Architecture of a Move.

Complete cat food

A food formulated to provide the required nutrients for the labelled life stage when used as directed. A complementary food or plain meat is not equivalent. See A103-FOOD and A103-NUTRITION.

Compluvium

The roof opening associated with the rain-receiving arrangement described here. Context: Shelter opening lessons.

Composite soil sample

Sample made by combining subsamples from a defined, comparable area and depth for a specified analysis. Context: Published book glossary.

Compost

Managed decomposed organic material. Appearance alone does not prove nutrient content or pathogen reduction. Context: Published book glossary.

Compound leaf

A leaf made of several leaflets attached along a shared structure. Leaflet count is not whole-leaf count. Context: Chañar.

Computus

A rule-based calculation of Easter. Ecclesiastical dates and lunar tables need not equal observations of the sky. Context: Published book glossary.

CONICET

Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina's national scientific and technical research council. Context: Moons reader.

Contamination

Unwanted biological, chemical or physical material affecting suitability for an intended use. Context: Published book glossary.

Control

A comparison condition used to help isolate the effect of a change.

cooler

Software and a data format used for genomic interaction matrices. Context: Evidence reader.

Coordinate uncertainty

The radius in metres around the stated coordinates that encompasses the possible location. Context: Published book glossary.

CORD

Herbarium code for the Museo Botánico de Córdoba collection. Context: The Field Herbarium.

Corm

A short, thickened underground stem that stores reserves. Taro is a familiar food example. Context: Published book glossary.

A short, swollen underground stem; distinguish it from roots.

Cormel

A small lateral corm, including those harvested from cultivated tannia. Context: Published book glossary.

A smaller corm arising alongside a main storage stem. Context: Edition102 Caribbean and estate animals.

Corner

A piece carrying three coloured facelets on a standard 3 × 3 cube. Context: Rubik and the Architecture of a Move.

COSMIC

Catalogue of Somatic Mutations in Cancer. Context: Evidence reader.

Cosmological map

An image organizing a tradition’s account of the world. Its historical importance does not establish surveyed geography. Context: Published book glossary.

Counts

Units of the least significant displayed digit in an instrument specification. Their voltage value depends on range and resolution. Context: Ohm at the Workbench.

Cover crop

A living crop grown partly or primarily for soil or management benefits during a planned interval. Context: Published book glossary.

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× multiplied by

CPE

Constant-phase element, an empirical equivalent-circuit element with a frequency-independent phase angle under its stated model. Context: Measure reader.

CPSC

United States Consumer Product Safety Commission. Context: Domes, pods and pavilions: from a counted model to a building brief.

Crop family

A botanical grouping relevant to rotation and shared pest or disease concerns. Context: Published book glossary.

Crop family rotation

Planned sequence of botanical families on a permanent plot, recorded with dates and the actual crops grown. Context: Published book glossary.

Crop rotation

A planned sequence of crops through time on an identified piece of ground, recorded with botanical families and relevant host intervals. Context: Published book glossary.

Cropped area

The ground assigned to crops, excluding the paths and other service spaces included in a complete working footprint. Context: Published book glossary.

CSV

Comma-separated values, a plain-text table exported by the workshop tools. Context: Moons reader.

Glossary: materials, measures and living systems (continued)

Comma-separated values, a plain-text table format used for exported measurements and costs. Context: Measure reader.

Comma-separated values; a plain-text table format. Decimal punctuation and field separators must be declared. Context: Evidence reader.

Comma-separated values, a plain tabular format used for exported material bills. Context: Laboratory reader.

Cu

Chemical symbol for copper. Context: Materials reader.

Cubie

Informal name for an individual small piece. A visible facelet is a surface of a piece, not the whole piece. Context: Rubik and the Architecture of a Move.

CuCrZr

Copper-chromium-zirconium alloy designation. Context: Evidence reader.

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CPE Constant-phase element, an empirical equivalent-circuit element with a frequency-independent phase angle under its stated model · **CSV** Comma-separated values

Cucurbitaceae

The family containing cucumber, pumpkin and squash; one of the four main-family groups in the worked garden example. Context: Published book glossary.

Cultivar

A named cultivated plant variety selected for particular characteristics. Context: Published book glossary.

Curing bay

An identified place for a compost batch to finish after active inputs have ceased. Its capacity and release date depend on that lot. Context: Published book glossary.

Cyanotype

A photographic process producing blue images through light-sensitive iron compounds. Atkins used contact impressions of botanical material. Context: The Field Herbarium.

Cypsela

A dry one-seeded fruit characteristic of the daisy family; often loosely called an achene. Context: Dandelion: an archive at ground level.

datum

A declared reference for positions or heights. Here a local drawing datum is distinguished from a national reference system. Context: Ground reader.

Datum

A stated reference point or level from which measurements are taken. Context: Shelter opening lessons.

A reference framework for coordinates. Record the framework actually used; do not guess it from the number of decimal places. Context: The Field Herbarium.

DB

Database. A database name does not by itself specify how its entries were obtained. Context: Evidence reader.

DC

Direct current, or a voltage with a constant polarity. Context: Moons reader.

Direct current, or the constant-polarity component of a voltage or current. Context: Measure reader.

Direct current. Context: Evidence reader.

Direct current. The abbreviation also labels a meter mode for steady-polarity voltage measurements. Context: Ohm at the Workbench.

Direct current, current with a stated direction; the meter setting used for the thermoelectric voltage test. Context: Working drawings and records.

Decortication

Removal or shedding of outer bark. The species epithet decorticans refers to bark shedding. Context: Chañar.

ON THIS PAGE
DC Direct current

Denaturation

Loss of a protein's native higher-order structure; not necessarily cleavage of its peptide chain. Context: Laboratory reader.

Denomination of origin

A protected product designation connected to a defined origin and specification. Context: Chokecherry: the branch, the calendar and the jar.

Density

Mass divided by volume; the units and measurement method must be stated. Context: Materials reader.

DESeq2

Name of a software package for differential analysis of count data; do not treat the name as a measurement unit. Context: Evidence reader.

Determination

An identification of a specimen by a named person at a stated time, with its qualification or reference. Context: The Field Herbarium.

An identification recorded for a specimen, with the determiner and date when available. Context: Working drawings and records.

DiffDock

Name of a computational molecular-docking method. Context: Evidence reader.

DIN

Deutsches Institut für Normung, the German Institute for Standardization.

Dissolved oxygen

Oxygen present in water and available to aquatic organisms. Record concentration, time, location and temperature; a daytime observation does not establish the lowest night-time value. See A103-POND.

Disulfide bond

A covalent sulfur-sulfur connection that can link parts of a protein or different chains. Context: Laboratory reader.

DM

Dry matter; the portion of a feed excluding its water.

DMM

Digital multimeter, an instrument with selectable measurement functions. Context: Ohm at the Workbench.

DNA

Deoxyribonucleic acid. Context: Evidence reader.

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DIN Deutsches Institut für Normung, the German Institute for Standardization · **DMM** Digital multimeter, an instrument with selectable electrical measurement functions · **DNA** Deoxyribonucleic acid, the molecule that carries genetic information; the label appears in the supplied collage

Dodecahedron

A polyhedron with 12 pentagonal faces, 30 edges and 20 vertices in its regular form. Context: Domes, pods and pavilions: from a counted model to a building brief.

DOI

Digital object identifier, a persistent reference to a publication or dataset. Context: Moons reader.

DPM

The supplied sheet's module designation; no expansion is established by the file. Context: Domes, pods and pavilions: from a counted model to a building brief.

Drake

An adult male duck. A drake is not required for females to lay eating eggs.

DRDY

Data ready, a signal indicating a new sensor measurement is available. Context: Ground reader.

Drupe

A fruit with a fleshy region and a hard inner fruit wall, or stone, enclosing the seed. Context: Chañar.

A fruit whose fleshy part surrounds a hard stone enclosing the seed. Context: Chokecherry: the branch, the calendar and the jar.

Dry basis

A result divided by dry-matter mass rather than the original wet sample mass. Context: Chañar.

Dry matter

Feed mass after excluding water. Forage balances compare dry matter supply and demand under stated assumptions.

DTT

Dithiothreitol, a reducing agent that can break disulfide connections under suitable conditions. Context: Laboratory reader.

Duplicate

A separate specimen from the same gathering. It is not an independent visit or necessarily identical material. Context: The Field Herbarium.

Dyke

A raised land bank between water bodies or fields. In the historical mulberry-dyke system it also supports a productive land crop. See A103-HUZHOU.

ECD

Equivalent circular diameter, here the diameter of a circle with the same projected area as the measured object. Context: Measure reader.

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DOI Digital object identifier · **DRDY** Data ready, a signal indicating a new sensor measurement is available · **DTT** Dithiothreitol, a reducing agent · **ECD** Equivalent circular diameter, here the diameter of a circle with the same projected area as the measured object

ECHA

European Chemicals Agency. Context: Moons reader.

EDA

Exploratory data analysis: examination of a dataset's structure and unusual values before selecting a model.

Edge

A piece carrying two coloured facelets. Context: Rubik and the Architecture of a Move.

EIS

Electrochemical impedance spectroscopy: a small alternating electrical perturbation is used to measure frequency-dependent response. Context: Moons reader.

Electrochemical impedance spectroscopy: measurement of electrical response as a function of frequency. Context: Measure reader.

EMG

The supplied sheet's term electromagnetic gravitic field modulation. No established performance is implied by repeating its label. Context: Evidence reader.

Emulsion

A dispersion of droplets of one liquid in another; visible mixing is not proof of a molecular solution. Context: Materials reader.

EN

European Standard, used in identifiers such as EN 1995. Context: Working drawings and records.

Energy density

Food energy per unit mass, for example kcal per gram. Divide an energy allocation by the stated kcal/g to obtain the mass to feed. Use the actual product label.

EPA

Environmental Protection Agency, United States. Context: Process reader.

ephemeris

A dated calculation of an astronomical body's position or events, tied to a specified model and time convention. Context: Moons reader.

ESA

European Space Agency, an intergovernmental agency whose membership is not identical to the EU. Context: Moons reader.

ESO

European Southern Observatory, an intergovernmental astronomy organisation with observing facilities in Chile. Context: Moons reader.

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EIS Electrochemical impedance spectroscopy: measurement of electrical response as a function of frequency · **EN** European Standard, followed by the particular standard number · **EPA** Environmental Protection Agency, United States · **EU** European Union · **ESO** European Southern Observatory, an intergovernmental astronomy organisation with observing facilities in Chile

EU

European Union. Other European countries are not automatically EU members. Context: Moons reader.

European Union. Context: Measure reader.

European Union, a present-day regional comparison, not an 1827 political setting. Context: Ohm at the Workbench.

European Union. Hungary's 1974 invention predates Hungary's EU membership. Context: Rubik and the Architecture of a Move.

European Union. It is not synonymous with all of geographic Europe. Context: Chañar.

European Union. The United Kingdom is outside the EU.

EUR

Euro; the European budget uses Spain as its shopping context. Context: Moons reader.

Euro. Spain is the European Union purchase-planning example in this reader. Context: Measure reader.

Euro; Spain is the European Union example used for the planning bill. Context: Evidence reader.

Euro. Context: Shelter opening lessons.

Euro. The European cost column is an illustrative planning allowance. Context: Laboratory reader.

Euro; the currency used for the Spain price example.

Euro, the currency used for the European price example. Context: Ohm at the Workbench.

Euro. An empty European quotation field means unquoted, not free. Context: The Field Herbarium.

Euro. A euro price should name the country, seller and conditions of the offer. Context: Chañar.

Euro. Countries outside the euro area require their own currency and local quote.

eV

Electronvolt: the energy change of one elementary charge through one volt, exactly $1.602176634 \times 10^{-19}$ joule.

exeligmos

Three Saros cycles, approximately restoring eclipse time of day while the detailed geometry continues to evolve. Context: Moons reader.

exp

Exponential function with base e; exp(x) = e raised to x. Context: Measure reader.

Extrapolation

Estimating beyond reference points, where the fitted relationship may no longer apply. Context: Laboratory reader.

F

Fresh input rate in the synthetic recycle calculation. Context: Process reader.

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EU European Union · EUR Euro · × multiplied by · = equals

Facelet

One coloured square surface. There are 54 on the ordinary 3 × 3 cube. Context: Rubik and the Architecture of a Move.

Factorial, !

n! is the product of the positive integers from 1 through n. 8! = 40,320. Context: Rubik and the Architecture of a Move.

FAO

Food and Agriculture Organization of the United Nations. Context: Ground reader.

FDA

Food and Drug Administration, the United States regulatory agency named in the dated source. Context: Laboratory reader.

United States Food and Drug Administration. Context: Dandelion: an archive at ground level.

Fe

Chemical symbol for iron. Steel is an iron-based alloy, not a separate chemical element. Context: Materials reader.

FIJI

Fiji Is Just ImageJ, a distribution of the ImageJ image-analysis software. Context: Measure reader.

Final biomass

The total mass of living stock at the stated time. A planning estimate can multiply number stocked by expected survival fraction and mean final mass; oxygen and water capacity remain separate checks.

Fish refuge

A deeper connected part of a field or pond system where fish retain water when the shallow crop field is lowered. Its capacity and connections require a site design. See A103-REFUGE.

Floret

One small flower within a compound flower head. Context: Dandelion: an archive at ground level.

flowkit

Name of a flow-cytometry analysis toolkit. Context: Evidence reader.

Fluorescence

Light emitted after a material absorbs radiation, usually at a longer wavelength. It is distinct from radioactive decay.

Freeboard

The vertical distance between the stated liquid level and the top boundary of a vessel.

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× multiplied by · = equals · **FAO** Food and Agriculture Organization of the United Nations · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source

g

Gram, one thousandth of a kilogram, in a material quantity. In the atlas equation g = GM/R², the symbol instead means gravitational acceleration; the displayed unit is m/s². Context: Moons reader.

Gram, one thousandth of a kilogram; a unit of mass in this reader. Context: Process reader.

Gram when used as a mass unit; gravity has a separate meaning when used as a variable. Context: Evidence reader.

Gram, a unit of mass. Context: Materials reader.

Gram, one thousandth of a kilogram.

g/m²

Grams per square metre, a measure of paper or card mass per unit area, not thickness. Context: Rubik and the Architecture of a Move.

gasometer

An apparatus for collecting or measuring gas volume; the reading needs stated conditions. Context: Process reader.

Gathering

Material collected by an observer or team at a particular place and time, retained with its collecting identity. Context: The Field Herbarium.

GBIF

Global Biodiversity Information Facility, an international network publishing biodiversity occurrence data. Context: The Field Herbarium.

Global Biodiversity Information Facility, a network and platform for biodiversity records. Context: Chañar.

GCTA

Genome-wide Complex Trait Analysis; software for genetic-data analysis. Context: Evidence reader.

Gematria

A letter-number system whose alphabet, spelling and value rules must be specified before calculating.

Genet

A genetic individual. Several connected or clonally derived stems need not represent separate genets. Context: Chañar.

Geodesic lattice

A triangulated framework related to a curved surface; exact geometry and frequency must be specified. Context: Domes, pods and pavilions: from a counted model to a building brief.

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GM Gravitational parameter: gravitational constant G multiplied by body mass M · **m/s²** metres per second squared, acceleration · **=** equals · **m²** square metre, an area unit · **GBIF** Global Biodiversity Information Facility · **GCTA** Genome-wide Complex Trait Analysis

GEOIDE-Ar16

The Argentine geoid model identified by IGN for the stated transformation between POSGAR07 ellipsoidal heights and SRVN16 heights. Context: Ground reader.

GEPIN

Gestión de Permisos de Investigación, the research-permit system described by Argentina's APN. Context: The Field Herbarium.

GH

Gray Herbarium, Harvard University. A collection code, not a locality. Context: The Field Herbarium.

GHz

Gigahertz; one billion cycles per second. Context: Evidence reader.

GJ

Gigajoule; one billion joules of energy. Context: Evidence reader.

GM

Gravitational parameter: the gravitational constant multiplied by the body's mass. The atlas uses JPL values in cubic kilometres per square second. Context: Moons reader.

GND

Ground, the circuit reference node. It is not automatically a protective earth connection. Context: Ground reader.

gnomAD

Genome Aggregation Database. Context: Evidence reader.

GNSS

Global Navigation Satellite System, the general term for satellite-positioning systems. Context: Ground reader.

GOET

Herbarium code for the Göttingen collection. Context: The Field Herbarium.

GPS

Global Positioning System, the United States satellite-navigation system; one part of the broader GNSS category. Context: Ground reader.

Gross mass

Container plus contents before subtracting tare. Context: Chañar.

Guardian working benchmark

A dated price observation whose animal age, training, health and sale terms must be matched to a proposed purchase.

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IGN Instituto Geográfico Nacional, Argentina's national geographic institute · **POSGAR07** Posiciones Geodésicas Argentinas 2007, the named Argentine geodetic reference frame · **SRVN16** Sistema de Referencia Vertical Nacional 2016 · **GEPIN** Gestión de Permisos de Investigación · **APN** Administración de Parques Nacionales · **JPL** Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA · **GND** Ground, the circuit reference node · **GPS** Global Positioning System

GUM

Guide to the expression of uncertainty in measurement. Context: Measure reader.

GW

Gigawatt; one billion watts. Context: Evidence reader.

H

Hydrogen, when used as an atom label or chemical symbol. Context: Process reader.

Chemical symbol for hydrogen when used in a chemical formula. Context: Materials reader.

H2O

Water: two hydrogen atoms and one oxygen atom. Context: Process reader.

ha

Hectare, an area of 10,000 square metres. This reader does not expand its small sample into a hectare yield. Context: Chañar.

Headspace

The unfilled space above the contents of a container, specified by the storage method. Context: Chokecherry: the branch, the calendar and the jar.

Herbarium

A collection of preserved plant specimens with records, or the institution housing it. A historical herbal is a book about plants. Context: The Field Herbarium.

Glossary: materials, measures and living systems (continued)

A collection of preserved plant specimens and associated records. Context: Working drawings and records.

Hg

Chemical symbol for mercury, atomic number 80. The symbol is not a handling instruction. Context: Materials reader.

Historical plate

An identified image from a historical publication or collection. Its date, maker and source record distinguish documentary evidence from a modern teaching drawing.

HMC5883L

Honeywell model identifier for a three-axis digital magnetic sensor. A model code is not a general acronym. Context: Ground reader.

HNO3

Nitric acid: one hydrogen, one nitrogen and three oxygen atoms. Context: Process reader.

Hold point

A stage that must be checked before dependent work proceeds. Context: Domes, pods and pavilions: from a counted model to a building brief.

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H2O Water

Homeostasis

Regulation of internal conditions within a functioning biological system. Context: Laboratory reader.

Homer

HOMER, Hypergeometric Optimization of Motif EnRichment; confirm the version in the source environment record. Context: Evidence reader.

HRTEM

High-resolution transmission electron microscopy. Image interpretation also depends on imaging conditions and the specimen. Context: Measure reader.

HTM

Half-turn metric: an outer-face quarter-turn or half-turn counts as one move. Context: Rubik and the Architecture of a Move.

HTML

HyperText Markup Language, the format of the browser reader. Context: Moons reader.

Hypertext Markup Language, the document format used by the offline browser reader. Context: Measure reader.

Hypertext Markup Language, the format used for the offline browser reader. Context: Laboratory reader.

HyperText Markup Language, the browser reader format.

HVAC

Heating, ventilation and air conditioning. Context: Shelter opening lessons.

Hysteresis

Dependence on previous state; switch-on and switch-off thresholds can differ.

Hz

Hertz, cycles per second. Context: Moons reader.

Hertz, one cycle per second. Context: Measure reader.

Hertz: one cycle per second. State the quantity that oscillates and the measurement method.

I

Total internal inlet rate, including recycle, in the synthetic recycle calculation. Context: Process reader.

The current symbol in the equations here, expressed in amperes. I × R means a product. Context: Ohm at the Workbench.

I2C

Inter-Integrated Circuit, a serial communication bus using data and clock lines. Also written I²C. Context: Ground reader.

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HRTEM High-resolution transmission electron microscopy · **HTM** Half-turn metric · **HTML** HyperText Markup Language, the browser reader format · **HVAC** Heating, ventilation and air conditioning · **×** multiplied by · **I2C** Inter-Integrated Circuit, a serial communication bus using data and clock lines

Icosahedron

A polyhedron with 20 triangular faces, 30 edges and 12 vertices in its regular form. Context: Domes, pods and pavilions: from a counted model to a building brief.

ID

Identifier: a stable code for an object, observation, drawing or record. Context: Measure reader.

Inside diameter, measured across the bore.

Identity

The transformation that leaves every tracked position unchanged. Context: Rubik and the Architecture of a Move.

IgG

Immunoglobulin G, a class of antibody. The four-chain drawing is a simplified teaching representation. Context: Laboratory reader.

IGN

Instituto Geográfico Nacional, Argentina's national geographic institute. Context: Moons reader.

Impluvium

The shallow receiving basin below the opening. Context: Shelter opening lessons.

INFOR

Instituto Forestal, the Chilean forestry research institute responsible for the cited chañar manual. Context: Chañar.

INM

Instituto Nacional de Metrología, Colombia's national metrology institute in the source cited here. Context: Ohm at the Workbench.

INT

Interrupt, an electronic signal used to request processor attention; exact function depends on the part. Context: Ground reader.

INTA

Instituto Nacional de Tecnología Agropecuaria, Argentina's agricultural research and extension institute. Context: The Field Herbarium.

Instituto Nacional de Tecnología Agropecuaria, Argentina's National Agricultural Technology Institute. Context: Chokecherry: the branch, the calendar and the jar.

Interpolation

Estimating between reference points within the calibrated range. Context: Laboratory reader.

InterPro

A protein-family and functional-domain classification resource. Context: Evidence reader.

ON THIS PAGE

IGN Instituto Geográfico Nacional, Argentina's national geographic institute · **INFOR** Instituto Forestal · **INM** Instituto Nacional de Metrología, Colombia · **INT** Interrupt, an electronic signal used to request processor attention; exact function depends on the part · **INTA** Instituto Nacional de Tecnología Agropecuaria

INTI

Instituto Nacional de Tecnología Industrial, Argentina's industrial-technology institute. Context: Moons reader.

Instituto Nacional de Tecnología Industrial, Argentina's national industrial technology institute. Context: Measure reader.

Instituto Nacional de Tecnología Industrial, Argentina's National Institute of Industrial Technology. Context: Evidence reader.

Invariant

A property preserved by the permitted operations. Context: Rubik and the Architecture of a Move.

Inverse

An operation that undoes another. Reverse a sequence's order and invert each move. Context: Rubik and the Architecture of a Move.

ISO

International Organization for Standardization; ISO is its internationally used short name.

Isolation point

A control intended to stop a particular supply or part of a system. Context: Shelter opening lessons.

Isomer

One of distinct compounds with the same molecular formula; this chapter compares different carbon connectivity. Context: Materials reader.

Isometric view

A pictorial view showing three principal directions together so the assembly can be recognised. Context: Working drawings and records.

ITAR

International Traffic in Arms Regulations. The stamp is reproduced as part of the supplied image, not authenticated as an official designation. Context: Evidence reader.

IUCN

International Union for Conservation of Nature. Context: Evidence reader.

IUPAC

International Union of Pure and Applied Chemistry. Context: Measure reader.

j

The imaginary unit in the electrical impedance expression; $j^2 = -1$. Context: Measure reader.

JASPAR

Name of a database of transcription-factor binding profiles. Context: Evidence reader.

ON THIS PAGE

INTI Instituto Nacional de Tecnología Industrial · **ISO** International Organization for Standardization; ISO is its internationally used short name · **IUPAC** International Union of Pure and Applied Chemistry · **=** equals

JCGM

Joint Committee for Guides in Metrology. Context: Measure reader.

JPL

Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA. Context: Moons reader.

K

Thousand, 10^3, in the English price-poster suffix; in a temperature equation K instead denotes kelvin. Context: Process reader.

Kelvin; the SI unit of thermodynamic temperature. Context: Evidence reader.

k

Rate parameter in the declared illustrative exponential model; here its unit is inverse minutes. Context: Process reader.

Coverage factor in the uncertainty example. k = 2 is not automatically proof of an exact 95 percent interval. Context: Measure reader.

Ka

Microwave band name; the supplied sheet states 26.5-40 GHz. It is a band designation, not a word acronym. Context: Evidence reader.

kDa

Kilodalton, one thousand daltons; a unit of molecular mass. Context: Moons reader.

Kilodalton, one thousand daltons of molecular mass. An apparent gel-derived value is method-dependent. Context: Laboratory reader.

Kelvin connection

A four-wire arrangement with separate current and voltage-sensing connections at defined points. Context: Ohm at the Workbench.

kerf

Material width removed by a cut. State it separately from finished part dimensions and edge trimming. Context: Process reader.

Kerf

Material removed by a saw or cutting process; include it when nesting cuts. Context: Materials reader.

Material removed by the width of a cut. Context: Domes, pods and pavilions: from a counted model to a building brief.

The material width removed by a cutting tool. Context: Working drawings and records.

The width of material removed by a cutting tool. Include the actual kerf in a stock-cutting plan.

The width removed by a saw cut. Allow for it in a cut list.

ON THIS PAGE

JCGM Joint Committee for Guides in Metrology · **JPL** Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA · **NASA** National Aeronautics and Space Administration · **SI** Système international d'unités, the International System of Units · **=** equals · **kDa** Kilodalton, a molecular-mass unit

The width of material removed by a cut.

kg

Kilogram, the SI base unit of mass. Context: Moons reader.

Kilogram, the SI unit of mass. Context: Evidence reader.

Kilogram, the unit of mass.

Kilogram, equal to 1,000 grams. g means gram. Context: Chañar.

km

Kilometre, one thousand metres. Context: Moons reader.

kW

Kilowatt; one thousand watts. Context: Evidence reader.

kΩ

Kiloohm, one thousand ohms. Context: Moons reader.

Kilohm, one thousand ohms. Context: Measure reader.

Kiloohm, 1,000 ohms. The prefix k means kilo. Context: Ohm at the Workbench.

L

Litre, one thousand cubic centimetres. Context: Moons reader.

Lamina

The blade of a leaf. Context: Working drawings and records.

Leaflet

One segment of a compound leaf; it is not an independently attached whole leaf. Context: Chañar.

LED

Light-emitting diode; use a low-power battery lamp for the shadow model. Context: Moons reader.

LEIE

Laboratorio de Extensión de la Escuela de Ingeniería Eléctrica, Universidad Nacional de Rosario. Context: Measure reader.

Li-ion

Lithium-ion rechargeable battery chemistry. Context: Ground reader.

libration

Changes in the apparent orientation of the Moon that reveal different areas near its edge over time. Context: Moons reader.

libSBML

Software library supporting SBML, Systems Biology Markup Language. Context: Evidence reader.

ON THIS PAGE
SI Système international d’unités, the International System of Units · **kΩ** kilohm, 1,000 ohms · **LED** Light-emitting diode

Livestock guardian

A dog managed to live in association with livestock and help protect them; distinct from a herding dog. Context: Edition102 Caribbean and estate animals.

Livestock guardian dog

A dog raised and managed to live with and protect stock; distinct from a herding dog and a household alert dog.

LLM

Large language model; a computational model used for language-based tasks. Context: Evidence reader.

ln

Natural logarithm, with base e. Context: Measure reader.

Natural logarithm. Context: Evidence reader.

LPG

Liquefied petroleum gas; a product category often involving propane and butane mixtures. Context: Materials reader.

Lunation

One complete lunar phase cycle, usually measured from one new Moon to the next. Its average is approximately 29.53 days.

luopan

A Chinese geomantic compass whose directional indicator and inscribed rings belong to a particular historical and interpretive system. Context: Ground reader.

m

Metre, the SI base unit of length. Context: Moons reader.

Metre, the SI unit of length. Context: Evidence reader.

Metre, the unit of length.

M

Million, 10^6, in the price poster. On the teaching counters M is a separate label for one mass token representing 5 g. Context: Process reader.

m/s

Metres per second, a unit of speed. Context: Dandelion: an archive at ground level.

M10

Metric screw thread with nominal 10 mm major diameter.

M12

Metric screw thread with nominal 12 mm major diameter.

ON THIS PAGE

LPG Liquefied petroleum gas · **SI** Système international d’unités, the International System of Units · **g** gram, 0.001 kilogram · **mm** millimetre, 0.001 metre

M14

Metric screw thread with nominal 14 mm major diameter.

M4

Metric screw thread with a nominal diameter of 4 mm. Match the nut and actual pitch; the designation does not specify material strength. Context: Moons reader.

Metric screw thread with nominal major diameter 4 mm; the specified pitch and fastener properties still matter. Context: Evidence reader.

M5

Metric screw thread with nominal 5 mm diameter. Match the actual pitch, nuts and assembly stack. Context: Process reader.

M6

Metric screw thread with nominal 6 mm major diameter; pitch and fit must also be specified.

An ISO metric thread designation with nominal 6 mm major diameter. Pitch and grade still need specification. Context: Working drawings and records.

M8

Metric screw thread with nominal 8 mm major diameter.

mA

Milliampere, one thousandth of an ampere; a unit of electric current. Context: Measure reader.

Milliampere, 0.001 ampere. The lowercase prefix m means milli. Context: Ohm at the Workbench.

macs2

Model-based Analysis of ChIP-Seq, version 2. ChIP-Seq means chromatin immunoprecipitation followed by sequencing. Context: Evidence reader.

mAh

Milliampere-hour, a charge-capacity unit, not a direct statement of stored energy without a voltage. Context: Ground reader.

MASER

Microwave amplification by stimulated emission of radiation. Context: Evidence reader.

Mass balance

An account of material entering, leaving and remaining within a defined boundary. Context: Chañar.

measurand

The quantity intended to be measured, defined with enough conditions to avoid changing the question between trials. Context: Process reader.

Measurand

The quantity intended to be measured, including the conditions needed to define it. Context: Ohm at the Workbench.

ON THIS PAGE
mm millimetre, 0.001 metre · **ISO** International Organization for Standardization; ISO is its internationally used short name

Median

The middle value of an ordered series; for an even count, the mean of the two middle values. Context: Dandelion: an archive at ground level.

meniscus

The curved free surface at the liquid edge. Use the same reading convention at both hose ends. Context: Ground reader.

metastable

A state that can persist for a time before changing to a lower-energy state; here used for a specified nuclear state. Context: Process reader.

Mews

Housing used for falconry birds, with facilities matched to the bird and applicable requirements. Context: Edition102 Caribbean and estate animals.

MHz

Megahertz: one million cycles per second.

miRBase

MicroRNA sequence and annotation database. Context: Evidence reader.

mL

Millilitre, one thousandth of a litre. Context: Moons reader.

mm

Millimetre, one thousandth of a metre. Context: Moons reader.

Millimetre; one thousandth of a metre. Context: Evidence reader.

Millimetre, one thousandth of a metre. cm means centimetre and m means metre. Context: Chañar.

Millimetre. Context: Domes, pods and pavilions: from a counted model to a building brief.

mm^2

Square millimetre, an area unit. Context: Ground reader.

Square millimetre, a unit of area. Context: Measure reader.

mm^3

Cubic millimetre, a unit of volume. Context: Measure reader.

MN

Meganewton; one million newtons. Context: Evidence reader.

Mn

Chemical symbol for manganese. Context: Materials reader.

MO

Herbarium code for the Missouri Botanical Garden. Context: The Field Herbarium.

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mm^2 square millimetre

Module (gear)

Pitch diameter divided by the number of teeth. The card teaching templates use a module of 2 millimetres.

Modulo

Remainder arithmetic. A twist sum of 0 modulo 3 is divisible by 3. Context: Rubik and the Architecture of a Move.

Mohs scale

An ordinal comparative scratch-hardness scale, not a linear ratio scale. Context: Materials reader.

mol

Mole, the SI unit of amount of substance, containing exactly 6.02214076 × 10^{23} specified elementary entities. Context: Process reader.

Monoclonal

Derived from one clone; the word does not by itself establish an unknown band's identity. Context: Laboratory reader.

MPD

Mouse Phenome Database. Context: Evidence reader.

MS

Manuscript, in the archival shelfmark Keynes MS 31. Context: Process reader.

Materia seca, Spanish for dry matter.

MUSCLE

Multiple sequence comparison by log-expectation, a sequence-alignment program. Context: Evidence reader.

mV

Millivolt, 0.001 volt. Context: Ohm at the Workbench.

MVZ

Museum of Vertebrate Zoology at the University of California, Berkeley. Context: Chañar.

MW

Megawatt; one million watts. Context: Evidence reader.

MWh

Megawatt-hour; 3.6 billion joules of energy. Context: Evidence reader.

MWO

Multi-wave oscillator: the name applied to Lakhovsky's apparatus; the name does not establish therapeutic effectiveness.

m²

Square metre, a unit of area. Context: Domes, pods and pavilions: from a counted model to a building brief.

ON THIS PAGE

SI Système international d'unités, the International System of Units · × multiplied by · **MWO** Multi-wave oscillator · **m²** square metre, an area unit

Square metre, a unit of area. Multiply two lengths expressed in metres to obtain it.

m^3/h

Cubic metres per hour, a unit of volume flow. Context: Domes, pods and pavilions: from a counted model to a building brief.

MΩ

Megohm, one million ohms. Context: Measure reader.

Megaohm, 1,000,000 ohms. The uppercase prefix M means mega. Context: Ohm at the Workbench.

N

Newton, the SI unit of force. Weight in newtons equals mass in kilograms times gravitational acceleration in metres per square second. Context: Moons reader.

Nitrogen, when used as the atom label or chemical symbol in this reader. Context: Process reader.

Newton; the SI unit of force. Context: Evidence reader.

Newton, the unit of force.

NA

Numerical aperture, n sin θ: refractive index multiplied by the sine of the collection half-angle. Context: Measure reader.

NAEPP

The supplied sheet expands this as non-equilibrium atmospheric-pressure plasma. Context: Evidence reader.

NASA

National Aeronautics and Space Administration, United States. Context: Moons reader.

NAV0442

Royal Museums Greenwich collection identifier for the cited Wang Yangxi geomantic compass, circa 1850. It is an object identifier, not an instrument rating. Context: Ground reader.

NBS

National Bureau of Standards, the former name of the US institution now called NIST.

NbTi

Niobium-titanium alloy, written with chemical element symbols. Context: Evidence reader.

NCCIH

National Center for Complementary and Integrative Health, United States. Context: Dandelion: an archive at ground level.

National Center for Complementary and Integrative Health, a United States research centre.

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m^3 cubic metre, a volume unit · **SI** Système international d'unités, the International System of Units · **n** refractive index of the optical medium · **sin** sine, the trigonometric function of an angle · **θ** theta, the light-collection half-angle · **NASA** National Aeronautics and Space Administration · **NBS** National Bureau of Standards · **US** United States · **NIST** National Institute of Standards and Technology · **NCCIH** National Center for Complementary and Integrative Health

Net mass

Gross mass minus the appropriate empty-container mass. Context: Chañar.

NH3

Ammonia: one nitrogen atom and three hydrogen atoms per molecule. Context: Process reader.

NHS

National Health Service, the United Kingdom public health service.

NIDCD

United States National Institute on Deafness and Other Communication Disorders. Context: Image study companion.

NIMH

United States National Institute of Mental Health. Context: Image study companion.

NIST

National Institute of Standards and Technology, United States. Context: Moons reader.

National Institute of Standards and Technology, the United States measurement institute.

nm

Nanometre, one billionth of a metre. Context: Moons reader.

Nanometre: one billionth of a metre.

NO

Nitrogen monoxide, also called nitric oxide: one nitrogen and one oxygen atom. Context: Process reader.

NO2

Nitrogen dioxide: one nitrogen and two oxygen atoms. Context: Process reader.

NOAA

National Oceanic and Atmospheric Administration, United States. Context: Moons reader.

United States National Oceanic and Atmospheric Administration. Context: Working drawings and records.

Node

An identified electrical connection shared by points treated as the same potential in a circuit model. Context: Ohm at the Workbench.

NOx

Nitrogen oxides, a collective label whose exact included species must be stated in a technical record. Context: Process reader.

NRCS

Natural Resources Conservation Service, part of USDA. Context: Chokecherry: the branch, the calendar and the jar.

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NIST National Institute of Standards and Technology · **nm** nanometre, one billionth of a metre · **NOAA** National Oceanic and Atmospheric Administration · **NRCS** Natural Resources Conservation Service · **USDA** United States Department of Agriculture

N·m

Newton metre, the unit of torque or turning moment.

O

Oxygen, when used as an atom label or chemical symbol. Context: Process reader.

Chemical symbol for oxygen when used in a chemical formula. Context: Materials reader.

O2

Molecular oxygen: two oxygen atoms per molecule. Context: Process reader.

OAM

Orbital angular momentum; the source sheet refers to an electromagnetic mode. Context: Evidence reader.

occultation

One body hides a background source from the observer. Its timing can constrain a projected outline. Context: Moons reader.

Occurrence identifier

An identifier for an occurrence record. Keep it distinct from a physical sheet barcode and collector number. Context: The Field Herbarium.

OD

Outside diameter, measured across the outer surface.

Ohmic

Describes a linear voltage-current relationship with constant ratio over stated conditions. Context: Ohm at the Workbench.

OLED

Organic light-emitting diode, the display technology named on the supplied compass poster. Context: Ground reader.

Oligo

Short form of oligonucleotide, a short chain of nucleotides. Context: Evidence reader.

OP

Operator identifier in the date and time panel of supplied sheet 088; elsewhere abbreviations must be read in their own context. Context: Ground reader.

Open-water area

The water surface remaining after dry islands and other excluded areas are deducted. Use the appropriate surface area in an evaporation calculation.

OpenTarget Genetics

Label printed on the supplied image; consult the linked environment record for the exact Open Targets resource and version. Context: Evidence reader.

ON THIS PAGE
OD Outside diameter, measured across the outer surface · OLED Organic light-emitting diode, the display technology named on the supplied compass poster

OSB

Oriented strand board, made from wood strands bonded into a panel. Context: Working drawings and records.

p

Purge fraction of the unconverted remainder in the synthetic recycle calculation. Context: Process reader.

Pa

Pascal; the SI unit of pressure. Context: Evidence reader.

Pascal, the SI unit of pressure, equal to one newton per square metre.

Paddy rice

Rice grain before removal of its husk. Paddy harvest mass is not the same as milled edible rice mass.

PAGE

Polyacrylamide gel electrophoresis. Context: Laboratory reader.

Pappus

The modified calyx, here a bristled structure associated with dispersal. Context: Dandelion: an archive at ground level.

Parallax

An apparent shift of a mark when it is viewed from a different direction. Align the eye with the reading.

Pareidolia

Recognising a familiar form in a pattern; recognition alone does not establish its origin. Context: Image study companion.

Parity

Whether a permutation needs an even or odd number of pair exchanges. This classification is independent of the chosen decomposition. Context: Rubik and the Architecture of a Move.

PCB

Printed circuit board, the board carrying conductor tracks and electronic components. Context: Ground reader.

PDB

Protein Data Bank; an archive of three-dimensional structural data. Context: Evidence reader.

PDF

Portable Document Format, used for the fixed-page readers. Context: Moons reader.

Portable Document Format, used for readers and actual-size print templates. Context: Measure reader.

Portable Document Format, used for fixed-layout readers and print sheets. Context: Laboratory reader.

Portable Document Format, the fixed-layout reading file.

ON THIS PAGE
OSB Oriented strand board · **SI** Système international d’unités, the International System of Units · **PCB** Printed circuit board, the board carrying conductor tracks and electronic components · **PDB** Protein Data Bank · **PDF** Portable Document Format

PEEK

Polyether ether ketone, an engineering polymer. Context: Evidence reader.

Peristyle

A court or space surrounded by a colonnade. Context: Shelter opening lessons.

Permutation

A rearrangement of labelled objects. Context: Rubik and the Architecture of a Move.

PET

Polyethylene terephthalate, a plastic used here as a room-temperature transparent overlay. Context: Moons reader.

Polyethylene terephthalate, a polymer; the purchased sheet still needs its thickness and grade. Context: Materials reader.

Petiole

The stalk joining a leaf blade to the stem. Context: Working drawings and records.

pH

A logarithmic measure related to hydrogen-ion activity; not a general measure of whether any liquid is harmless. Context: Moons reader.

Phenology

The timing of recurring biological events, such as flowering and fruit development, in relation to their conditions. Context: Chañar.

The timing of recurring biological events. Context: Chokecherry: the branch, the calendar and the jar.

Phenophase

A defined observable stage or condition, such as the presence of ripe fruit. Context: Chañar.

Photogram

An image made by placing an object against light-sensitive material, without a camera image of that object. Context: The Field Herbarium.

Planning allowance

A provisional budget amount chosen for planning. It is not a checked seller quotation.

PLINK

Name of a genetics analysis toolkit; no invented expansion is supplied. Context: Evidence reader.

Plywood

A board built from bonded wood veneers. Board thickness and stiffness must suit the press being tested. Context: The Field Herbarium.

pm

Picometre: one trillionth of a metre.

ON THIS PAGE
PET Polyethylene terephthalate, a plastic used here as a room-temperature transparent overlay · pH A logarithmic measure of hydrogen-ion activity

Polarity

Here, the uneven charge distribution and molecular geometry associated with an electric dipole. Context: Materials reader.

Porosity

The fraction of a structure occupied by openings, stated with the measurement method. Context: Dandelion: an archive at ground level.

POSGAR

Posiciones Geodésicas Argentinas, Argentina's geodetic reference-frame designation. Context: Moons reader.

Posiciones Geodésicas Argentinas, the Argentine geodetic reference framework.

POSGAR07

Posiciones Geodésicas Argentinas 2007, the named Argentine geodetic reference frame. State the observation epoch and any actual connection to control. Context: Ground reader.

PP

Polypropylene, the plastic specified for the room-temperature open-water containers. Context: Process reader.

ppm

Parts per million, used here for relative unit-scale differences. Context: Ground reader.

Pred

Abbreviation for predicted or prediction in the source tool map. Context: Evidence reader.

Prime, apostrophe

The mark after a face letter indicating its counterclockwise quarter-turn. The supplied poster instead uses i. Context: Rubik and the Architecture of a Move.

primer

A short nucleic-acid sequence used to initiate copying in the appropriate procedure. Context: Evidence reader.

Provenance

The documented source and history of an image, object or record. Context: Laboratory reader.

The recorded origin and history of an object or material. Context: Materials reader.

Glossary: materials, measures and living systems (continued)

The documented source and history of an object or image, kept separate from a later interpretation.

The documented origin and history of material, an image or a record. Context: The Field Herbarium.

The documented origin and ownership or transfer history of an object, specimen or animal. Context: Edition102 Caribbean and estate animals.

ON THIS PAGE
POSGAR Posiciones Geodésicas Argentinas · POSGAR07 Posiciones Geodésicas Argentinas 2007, the named Argentine geodetic reference frame · PP Polypropylene, the plastic specified for the room-temperature open-water containers

Pseudostem

An apparent stem formed here by overlapping leaf sheaths.

PVA

Polyvinyl acetate, the polymer named in common white craft and wood adhesives. Context: Laboratory reader.

Polyvinyl acetate, the polymer named in common craft and wood adhesives. Read the actual product specification. Context: Materials reader.

Polyvinyl acetate, an adhesive type used for suitable paper and card joints. Context: Working drawings and records.

Polyvinyl acetate, an adhesive family. The product label determines its suitable use.

px

Pixel, one discrete image sample. A pixel count becomes a length only through a stated calibration. Context: Measure reader.

Q

Quality factor: stored energy relative to energy dissipated per oscillation cycle, with its convention stated. Context: Evidence reader.

QA

Quality assurance. Context: Evidence reader.

QTM

Quarter-turn metric: a 90-degree face turn counts as one and a half-turn as two. Context: Rubik and the Architecture of a Move.

Quadrat

A defined area used for observation and counting. Context: Dandelion: an archive at ground level.

R

Resistance symbol in the equations here, expressed in ohms. Context: Ohm at the Workbench.

Raceme

An elongated flower cluster with individual flowers on short stalks along its axis. Context: Chokecherry: the branch, the calendar and the jar.

Ramet

A unit of clonal growth that may appear as a separate stem or plant while belonging to a larger genetic individual. Context: Chañar.

RC

Resistor-capacitor; a circuit containing electrical resistance and capacitance. Context: Moons reader.

Resistor-capacitor. The ideal single time constant is resistance multiplied by capacitance. Context: Measure reader.

ON THIS PAGE
PVA Polyvinyl acetate, the polymer in the specified white card or wood adhesive · **QTM** Quarter-turn metric

RCC

Reinforced cement concrete, the abbreviation on the supplied pavilion sheet. Context: Working drawings and records.

RCSB

Research Collaboratory for Structural Bioinformatics. Context: Evidence reader.

RDCTD.PRO

The branding printed on supplied sheet 088. No verified acronym expansion or permission grant is established by that printed mark. Context: Ground reader.

Re

Reynolds number; a dimensionless ratio based on a stated velocity, length, density and viscosity. Context: Evidence reader.

REBCO

Rare-earth barium copper oxide; a family of superconducting materials. The illustration does not establish a working propulsion hull. Context: Evidence reader.

Recovery, desalination

Product-water flow divided by feed-water flow, using consistent units and conditions.

RegulomeDB

A resource for annotations relevant to regulatory variation. Context: Evidence reader.

Resolution

The smallest indicated change that an instrument can distinguish under the relevant conditions. Context: Ohm at the Workbench.

The smallest change an instrument displays or distinguishes. It does not alone establish accuracy. Context: Chañar.

Rf

Relative migration, here band travel divided by the travel of the reference front in a printed electrophoresis example. Context: Moons reader.

Relative migration: band distance divided by reference-front distance, both from the same origin. Context: Laboratory reader.

RF

Radio frequency. Context: Evidence reader.

Radio frequency: electromagnetic oscillations in the radio-frequency range. Frequency alone does not specify exposure or dose.

RHS

Royal Horticultural Society. Its practical guide is one source for the pressing discussion. Context: The Field Herbarium.

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RCC Reinforced cement concrete · **RF** Radio frequency · **RHS** Royal Horticultural Society

Rice-fish rotation

Production that alternates rice and fish phases. It is distinct from raising fish simultaneously among standing rice. See A103-PACU.

Riser

A vertical service route connecting levels. Context: Shelter opening lessons.

Rm

Input resistance of the voltmeter, which loads the measured circuit. Context: Measure reader.

RMG

Royal Museums Greenwich, the collection holding the cited geomantic compass. Context: Ground reader.

RMS

Root mean square, a way to state the effective magnitude of an alternating signal. Context: Moons reader.

RNA

Ribonucleic acid. Context: Evidence reader.

Rosette

Leaves arranged around a short central region, commonly near ground level. Context: Dandelion: an archive at ground level.

Rp

Parallel resistance in the illustrated impedance model. Context: Measure reader.

rpm

Revolutions per minute, a rotation rate.

Rs

Series resistance in the illustrated impedance model. Context: Measure reader.

Runoff factor

The assumed fraction of rainfall on a stated area that reaches the collection point. Context: Shelter opening lessons.

RXD

Receive data, the serial input label in the supplied illustration. Context: Ground reader.

s

Second, the SI unit of time in the circuit calculations. Context: Measure reader.

SAC

Servicio Argentino de Calibración y Medición, an Argentine calibration and measurement service. Context: Measure reader.

ON THIS PAGE

RMG Royal Museums Greenwich, the collection holding the cited geomantic compass · **RMS** Root mean square, a measure of a varying signal’s effective magnitude · **RNA** Ribonucleic acid · **RXD** Receive data, the serial input label in the supplied illustration · **SI** Système international d’unités, the International System of Units · **SAC** Servicio Argentino de Calibración y Medición, an Argentine calibration and measurement service

SAED

Selected-area electron diffraction. Diffraction is collected from a selected specimen area; a pattern alone does not establish full composition. Context: Measure reader.

Saleable yield

The output that meets the defined product and sale conditions. It differs from all material recovered. Context: Chañar.

Sanitary stack

A vertical wastewater pipe; its venting arrangement must be identified separately. Context: Shelter opening lessons.

SAR

Saudi riyal, a currency distinct from USD. Context: Edition102 Caribbean and estate animals.

Saros

A near-repetition of eclipse geometry after 223 synodic months, approximately 18 years and 11 days plus about eight hours. It does not repeat an identical local eclipse. Context: Moons reader.

Saturation

A recorded signal has reached the detection or display limit, hiding larger differences. Context: Laboratory reader.

Scanpy

Name of a Python toolkit for single-cell analysis. Context: Evidence reader.

Scape

A leafless flowering stalk rising from the base. Context: Dandelion: an archive at ground level.

SCL

Serial clock line for the I2C bus. Context: Ground reader.

SDA

Serial data line for the I2C bus. Context: Ground reader.

SDS

Safety data sheet when describing purchase documents. In SDS-PAGE it instead means sodium dodecyl sulfate, a detergent. Read the context. Context: Moons reader.

Sodium dodecyl sulfate, an anionic detergent used in the illustrated separation method. Context: Laboratory reader.

Safety data sheet in this materials chapter. In the previous protein chapter, SDS means sodium dodecyl sulfate; context must be stated. Context: Materials reader.

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SAED Selected-area electron diffraction · **SAR** Saudi riyal · **USD** United States dollar · **SCL** Serial clock line for the I2C bus · **I2C** Inter-Integrated Circuit, a serial communication bus using data and clock lines · **SDS** Safety data sheet in purchasing; sodium dodecyl sulfate in protein separation · **SDS-PAGE** Sodium dodecyl sulfate polyacrylamide gel electrophoresis

SDS-PAGE

Sodium dodecyl sulfate polyacrylamide gel electrophoresis. A laboratory separation method, discussed here through printed data rather than a home operating procedure. Context: Moons reader.

Sodium dodecyl sulfate polyacrylamide gel electrophoresis: a denaturing protein-separation method. Context: Laboratory reader.

Seed atom

A term in the esoteric tradition discussed in the supplied diagram; it does not identify a chemical atom.

Seed lot

A specifically identified quantity of seed whose origin and handling records are kept together.

SEGEMAR

Servicio Geológico Minero Argentino, the Argentine geological and mining survey. Context: Materials reader.

SEM

Scanning electron microscopy: a focused electron beam scans a surface and detected signals form an image. Context: Moons reader.

Scanning electron microscopy, or a scanning electron microscope. A beam scans the surface and detected signals form the image. Context: Measure reader.

Setpoint

The desired reference value in a control problem. Context: Laboratory reader.

SI

Système international d'unités, the International System of Units. Context: Moons reader.

Système international d'unités, the International System of Units. In the SKF product name SI 10 C, SI is a catalogue code, not the units system.

International System of Units, the internationally agreed system used for the measurements in these chapters.

SIB

Sistema de Información de Biodiversidad, Argentina's National Parks biodiversity information system. Context: Dandelion: an archive at ground level.

sk-image

scikit-image, a Python image-processing library. Context: Evidence reader.

SKF

Svenska Kullagerfabriken, the Swedish bearing company; a manufacturer name in sheet 049.

Solar altitude

The angle of the Sun above the local horizon.

ON THIS PAGE
SDS-PAGE Sodium dodecyl sulfate polyacrylamide gel electrophoresis · **SEGEMAR** Servicio Geológico Minero Argentino · **SEM** Scanning electron microscopy, or a scanning electron microscope · **SI** Système international d'unités, the International System of Units · **SKF** Svenska Kullagerfabriken, the historical Swedish bearing-company name · **SIB** Sistema de Información de Biodiversidad

Solubility

The composition of a saturated solution at stated conditions, expressed with a defined basis. Context: Materials reader.

Solute

A constituent considered dissolved in a solvent in the stated description. Context: Materials reader.

Solvent

The dissolving medium in the stated description; the role depends on the system. Context: Materials reader.

SPA Complex

A project label printed on supplied sheets, not a verified structural standard. Context: Domes, pods and pavilions: from a counted model to a building brief.

SPDT

Single-pole, double-throw: one common switch terminal selects one of two other terminals. Context: Measure reader.

sqrt

Square root, the non-negative root in the stated geometric examples. Context: Evidence reader.

SRVN16

Sistema de Referencia Vertical Nacional 2016, Argentina's national vertical reference system. Context: Ground reader.

Stocking capacity

The animal demand that a particular forage and management system can support over a stated period; not established by area alone.

SVG

Scalable Vector Graphics, an editable drawing format that keeps lines sharp when enlarged. Context: Moons reader.

Scalable Vector Graphics, the vector image format used for the drawings. Context: Measure reader.

Scalable Vector Graphics, a format for diagrams that remain sharp when enlarged. Context: Laboratory reader.

Scalable Vector Graphics, an editable drawing that remains sharp when enlarged.

Glossary: materials, measures and living systems (continued)

Scalable Vector Graphics: an editable vector image format.

Scalable Vector Graphics, the editable vector format supplied for the diagrams. Context: Rubik and the Architecture of a Move.

Synodic month

The Moon's phase cycle relative to the Sun, distinct from its orbital period relative to the stars.

ON THIS PAGE

SPDT Single-pole, double-throw: one common switch terminal selects one of two other terminals · **SRVN16** Sistema de Referencia Vertical Nacional 2016 · **SVG** Scalable Vector Graphics

T

Trillion, 10^{12}, in the poster's English short-scale magnitude notation. Context: Process reader.

Tesla, the SI unit of magnetic flux density, in the magnetic-field equations here.

Take-off

A measured quantity account derived from coordinated drawings and specifications. Context: Working drawings and records.

Tare

The empty-container mass, or the operation of subtracting it from gross mass. Context: Chañar.

The empty container mass subtracted from a gross weighing. Context: Chokecherry: the branch, the calendar and the jar.

The mass of an empty container subtracted from the gross mass. Context: Dandelion: an archive at ground level.

The mass of the empty container excluded from net contents. Context: Working drawings and records.

Tc-99

Technetium-99, the ground-state nuclide named in the source audit. Context: Process reader.

Tc-99m

Technetium-99 in a metastable nuclear state; the small m is part of the nuclear-state designation, not the metre unit. Context: Process reader.

TDWG

Biodiversity Information Standards, the organisation maintaining Darwin Core. The abbreviation comes from its former name, Taxonomic Databases Working Group. Context: The Field Herbarium.

TEM

Transmission electron microscopy: electrons pass through a sufficiently thin specimen to form an image. Context: Moons reader.

Transmission electron microscopy, or a transmission electron microscope. Electrons pass through a sufficiently thin specimen. Context: Measure reader.

Terminal velocity

A steady falling speed reached when the forces balance under specified conditions. Context: Dandelion: an archive at ground level.

Tetrastyle

Having four columns or supports in the arrangement described. Context: Shelter opening lessons.

Thermal bridge

A local path of greater heat flow through an enclosure. Context: Domes, pods and pavilions: from a counted model to a building brief.

ON THIS PAGE

SI Système international d'unités, the International System of Units · **m** metre, a length unit · **TDWG** Biodiversity Information Standards, historically the Taxonomic Databases Working Group · **TEM** Transmission electron microscopy, or a transmission electron microscope

Thermal mass

Material that stores sensible heat as its temperature changes.

Tolerance

A permitted variation in a specified component property. It is distinct from measurement uncertainty. Context: Ohm at the Workbench.

TP4056

Charger integrated-circuit model identifier. A charger label alone does not prove a complete protected battery system. Context: Ground reader.

Traceability

A property of a measurement result related to a reference through a documented calibration chain with uncertainty contributions. Context: Ohm at the Workbench.

trilateration

Locating a point from measured distances. In the two-circle example, a side observation selects the mirror solution. Context: Ground reader.

TXD

Transmit data, the serial output label in the supplied illustration. Context: Ground reader.

u

Standard uncertainty, stated with the quantity and assumptions to which it belongs. Context: Process reader.

U

Expanded uncertainty, obtained from the stated standard uncertainty and coverage factor. Context: Process reader.

UAF

University of Alaska Fairbanks. Context: Chokecherry: the branch, the calendar and the jar.

UCE

Universal Cell Embeddings, the cell-representation model label used in the Biomni environment. Context: Evidence reader.

UCSC

University of California, Santa Cruz; here a genome-data resource label. Context: Evidence reader.

Uncertainty

A description of the dispersion of values attributable to a measurand based on the information used. A worst-case bound is not automatically a statistical uncertainty interval. Context: Ohm at the Workbench.

The stated limits of a measurement or location interpretation, including assumptions and missing information. Context: The Field Herbarium.

The remaining doubt or range relevant to a result. State what was measured and what assumptions remain. Context: Chañar.

ON THIS PAGE

TXD Transmit data, the serial output label in the supplied illustration · **UAF** University of Alaska Fairbanks · **UCSC** University of California, Santa Cruz

A quantified expression of the range associated with a measurement result, under stated assumptions.

UNLP

Universidad Nacional de La Plata, Argentina. Context: Measure reader.

Universidad Nacional de La Plata. Context: Dandelion: an archive at ground level.

US

United States of America. Context: Moons reader.

United States. Context: Measure reader.

United States of America in the regional comparison. Context: Ohm at the Workbench.

In the specimen citation US 3336871, the herbarium code for the United States National Herbarium at the Smithsonian. In ordinary regional prose, United States is written out. Context: The Field Herbarium.

US / USD

United States of America / United States dollar. Context: Rubik and the Architecture of a Move.

USA-NPN

USA National Phenology Network. USA means United States of America. Context: Chañar.

USB

Universal Serial Bus. The connector and complete power circuit must be identified independently. Context: Ground reader.

USD

United States dollar. Context: Moons reader.

United States dollar. The cost column is an independent planning allowance. Context: Laboratory reader.

United States dollar; local price currency.

United States dollar. The kit price is a dated listing, separate from delivery and tax. Context: The Field Herbarium.

United States dollar. Keep separate currencies in separate quotation totals. Context: Chañar.

United States dollar. A US planning allowance is not an Argentine price converted into dollars.

USDA

United States Department of Agriculture. Context: Chokecherry: the branch, the calendar and the jar.

USGS

United States Geological Survey. Context: Moons reader.

UTC

Coordinated Universal Time. Exposure timestamps must identify whether they refer to the beginning, middle or end of an exposure. Context: Moons reader.

ON THIS PAGE

UNLP Universidad Nacional de La Plata · **US** United States · **USD** United States dollar · **USA-NPN** USA National Phenology Network · **USB** Universal Serial Bus, the wired interface used for data and device power · **USDA** United States Department of Agriculture · **USGS** United States Geological Survey · **UTC** Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event

UV

Ultraviolet radiation. Its wavelengths are shorter than visible violet light.

V

Volt, a unit of electrical potential difference. Context: Moons reader.

Volt, the unit of electric potential difference. Context: Measure reader.

Volt, unit of electric potential difference; the symbol V also names the voltage variable in the equations here. Context: Ohm at the Workbench.

Vapour-control layer

A layer selected to control diffusion of water vapour as part of the complete moisture design. Context: Working drawings and records.

VAT

Value-added tax. Its rate and applicability depend on the transaction and jurisdiction. Context: Ohm at the Workbench.

Value-added tax. Context: Rubik and the Architecture of a Move.

VCC

Positive supply label used on many circuit boards. Read the actual board voltage specification before connecting power. Context: Ground reader.

Ventilator

A corrugated or otherwise channelled separator allowing air through the press stack. Context: The Field Herbarium.

Verbatim locality

The location wording retained as originally recorded, before later interpretation. Context: The Field Herbarium.

ViennaRNA

RNA-structure analysis software package. Context: Evidence reader.

Voucher

A preserved specimen linked to the organism or study it documents, allowing later examination. Context: The Field Herbarium.

A preserved specimen connected to a documented occurrence or study, allowing later examination. Context: Chañar.

A preserved specimen with a record that permits later examination. Context: Chokecherry: the branch, the calendar and the jar.

VPD

Velopharyngeal dysfunction, an umbrella description of a closing mechanism that does not work as intended. Context: Image study companion.

ON THIS PAGE

UV Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light · **VAT** Value-added tax · **VCC** Positive supply label used on many circuit boards

VPI

Velopharyngeal insufficiency, inadequate closure due to an anatomical cause. Context: Image study companion.

VRT

Volunteer Response Team, Wikimedia's team handling archived permissions. Context: Rubik and the Architecture of a Move.

W

Watt when used as a power unit. In the glide equations W denotes weight, measured in newtons. Context: Evidence reader.

Glossary: materials, measures and living systems (continued)

Watt, unit of power. A component's rated power requires its stated operating conditions. Context: Ohm at the Workbench.

Wb

Weber, the SI unit of magnetic flux.

WCA

World Cube Association, the organization whose notation and historical records are cited. Context: Rubik and the Architecture of a Move.

Wet basis

A result expressed relative to the sample mass including its water. Context: Chañar.

x

Single-pass conversion fraction in the synthetic recycle calculation. Context: Process reader.

XPS

Extruded polystyrene, a type of rigid foam insulation. Context: Working drawings and records.

Z

Complex impedance. Its real and imaginary parts describe the stated frequency response. Context: Measure reader.

Zaguán

An entrance passage connecting the street entrance with the interior of a house. Context: Shelter opening lessons.

ZeusC

The supplied creator or watermark label in the wider book image collection. It is not an institutional credit for the historical objects reproduced here. Context: The Field Herbarium.

°C

Degree Celsius, a temperature unit. Context: Moons reader.

ON THIS PAGE
SI Système international d'unités, the International System of Units · **WCA** World Cube Association · **XPS** Extruded polystyrene · **°C** degree Celsius, a temperature unit

γ
Gamma; the angle of steady descent below the horizontal. Context: Evidence reader.

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No paid API was used. New price observations distinguish local retail prices, dated currency conversions, planning allowances and unquoted acquisitions. The files are A4 reading editions; binding, printer trim and physical proof approval remain separate production steps.

C01 · Natural History Museum: HMS Endeavour, 250 years

https://www.nhm.ac.uk/discover/hms-endeavour-250.html

C02 · Kew: Artocarpus altilis, general information

https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:582598-1/general-information

C03 · Natural History Museum: On tour with Tupaia

https://www.nhm.ac.uk/discover/on-tour-with-tupaia.html

C04 · Bligh, Providence journal: 11-13 February 1793, transcription

https://whalesite.org/pitcairn/fatefulvoyage/providenceBligh/930211.html

C05 · UF/IFAS Gardening Solutions: Roselle

https://gardeningsolutions.ifas.ufl.edu/plants/edibles/vegetables/roselle/

C06 · UF/IFAS: Roselle, HS1517

https://ask.ifas.ufl.edu/publication/HS1517

C07 · UF/IFAS: Banana growing in the Florida home landscape

https://ask.ifas.ufl.edu/publication/mg040

C08 · UF/IFAS: Tropical and subtropical fruit crops for the home landscape

https://ask.ifas.ufl.edu/publication/MG373

ON THIS PAGE
API Application programming interface · **UF/IFAS** University of Florida / Institute of Food and Agricultural Sciences

C09 · CIP Genebank: Andean roots and tubers

https://cipotato.org/genebankcip/process/andean_roots_and_tubers/

C10 · UNESCO, decision 19.COM/7.B.32: cassava bread

https://ich.unesco.org/en/decisions/19.COM/7.B.32

C11 · Natural History Museum: Joseph Banks

https://www.nhm.ac.uk/discover/joseph-banks-scientist-explorer-botanist.html

D01 · INTA: Perros protectores de ganado

https://www.argentina.gob.ar/noticias/perros-protectores-de-ganado

D02 · INTA livestock guardian dog guide

https://www.magyp.gob.ar/sitio/areas/depredadores/documentos/inta/INTA-Perros-Protectores-ganado.pdf

D03 · Ontario: Livestock guardian dogs, selection and training

https://www.ontario.ca/document/livestock-guardian-dogs/selection-and-training

D04 · FCI Standard Schnauzer, standard 182

https://www.fci.be/Nomenclature/Standards/182g02-en.pdf

D05 · FCI German Shepherd Dog, standard 166

https://www.fci.be/Nomenclature/Standards/166g01-en.pdf

D06 · FCI Labrador Retriever, standard 122

https://www.fci.be/Nomenclature/Standards/122g08-en.pdf

D07 · FCI Poodle, standard 172

https://www.fci.be/Nomenclature/Standards/172g09-en.pdf

D08 · FCI Miniature Schnauzer, standard 183

https://www.fci.be/Nomenclature/Standards/183g02-en.pdf

D09 · FCI Collie Rough, standard 156

https://www.fci.be/Nomenclature/Standards/156g01-en.pdf

P01 · Banco Nación: banknote selling rates, 13 November 2026

https://www.bna.com.ar/Personas

P02 · Puppis Argentina: Pro Plan adult medium, 15 kg

https://www.puppis.com.ar/perros

P03 · Chewy: Pro Plan shredded chicken and rice adult, 35 lb

https://www.chewy.com/purina-pro-plan-high-protein-shredded/dp/52448

ON THIS PAGE

CIP Cast-in-place concrete · **UNESCO** United Nations Educational, Scientific and Cultural Organization · **INTA** Instituto Nacional de Tecnología Agropecuaria · **FCI** Fédération Cynologique Internationale · **kg** kilogram, a mass unit

P04 · Kiwoko Spain: Pro Plan medium adult chicken, 16.5 kg promotion

https://www.kiwoko.com/perros/comida-para-perros/pienso-seco-para-perros/pienso-de-pollo/pro-plan-medium-adult-pollo-pienso-para-perros/PRO12272212_M.html

P05 · Great Pyrenees Rescue Atlanta: adoption fees

https://greatpyratlanta.com/apply-to-adopt/

F01 · Saudi Press Agency: International Falcon Breeders Auction, 7 August 2024

https://www.spa.gov.sa/en/N2150243

F02 · Saudipedia: International Falcon Breeders Auction, 2021 sale record

https://saudipedia.com/en/international-falcon-breeders-auction

F03 · US official CFR: 50 CFR part 21, including section 21.82, 2025 edition

https://www.govinfo.gov/content/pkg/CFR-2025-title50-vol9/pdf/CFR-2025-title50-vol9-part21.pdf

F04 · Florida Fish and Wildlife: falconry licensing

https://myfwc.com/license/captive-wildlife/falconry/

F05 · Argentina, Ley 22.421: conservation of wildlife, updated text

https://www.argentina.gob.ar/normativa/nacional/38116/actualizacion

F06 · Argentina: Registro Público Único de Operadores de Fauna Silvestre

https://www.argentina.gob.ar/jefatura/turismo-y-ambiente/ambiente/recursos-naturales/fauna-silvestre/registro-publico-unico-de

F07 · European Commission CITES guide: internal trade principles

https://environmental-data.ec.europa.eu/cites/reference-guide/chapters/05_1_what_are_the_general_principles.html

F08 · European Commission CITES guide: trade exemptions

https://environmental-data.ec.europa.eu/cites/reference-guide/chapters/05_2_are_there_any_exemptions_from_the_internal_trade_p.html

F09 · European Commission: captive bird movements and imports

https://food.ec.europa.eu/animals/live-animal-movements/captive-birds_en

F10 · CITES: Appendix-I breeding operations and Falco rusticolus

https://cites.org/sites/default/files/notifications/E-Notif-2022-053.pdf

F11 · US Public Law 117-243: Big Cat Public Safety Act

https://www.govinfo.gov/content/pkg/PLAW-117publ243/html/PLAW-117publ243.htm

F12 · SENASA: prior authorisation for entry of wild animals and nontraditional pets

https://www.argentina.gob.ar/noticias/fauna-silvestre-debe-tramitarse-previamente-la-autorizacion-de-ingreso-al-pais

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kg kilogram, a mass unit · **US** United States · **CITES** Convention on International Trade in Endangered Species of Wild Fauna and Flora · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

F13 · SENASA: sanitary authorisation required for entry of birds

https://www.argentina.gob.ar/noticias/para-el-ingreso-de-aves-la-argentina-es-necesario-presentar-la-autorizacion-sanitaria

P06 · Saudi Central Bank: currency exchange rates

https://sama.gov.sa/en-US/Currency/FinExc/pages/currency.aspx

C12 · FAO/WHO Codex: code for reducing hydrocyanic acid in cassava, CXC 73-2013

https://www.fao.org/input/download/standards/13605/CXP_073e.pdf

E01 · Alpaca Canada: husbandry guidelines

https://www.alpacainfo.ca/downloads/documents/Alpaca-Husbandry-Guidelines.pdf

N01 · WSAVA: feeding treats to your dog

https://wsava.org/wp-content/uploads/2024/06/Feeding-treats-to-your-dog-v2.pdf

N02 · UC Davis Veterinary Medicine: treat guidelines for dogs

https://healthtopics.vetmed.ucdavis.edu/health-topics/canine/treat-guidelines-dogs

N03 · Cornell Riney Canine Health Center: re-evaluating your dog's diet

https://www.vet.cornell.edu/departments-centers-and-institutes/riney-canine-health-center/canine-health-topics/re-evaluating-your-dogs-diet

N04 · FDA: raw pet-food diets and bacterial risk

https://www.fda.gov/animal-veterinary/animal-health-literacy/get-facts-raw-pet-food-diets-can-be-dangerous-you-and-your-pet

N05 · VCA: care from birth to weaning

https://vcahospitals.com/orchard/know-your-pet/breeding-for-dog-owners-caring-from-birth-to-weaning

N06 · AAHA 2021 nutrition and weight-management guidelines

https://www.aaha.org/wp-content/uploads/2021/06/new-2021-aaha-nutrition-and-weight-management-guidelines-with-ref.pdf

N07 · AAHA: nutritional assessment through canine life stages

https://www.aaha.org/resources/life-stage-canine-2019/nutritional-assessment-2/

N08 · AAHA: senior canine life stage

https://www.aaha.org/resources/life-stage-canine-2019/canine-life-stage-calculator/canine-life-stage-senior/

N09 · VCA: hyperlipidemia and breed predisposition

https://vcahospitals.com/know-your-pet/hyperlipidemia

ON THIS PAGE

SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **CXC** Codex code of practice · **UC** University of California · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **AAHA** American Animal Hospital Association

T01 · AVSAB: humane dog training position statement, 2021

https://avsab.org/wp-content/uploads/2024/12/AVSAB-Humane-Dog-Training-Position-Statement-2021.pdf

T02 · AVSAB: puppy socialisation position statement

https://avsab.org/wp-content/uploads/2024/12/Puppy-Socialization-Position-Statement-FINAL.pdf

T03 · Dogs Trust: recall training

https://www.dogstrust.org.uk/dog-advice/training/basics/recall-training

T04 · Dogs Trust: settle training

https://www.dogstrust.org.uk/dog-advice/training/basics/settle-training

T05 · Dogs Trust: introducing a puppy to the world

https://www.dogstrust.org.uk/dog-advice/puppy/puppy-socialisation-introduction

T06 · Dogs Trust: training a stay

https://www.dogstrust.org.uk/dog-advice/training/basics/stay-training

T07 · Dogs Trust: ten dog-training tips

https://www.dogstrust.org.uk/dog-advice/training/techniques/top-ten-dog-training-tips

T08 · Dogs Trust: keeping calm at the veterinary clinic

https://www.dogstrust.org.uk/dog-advice/health-wellbeing/vet-visit/stay-calm-at-the-vet

TP1 · Filosofía Animal: home education prices, CABA and Buenos Aires

https://www.filosofiaanimal.com/servicios/clases-educacion-canina-presencial

TP2 · CustosClub: individual course duration and published fees

https://custosclub.com.ar/portfolio.html

TP3 · PetSmart: training services and published store prices

https://services.petsmart.com/training/2299

TP4 · HaSidoElPerro: Madrid and video training prices

https://www.hasidoelperro.es/

L01 · University of Minnesota Extension: feeding the mature horse

https://extension.umn.edu/agriculture/animals-and-livestock/horse/ten-things-you-should-know-about-feeding-the-mature-horse

L02 · University of Minnesota Extension: raising layer chicks and pullets

https://extension.umn.edu/agriculture/animals-and-livestock/poultry/raising-layer-chicks-and-pullets

L03 · Penn State Extension: dairy goat production and nutrition

https://extension.psu.edu/dairy-goat-production

ON THIS PAGE

AVSAB American Veterinary Society of Animal Behavior · **CABA** Ciudad Autónoma de Buenos Aires

L04 · Merck Veterinary Manual: management of llamas and alpacas

https://www.merckvetmanual.com/exotic-and-laboratory-animals/llamas-and-alpacas/management-of-llamas-and-alpacas

schnauzer · Standard Schnauzer.jpg

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roselle · Pomological Watercolor POM00007234.jpg

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papaya · Carica papaya - Köhler-s Medizinal-Pflanzen-029.jpg

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banks · Sir Joseph Banks. Mezzotint by S. W. Reynolds, 1834, after S Wellcome V0000327.jpg

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Catalogue and original image

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falconry · De arte venandi cum avibus- BNF MS. Fr. 12400.png

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Reuse terms

gyrfalcon · Falco rusticolusAWP366AAA.jpg

Creator: John James Audubon. Date: between 1827 and 1838date QS:P,+1850-00-00T00:00:00Z/7,P1319,+1827-00-00T00:00:00Z/9,P1326,+1838-00-00T00:00:00Z/9. Licence/status: Public domain.

Use: reproduced as a documentary image. Placement and size may change; no generative image replacement is used in this batch.

Catalogue and original image

Reuse terms

alpaca · Herd of Alpaca grazing (94420085).jpg

Creator: Thomas Quine. Date: 2006-01-06 11:51. Licence/status: CC BY 2.0.

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Catalogue and original image

Reuse terms

banana · Musa Simiarium Rumphius 1747 Herbarium amboinense 5 61.png

Creator: Rumphius. Date: 1747. Licence/status: Public domain.

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Catalogue and original image

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schnauzer_court · Schnauzer moyen Bilbo.JPG

Creator: Arthur Pons. Date: 2012-08-14. Licence/status: CC BY-SA 3.0.

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Catalogue and original image

Reuse terms

schnauzer_sunset · Schnauzer Pepper&Salt in Riga.JPG

Creator: Томасина. Date: 2013-11-09 20:21:13. Licence/status: CC BY-SA 3.0.

Use: reproduced as a documentary image. Placement and size may change; no generative image replacement is used in this batch.

Catalogue and original image

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german_lake · 20110425 German Shepherd Dog 8505.jpg

Creator: Jakub Hałun. Date: 2011-04-25. Licence/status: CC BY-SA 4.0.

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Catalogue and original image

Reuse terms

german_farm · German Shepherd Dog sitting leash.jpg

Creator: Tim Dobbelaere from Ieper, Belgium. Date: 2007-05-13 15:30. Licence/status: CC BY-SA 2.0.

Use: reproduced as a documentary image. Placement and size may change; no generative image replacement is used in this batch.

Catalogue and original image

Reuse terms

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labrador_dock · Labrador retriever mâle (3).jpg

Creator: Gzen92. Date: 2010-03-09 15:16:29. Licence/status: CC BY-SA 4.0.

Use: reproduced as a documentary image. Placement and size may change; no generative image replacement is used in this batch.

Catalogue and original image

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labrador_runway · Portrait of a labrador retriever.jpg

Creator: Dktue. Date: 2019-07-20 18:17:36. Licence/status: CC0.

Use: reproduced as a documentary image. Placement and size may change; no generative image replacement is used in this batch.

Catalogue and original image

Reuse terms

labrador_guest · Labrador Retriever snow.jpg

Creator: Original author Hand, edit by Pharaoh Hound. Date: Date of original photo: 20.1.2006. Date of edit: December 7, 2007. Licence/status: CC BY 2.5.

Use: reproduced as a documentary image. Placement and size may change; no generative image replacement is used in this batch.

Catalogue and original image

Reuse terms

poodle_shared · Standard Poodle black lying down.jpg

Creator: Belinda Hankins Miller. Date: 2007-09-18 14:29:06. Licence/status: CC BY 2.0.

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poodle_pond · Standard Poodle Watching.jpg

Creator: Met20. Date: 2010-04-24. Licence/status: CC BY-SA 3.0.

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Creator: John Webber. Date: 1776-01-01. Licence/status: Public domain.

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INTA Instituto Nacional de Tecnología Agropecuaria · **FCI** Fédération Cynologique Internationale · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source

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AAHA American Animal Hospital Association · **UC** University of California · **AVSAB** American Veterinary Society of Animal Behavior

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CABA Ciudad Autónoma de Buenos Aires

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kg kilogram, a mass unit

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US United States · **CITES** Convention on International Trade in Endangered Species of Wild Fauna and Flora · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

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INTA Instituto Nacional de Tecnología Agropecuaria · **USB** Universal Serial Bus, the wired interface used for data and device power · **TEG** Thermoelectric generator, a device converting part of heat flow into electrical energy · **NASA** National Aeronautics and Space Administration

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L0134 · D444 · Guarani

https://tratados.cancilleria.gob.ar/tratado_multi_ficha.php?id=k5+qmg

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ROV Remotely operated vehicle; underwater versions typically use a tether for control or recovery · **NOAA** National Oceanic and Atmospheric Administration · = equals

L0135 · D445 · Trevelin

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L0136 · D478 · Water Code

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L0138 · D450 · Aranjuez

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NASA National Aeronautics and Space Administration · = equals

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AGGO Argentine-German Geodetic Observatory · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **IMCCE** Institut de mécanique céleste et de calcul des éphémérides

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= equals · **SI** Système international d'unités, the International System of Units · **SKF** Svenska Kullagerfabriken, the historical Swedish bearing-company name · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica

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CAA Código Alimentario Argentino, the Argentine Food Code · **INTI** Instituto Nacional de Tecnología Industrial · **NIST** National Institute of Standards and Technology

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IUPAC International Union of Pure and Applied Chemistry · **SEGEMAR** Servicio Geológico Minero Argentino · **=** equals

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= equals · **FAO** Food and Agriculture Organization of the United Nations · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **APHIS** Animal and Plant Health Inspection Service

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UF/IFAS University of Florida / Institute of Food and Agricultural Sciences · **CIP** Cast-in-place concrete · **UNESCO** United Nations Educational, Scientific and Cultural Organization · **CXC** Codex code of practice

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NASA National Aeronautics and Space Administration · **NOAA** National Oceanic and Atmospheric Administration · **NESDIS** National Environmental Satellite, Data, and Information Service

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USDA United States Department of Agriculture · **ARS** Argentine peso

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m/s metres per second, speed · **=** equals

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= equals · **USA-NPN** USA National Phenology Network · **NIST** National Institute of Standards and Technology · **FIPS** Federal Information Processing Standards A United States government standards series for information processing · **NDSA** National Digital Stewardship Alliance

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VAT Value-added tax · **=** equals · **US** United States · **USDA** United States Department of Agriculture · **INTI** Instituto Nacional de Tecnología Industrial · **NIST** National Institute of Standards and Technology · **SI** Système international d'unités, the International System of Units · **RAE** Real Academia Española · **ASALE** Asociación de Academias de la Lengua Española

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NOAA National Oceanic and Atmospheric Administration · **NASA** National Aeronautics and Space Administration · **IOVS** Investigative Ophthalmology & Visual Science · **MSI** Museum of Science and Industry, Manchester · **=** equals · **CERN** European Organization for Nuclear Research; its acronym comes from the historical French Conseil européen pour la recherche nucléaire

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https://www.argentina.gob.ar/jefatura/turismo-y-ambiente/ambiente/recursos-naturales/cuencas-hidricas/sistema-acuifero-guarani

L1119 · A6 · IGN, geology and hydrogeology of the Guaraní system www.ign.gob.ar

https://www.ign.gob.ar/content/%C2%BFqu%C3%A9-es-el-sistema-acu%C3%ADfero-guaran%C3%AD

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DOE Department of Energy · **USGS** United States Geological Survey · **UMN** University of Minnesota · **ha** hectare, 10,000 square metres · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute

L1120 · A9 · ITBA, arsenic mapping and sampling project www.itba.edu.ar

https://www.itba.edu.ar/itba-relanza-mapa-arsenico-y-llama-a-comunidad-a-contribuir/

L1121 · A10 · Argentina, Misiones native-forest territorial zoning www.argentina.gob.ar

https://www.argentina.gob.ar/normativa/nacional/resoluci%C3%B3n-2-2021-347225/texto

L1122 · A11 · Trevelin, Route 71 fire-evacuation meetings www.trevelin.gob.ar

https://www.trevelin.gob.ar/content/prevencion-incendios-reuniones-con-vecinos-los-callejones-en-trevelin

L1123 · A12 · USGS, aquifer-test records and documentation water.usgs.gov

https://water.usgs.gov/water-resources/memos/memo.php?id=1475

L1124 · A13 · USGS Circular 1376, pumping and streamflow pubs.usgs.gov

https://pubs.usgs.gov/circ/1376/

L1125 · A14 · USGS, Ground Water and the Rural Homeowner pubs.usgs.gov

https://pubs.usgs.gov/gip/gw_ruralhomeowner/gw_ruralhomeowner_new.html

L1126 · A15 · SMI, Latitude90 equipment specifications www.snowmakers.com

https://www.snowmakers.com/all-weather-snowmaking

L1127 · A16 · Neveplast, ALLRIDE and FREESTYLE surfaces www.neveplast.it

https://www.neveplast.it/dry-ski-slope-allride-freestyle/

L1128 · A17 · ASHRAE Refrigeration, Ice Rinks; related cold-facility principles handbook.ashrae.org

https://handbook.ashrae.org/Handbooks/R26/SI/r26_ch44/r26_ch44_si.aspx

L1129 · A18 · CORUFA, Entre Ríos water-use procedures portal.entrerios.gov.ar

https://portal.entrerios.gov.ar/desarrolloeconomico/agriculturayganaderia/pf/corufaa/7278

L1130 · D459 · Barn

https://www.english-heritage.org.uk/visit/places/harmondsworth-barn/history/

L1131 · https://www.nahb.org/-/media/NAHB/news-and-economics/docs/housing-economics-plus/special-studies/2025/special-study-cost-of-constructing-a-home-2024-january-2025.pdf

https://www.nahb.org/-/media/NAHB/news-and-economics/docs/housing-economics-plus/special-studies/2025/special-study-cost-of-constructing-a-home-2024-january-2025.pdf

L1132 · https://www.energy.gov/cmei/systems/solar-photovoltaic-system-cost-benchmarks

https://www.energy.gov/cmei/systems/solar-photovoltaic-system-cost-benchmarks

L1133 · https://www.usfa.fema.gov/wui/outreach/before-wui-fire.html

https://www.usfa.fema.gov/wui/outreach/before-wui-fire.html

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ITBA Instituto Tecnológico de Buenos Aires · **USGS** United States Geological Survey · **=** equals · **CORUFA** Consejo Regulador del Uso de Fuentes de Agua

L1134 · https://www.cdc.gov/drinking-water/safety/guidelines-for-testing-well-water.html

https://www.cdc.gov/drinking-water/safety/guidelines-for-testing-well-water.html

L1135 · https://www.epa.gov/septic/how-care-your-septic-system

https://www.epa.gov/septic/how-care-your-septic-system

L1136 · https://www.nrcs.usda.gov/sites/default/files/2023-05/NRCS%20Agricultural%20Handbook%20590.pdf

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L1137 · https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/10408 34

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L1138 · https://courses.worldcampus.psu.edu/welcome/hort101 /print.html

https://courses.worldcampus.psu.edu/welcome/hort101/print.html

L1139 · https://extension.psu.edu/horse-stable-manure-management

https://extension.psu.edu/horse-stable-manure-management

L1140 · https://www.cdc.gov/healthy-swimming/safety/what-you-can-do-to-stay-healthy-in-swimming-pools.html

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L1141 · Open original record

https://www.argentina.gob.ar/normativa/provincial/ley-12257-123456789-0abc-defg-752-2100bvorpyel/actualizacion

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L1143 · https://www.bls.gov/ooh/building-and-grounds-cleaning/grounds-maintenance-workers.htm

https://www.bls.gov/ooh/building-and-grounds-cleaning/grounds-maintenance-workers.htm

L1144 · Open original record

https://www.technoalpin.com/en-us/snow-guns/snowfactory/

L1145 · Open source

https://www.bna.com.ar/Personas/

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NRCS Natural Resources Conservation Service

L1146 · Open source

https://www.argentina.gob.ar/anac/infraestructura-y-servicios-aeroportuarios/aerodromos/lista-de-tramites-para-aerodromos-helipuertos-lugares-aptos-y-obstaculos

L1147 · Open source

https://oldwww.pilatus-aircraft.com/data/document/Pilatus-Aircraft-Ltd-PC-12NGX-Factsheet.pdf

L1148 · Open source

https://www.mindef.gov.sg/news-and-events/latest-releases/28feb24_fs/

L1149 · Open source

https://www.fia.com/news/f1s-new-era-everything-you-need-know-about-how-fia-making-formula-1-more-competitive-more

L1150 · Open source

https://www.mendoza.gov.ar/prensa/irrigacion-y-el-colegio-notarial-firmaron-un-convenio-para-dar-celeridad-a-procesos-administrativos/

L1151 · Open source

https://www.irrigacion.gov.ar/web/

L1152 · Open source

https://www.plazaprop.com.ar/ficha.php?prp_id=321&usr_id=2559

L1173 · D471 · Photogrammetry

https://pubs.usgs.gov/publication/cir218

L1198 · template. Open primary reference

https://www.ccohs.ca/oshanswers/safety_haz/hand_tools/screwdrivers.html

L1199 · assumptions. Open primary reference

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L1201 · temperature evidence. Open primary reference

https://www.cdc.gov/food-safety/foods/keep-food-safe-after-emergency.html

L1202 · chart. Open primary reference

https://www.cdc.gov/natural-disasters/response/what-to-do-protect-yourself-during-a-power-outage.html

L1203 · disposal route. Open primary reference

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L1204 · toilet and waste handling. Open primary reference

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https://www.usfa.fema.gov/prevention/home-fires/prepare-for-fire/home-fire-escape-plans/

L1206 · rated shelter. Open primary reference

https://www.ddhammocks.com/products/ddtarp_3x3

L1207 · collect roof runoff. Open primary reference

https://www.nps.gov/subjects/camping/finding-and-setting-up-a-campsite.htm

L1208 · volume examples use explicit assu Open primary reference

https://www.nist.gov/pml/special-publication-811/nist-guide-si-appendix-b-conversion-factors/nist-guide-si-appendix-b9

L1209 · and outlets. US guidance is not lo Open primary reference

https://basc.pnnl.gov/resource-guides/gutters-and-downspouts

L1210 · arithmetic example, not a measure Open primary reference

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/raised-bed-gardens

L1211 · dimensions do not establish yield Open primary reference

https://www.extension.umd.edu/resource/how-make-compost-home

L1212 · examples, not a measured yield o Open primary reference

https://fdc.nal.usda.gov/food-details/170026/nutrients

L1213 · sweet-potato storage range follow Open primary reference 1 Open primary reference 2

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/harvesting-and-storing-home-garden-vegetables

L1214 · Open primary reference 1 Open primary reference 2

https://yardandgarden.extension.iastate.edu/faq/how-do-i-harvest-and-store-sweet-potatoes

L1215 · poultry example does not specify Open primary reference

https://www.aphis.usda.gov/livestock-poultry-disease/avian/defend-the-flock/biosecurity-basics/control-what-comes

L1216 · drainage route. No universal san Open primary reference

https://extension.umn.edu/agriculture/specialty-crops/commercial-fruit-production/postharvest-handling-of-fruit-and-vegetable-crops-in-minnesota

L1217 · L / 45 s test is an example, not a r Open primary reference

https://www.fao.org/4/s1250e/S1250E12.htm

L1218 · process and elevation adjustmen Open primary reference

https://nchfp.uga.edu/how/can/general-information/using-pressure-canners

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US United States · **s** second, a time unit

L1219 · database entry is not an instructi Open primary reference

https://www.fda.gov/food/chemical-contaminants-pesticides/natural-toxins-food

L1220 · Match documented cultivar requ Open primary reference

https://site.extension.uga.edu/townsandunionag/2020/02/chill-hours/

L1221 · design. The schematic supplies n Open primary reference

https://www.nrcs.usda.gov/conservation-basics/land/forests/agroforestry-systems/field-windbreak

L1222 · square stems. H-01 is a teaching Open primary reference 1 Open primary reference 2

https://www.kew.org/kew-gardens/plants/living-collection

L1223 · Open primary reference 1 Open primary reference 2

https://plants.ces.ncsu.edu/plants/ocimum-basilicum/

L1224 · image. Open primary reference

https://www.nccih.nih.gov/health/licorice-root

L1225 · Open primary reference 1 Open primary reference 2

https://extension.umn.edu/agriculture/animals-and-livestock/poultry/caring-for-chickens-in-cold-weather

L1226 · and depth. Open primary reference 1 Open primary reference 2

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/mulching-for-soil-and-garden-health

L1227 · Open primary reference 1 Open primary reference 2

https://www.extension.umd.edu/resource/cover-crops-gardens

L1228 · bands helps reveal broken seals. I Open primary reference

https://nchfp.uga.edu/how/can/general-information/storing-home-canned-foods

L1229 · recipe. Open primary reference

https://nchfp.uga.edu/how/ferment/general-information-on-fermenting/suitable-containers-covers-and-weights-for-fermenting-food

L1230 · condensation. Redry unspoiled f Open primary reference

https://nchfp.uga.edu/how/dry/drying-general/packaging-and-storing-dried-foods/

L1231 · expansion and vacuum formatio Open primary reference

https://nchfp.uga.edu/how/can/general-information/ensuring-high-quality-canned-foods/

L1232 · condition 7-10 days and inspect. Open primary reference 1 Open primary reference 2

https://extension.sdstate.edu/dehydrating-apples

L1233 · shelf life is specified. Open primary reference

https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/smoking-meat-and-poultry

L1234 · teaching example; rotation and le Open primary reference 1 Open primary reference 2

https://yardandgarden.extension.iastate.edu/how-to/crop-rotation-vegetable-garden

L1235 · Open primary reference 1 Open primary reference 2

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/living-soil-healthy-garden

L1236 · 20 seals are chosen arithmetic, no Open primary reference

https://extension.umn.edu/agriculture/specialty-crops/vegetable-farming/crop-and-field-planning-tools-for-vegetable-farmers

L1237 · Attributed cool storage is 32-41° Open primary reference

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/saving-vegetable-seeds

L1238 · 17/20 result is 85%, not certified Open primary reference

https://yardandgarden.extension.iastate.edu/how-to/how-store-seeds-and-test-germination-rates

L1239 · water guide. Exact conversions a Open primary reference 1 Open primary reference 2

https://extension.umd.edu/resource/growing-carrots-home-garden

L1240 · Open primary reference 1 Open primary reference 2

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/growing-carrots-and-parsnips

L1241 · condition. Open primary reference

https://www.fao.org/4/x0039e/x0039e06.htm

L1242 · date is asserted. Open primary reference 1 Open primary reference 2

https://extension.umn.edu/agriculture/animals-and-livestock/poultry/raising-chickens-for-eggs

L1243 · test every contaminant. Open primary reference

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/soil-testing-for-lawns-and-gardens

L1244 · the origin and analysis of import Open primary reference

https://extension.umd.edu/resource/soil-fill-raised-beds

L1245 · The second link is the resource in Open primary reference 1 Open primary reference 2

https://www.argentina.gob.ar/noticias/pautas-para-disenar-una-huerta-en-la-patagonia-cordillerana

L1246 · dates are not transferred to Argen Open primary reference

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/planting-the-vegetable-garden

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° degree, an angle unit · % percent, parts per hundred

L1247 · error is excluded; this chapter uses Open primary reference

https://brahmsonline.kew.org/Content/Projects/msbp/resources/Training/15-making-herbarium-specimens.pdf

L1248 · 24-hour inspection. Drying time v Open primary reference 1 Open primary reference 2

https://www.amnh.org/learn-teach/curriculum-collections/biodiversity-counts/plant-identification/how-to-press-and-preserve-plants

L1249 · Open primary reference 1 Open primary reference 2

https://www.rhs.org.uk/science/conservation-biodiversity/conserving-garden-plants/rhs-herbarium/pressing-and-collecting-samples

L1250 · evidence of use require their own a Open primary reference 1 Open primary reference 2

https://www.kew.org/read-and-watch/the-damselfly-and-the-fire-bell

L1251 · Open primary reference 1 Open primary reference 2

https://www.nccih.nih.gov/health/using-dietary-supplements-wisely

L1252 · separate axes, not interchangeable Open primary reference

https://app.floraargentina.edu.ar/new-app/cono-sur/especie.php?id=9564

L1253 · the photographed specimen. Open primary reference

https://sib.gob.ar/especies/geoffroea-decorticans

L1254 · household bottling schedule or nu Open primary reference

https://www.argentina.gob.ar/normativa/nacional/resoluci%C3%B3n-11-2025-420345/texto

L1255 · to identify a harvest. Open primary reference

https://plants.ces.ncsu.edu/plants/prunus-virginiana/

L1256 · a universal planting specification. Open primary reference

https://extension.usu.edu/yardandgarden/research/chokecherry-in-the-garden

L1257 · headspace. Canning directions are Open primary reference

https://www.uaf.edu/ces/publications/database/food/chokecherries.php

L1258 · not assumed to equal a pound. Open primary reference

https://extension.usu.edu/preserve-the-harvest/research/preserving-the-harvest-how-to-preserve-chokecherries

L1259 · Inch conversion gives 1/2 in = 12.7 Open primary reference

https://tsapps.nist.gov/publication/get_pdf.cfm?pub_id=904045

L1260 · existing circular crops; the book ph Open primary reference 1 Open primary reference 2

https://commons.wikimedia.org/wiki/File:Geoffraea_decorticans,_fruit._(8434418444).jpg

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= equals

L1261 · Open primary reference 1 Open primary reference 2

https://commons.wikimedia.org/wiki/File:Prunus_virginiana_(5069894416).jpg

L1262 · inconsistent compound-leaf field is Read primary reference 1 Read primary reference 2

https://ipm.ucanr.edu/weeds-identification-gallery/dandelion/

L1263 · Read primary reference 2

https://plants.ces.ncsu.edu/plants/taraxacum-officinale/

L1264 · detoxification or a preservation proc Read primary reference

https://dnr.maryland.gov/cookbook/Pages/Spicy-Dandelion-Greens-with-Bacon.aspx

L1265 · botanical identity or make an unsuit Read primary reference

https://www.fda.gov/consumers/consumer-updates/7-tips-cleaning-fruits-vegetables

L1266 · Odour carried on fingers can mislea Read primary reference

https://www.bfr.bund.de/en/press-release/baerlauch-vorsicht-vor-verwechslungen/

L1267 · drawing establishes edibility. Read primary reference

https://www.rhs.org.uk/plants/879/allium-ursinum/details

L1268 · decisions use BfR rather than a low- Read primary reference

https://plants.ces.ncsu.edu/plants/convallaria-majalis/

L1269 · Calendar months depend on place. Read primary reference

https://plants.ces.ncsu.edu/plants/colchicum-autumnale/

L1270 · induce vomiting or improvise a rem Read primary reference

https://www.bfr.bund.de/en/service/frequently-asked-questions/topic/poisonous-plants-how-to-protect-yourself-and-what-to-do-in-case-of-poisoning/

L1271 · herbs. Larger herbs need larger pots; Read primary reference 1 Read primary reference 2

https://extension.umd.edu/resource/growing-herbs-containers-and-indoors

L1272 · Read primary reference 2

https://extension.umd.edu/resource/growing-vegetables-containers-and-salad-tables

L1273 · Timing is a guide, not an automatic Read primary reference

https://nchfp.uga.edu/how/dry/recipes/herbs/

L1274 · specification. Read primary reference

https://plants.ces.ncsu.edu/plants/arctium-lappa/

L1275 · full recipe; its 5/15 mL spoon convent Read primary reference

https://www.maff.go.jp/e/policies/market/k_ryouri/search_menu/7198/index.html

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mL millilitre, 0.001 litre

L1276 · answer different questions. Read primary reference

https://www.nccih.nih.gov/health/know-science/how-to-make-sense-of-a-scientific-journal-article/methods/types-of-research

L1277 · chosen arithmetic, not trial data. Read primary reference

https://www.nccih.nih.gov/health/know-science/how-to-make-sense-of-a-scientific-journal-article/results

L1278 · name does not establish efficacy or ide Read primary reference

https://www.kew.org/science/our-science/science-services/medicinal-plant-names-services

L1279 · Read primary reference 2

https://docs.gbif.org/georeferencing-quick-reference-guide/1.0/en/

L1280 · Read primary reference 2

https://sib.gob.ar/institucional/criterios-ingreso-informacion

L1281 · database query. Read primary reference

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L1282 · uses. A common name does not defin Read primary reference

https://www.argentina.gob.ar/inta/ciap/el-cultivo-del-algarrobo-en-argentina

L1283 · benefit or recipe is derived from this re Read primary reference

https://biblioteca.inia.cl/items/b6fd2cab-b81e-442c-ac4f-96368ec2b866

L1284 · not specimen measurements. Read primary reference 1 Read primary reference 2

https://efloras.org/florataxon.aspx?flora_id=1&taxon_id=200023153

L1285 · Read primary reference 2

https://efloras.org/florataxon.aspx?flora_id=2&taxon_id=200023153

L1286 · are not universal specifications. Read primary reference

https://plants.ces.ncsu.edu/plants/glycyrrhiza-glabra/

L1287 · is not a measured specimen. Read primary reference

https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:496941-1/general-information

L1288 · arithmetic, not an extraction specifica Read primary reference

https://www.tga.gov.au/sites/default/files/2026-07/EMA_HMPC_CHMP_CVMP_201116_2005_Rev.3-guideline-quality-herbal-medicinal-products-traditional-herbal-medicinal-products-final_en.pdf

L1289 · medicines and reactions for a professio Read primary reference 1 Read primary reference 2

https://ods.od.nih.gov/factsheets/BotanicalBackground-Consumer/

L1290 · Read primary reference 2

https://ods.od.nih.gov/pubs/DietarySupplementandMedicineRecord.pdf

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L1291 · burns from raw topical garlic. Read primary reference

https://www.nccih.nih.gov/health/garlic

L1292 · evidence. Read primary reference

https://www.nccih.nih.gov/health/echinacea

L1293 · retained photograph. Read primary reference

https://apps.worldagroforestry.org/treedb/AFTPDFS/Moringa_oleifera.PDF

L1294 · Local adaptation remains necessary. Read primary reference

https://agritech.tnau.ac.in/horticulture/horti_vegetables_annualmoringa.html

L1295 · preparation. Read primary reference

https://www.cdc.gov/water-emergency/about/index.html

L1296 · book was not independently read. Read primary reference

https://sib.gob.ar/especies/ugni-molinae

L1297 · No fixed rooting temperature. Read primary reference

https://www.rhs.org.uk/plants/18573/ugni-molinae/details

L1298 · chosen volume example. Read primary reference

https://www.rhs.org.uk/propagation/semi-ripe-cuttings

L1299 · no current stock or yield promise. Read primary reference

https://opia.fia.cl/601/articles-81742_archivo_01.pdf

L1300 · about Argentine regulations. Read primary reference

https://keys.landcareresearch.co.nz/nzmyrtaceae/key/nzmyrtaceae/Media/Html/entities/Ugni_molinae.htm

L1301 · and bulb wording not adopted. Read primary reference

https://plants.ces.ncsu.edu/plants/hemerocallis-fulva/

L1302 · Crown, roots, leaf fan, scape and singl Read primary reference

https://daylilies.org/resources/faq/

L1303 · 2026, not an Argentine site specificati Read primary reference

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/daylilies

L1304 · are not imported into the method. Read primary reference

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L1305 · safe ingestion quantity is supplied. Read primary reference

https://www.fda.gov/animal-veterinary/animal-health-literacy/lovely-lilies-and-curious-cats-dangerous-combination

L1306 · D191 source

https://powo.science.kew.org/taxon/1733-2

L1307 · D192 source

https://powo.science.kew.org/taxon/urn%3Alsid%3Aipni.org%3Anames%3A326388-2

L1308 · D193 source

https://powo.science.kew.org/taxon/urn%3Alsid%3Aipni.org%3Anames%3A364742-1

L1309 · D194 source

https://powo.science.kew.org/taxon/urn%3Alsid%3Aipni.org%3Anames%3A254151-1

L1310 · D539 Tesla portrait: Library of Congress, LCCN 2014684845 Napoleon Sarony, ca. 1890; Bain News Service. LC-DIG-ggbain-04851. LOC: no known restrictions on publication. Full frame, unretouched; approximate catalogue date.

https://www.loc.gov/item/2014684845/

L1311 · D541 Vernier caliper photograph: ArtMechanic Photographed 18 March 2004; uploaded 28 June 2005. Wikimedia Commons, CC BY-SA 3.0. Full frame, unretouched. Source describes a 3.58 mm reading; the image shows a 0.02 mm vernier.

https://commons.wikimedia.org/wiki/File:Messschieber.jpg

L1312 · D542 NIST: Gage Block Handbook and dimensional comparisons Doiron and Beers, Monograph 180 and related comparison studies. Working references, temperature, contact effects and calibration controls. Example dimensions in this lesson are explicitly assumed.

https://www.nist.gov/pml/sensor-science/dimensional-metrology/selected-publications-dimensional-metrology-gage-blocks

L1313 · D543 NIST: SI Units - Volume Cubic metre, litre, millilitre and conversions. The 60 L and 50 L cases are calculated internal rectangular volumes, not measured tank capacities.

https://www.nist.gov/pml/owm/si-units-volume

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BY-SA Creative Commons Attribution-ShareAlike · **mm** millimetre, 0.001 metre · **NIST** National Institute of Standards and Technology · **SI** Système international d'unités, the International System of Units · **L** litre, a volume unit · **TAR** Test accuracy ratio Compares the accuracy or tolerance of a device under test with the reference equipment's accuracy · **NASA** National Aeronautics and Space Administration

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cm centimetre, 0.01 metre · **×** multiplied by · **WHO** World Health Organization · **UNICEF** United Nations Children's Fund · **g** gram, 0.001 kilogram · **SINAGIR** Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil

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mm millimetre, 0.001 metre · **×** multiplied by · **DAMI** Desarrollo de Áreas Metropolitanas del Interior An Argentine metropolitan-development programme credited in the cited source · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **SINAGIR** Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil · **=** equals

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m metre, a length unit · **×** multiplied by · **CABA** Ciudad Autónoma de Buenos Aires · **IFRC** International Federation of Red Cross and Red Crescent Societies · **USB** Universal Serial Bus, the wired interface used for data and device power · **LED** Light-emitting diode · **L** litre, a volume unit

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cm centimetre, 0.01 metre · **m** metre, a length unit · **×** multiplied by · **INTA** Instituto Nacional de Tecnología Agropecuaria · **L** litre, a volume unit · **NAS** National Academy of Sciences · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica

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L1460 · D705 US FDA: reducing food waste while retaining food safety

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MERCOSUR Mercado Común del Sur · **INTA** Instituto Nacional de Tecnología Agropecuaria · **g** gram, 0.001 kilogram · **m²** square metre, an area unit · **US** United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **INTI** Instituto Nacional de Tecnología Industrial · **UNNE** Universidad Nacional del Nordeste · **IFAS** Institute of Food and Agricultural Sciences

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L1479 · D727 USDA FoodData Central: SR Legacy data download

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EPA Environmental Protection Agency, United States · **m** metre, a length unit · **mm** millimetre, 0.001 metre · **INTI** Instituto Nacional de Tecnología Industrial · **US** United States · **INTA** Instituto Nacional de Tecnología Agropecuaria · **EEA** Estación Experimental Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **=** equals · **EEAOC** Estación Experimental Agroindustrial Obispo Colombres · **USDA** United States Department of Agriculture

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INTA Instituto Nacional de Tecnología Agropecuaria · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **RENSPA** Registro Nacional Sanitario de Productores Agropecuarios · **USDA** United States Department of Agriculture · **APHIS** Animal and Plant Health Inspection Service · **EU** European Union · **=** equals

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ASSAL Agencia Santafesina de Seguridad Alimentaria · **BPA** Buenas Prácticas Agrícolas Good agricultural practices · **INTI** Instituto Nacional de Tecnología Industrial · **CIRSOC** Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles · **=** equals · **kg** kilogram, a mass unit · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **L** litre, a volume unit · **INTA** Instituto Nacional de Tecnología Agropecuaria

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IGN Instituto Geográfico Nacional, Argentina's national geographic institute · **MDE-Ar** Modelo Digital de Elevaciones de la República Argentina · **INTA** Instituto Nacional de Tecnología Agropecuaria · **CABA** Ciudad Autónoma de Buenos Aires · **APRHI** Administración Provincial de Recursos Hídricos Córdoba's provincial water-resources authority · **CREA** Consorcios Regionales de Experimentación Agrícola

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SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service · **INTA** Instituto Nacional de Tecnología Agropecuaria · **L** litre, a volume unit · **PEAD** Polietileno de alta densidad High-density polyethylene, a plastic used for pipe and other durable products · **SMN** Servicio Meteorológico Nacional

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USDA United States Department of Agriculture · **=** equals · **IDE** Infraestructura de Datos Espaciales, spatial-data infrastructure · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **NHTSA** National Highway Traffic Safety Administration, the United States road-vehicle safety agency · **DTN** Detiannuo · **NASA** National Aeronautics and Space Administration · **SVS** Scientific Visualization Studio

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SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **NCHFP** National Center for Home Food Preservation · **US** United States · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica

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INTA Instituto Nacional de Tecnología Agropecuaria · **=** equals · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **DTV-e** Documento de Tránsito Vegetal electrónico, Argentine plant-transit documentation · **CIEFAP** Centro de Investigación y Extensión Forestal Andino Patagónico · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service

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L1625 · D906 Mr.1032: cover crop being crimped

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SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **ANR** Agriculture and Natural Resources · **=** equals · **INTA** Instituto Nacional de Tecnología Agropecuaria · **FAUBA** Facultad de Agronomía de la Universidad de Buenos Aires · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service

L1626 · D907 Prague City Tourism: Old Town Hall astronomical clock

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NASA National Aeronautics and Space Administration · **INTA** Instituto Nacional de Tecnología Agropecuaria · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **USDA** United States Department of Agriculture · **FAS** Foreign Agricultural Service · **=** equals

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INTA Instituto Nacional de Tecnología Agropecuaria · **=** equals · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **UC** University of California · **USDA** United States Department of Agriculture · **FSIS** Food Safety and Inspection Service

L1670 · D962 NARA 285778: Root cellar with ventilation shaft

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L1673 · D968 New Mexico State University: Nitrogen fixation by legumes, Guide A-129 Robert Flynn and John Idowu explain the plant-bacterium partnership and the difference between a harvested grain legume and a green-manure crop. Removing the harvested

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L1674 · D970 Museo Nacional del Prado: Saturno, Francisco de Goya The museum dates this Black Painting to 1820-1823 and records its transfer from wall to canvas. This identifies the work represented in the received collage; the collage itself has a

https://www.museodelprado.es/coleccion/obra-de-arte/saturno/18110a75-b0e7-430c-bc73-2a4d55893bd6

L1675 · D971 9/11 Memorial & Museum: Spencer Finch's memorial artwork The institution explains the 2,983 blue watercolour squares and the relation to the people killed in 2001 and 1993. The Virgil passage and Tom Joyce's steel lettering belong to the

https://www.911memorial.org/connect/blog/trying-remember-color-sky-september-morning

L1676 · D972 9/11 Memorial & Museum: About the memorial The memorial identifies Michael Arad and Peter Walker's Reflecting Absence design and the pools at the towers' footprints. The design was selected in 2004; the memorial opened on

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L1678 · D975 US National Archives: Original design of the Great Seal Congress approved the Great Seal on 20 June 1782. Read its eagle, shield, olive branch and other elements in the documented design history. Resemblance to another emblem is not

https://www.archives.gov/milestone-documents/original-design-of-the-great-seal-of-the-united-states

L1679 · D976 NCCIH: Reflexology The US research agency distinguishes reflexology's proposed organ correspondences from demonstrated health effects. Received tongue, tooth, hand and foot charts must not be used

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NARA National Archives and Records Administration · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **US** United States · **NCCIH** National Center for Complementary and Integrative Health

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L1680 · D977 Utah Poison Control Center: Dangers of foraging Positive identification is essential; small amounts of some plants can be dangerous and identification applications are not sufficient assurance. A touch, taste or waiting sequence

https://poisoncontrol.utah.edu/news/2023/08/dangers-of-foraging

L1681 · D978 NIH Office of Dietary Supplements: Iron, professional fact sheet Describes iron's physiological role and the distinction between haem and non-haem dietary iron. Food charts and body-outline graphics do not establish a diagnosis, an individual

https://ods.od.nih.gov/factsheets/Iron-HealthProfessional/

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L1683 · D980 NASA Goddard: Origins of the elements The educational periodic-table visual associates elements with astrophysical production processes using Jennifer Johnson's work. The colours represent explanatory categories; a

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L1685 · D982 NASA Science: Saturn facts Saturn is a gas giant with a ring system, named after a Roman agricultural deity. Astronomy describes the physical planet; a modern collage connecting Saturn to eyes, cubes or brands

https://science.nasa.gov/saturn/facts/

L1686 · D983 NASA Science: Ganymede and Titan NASA identifies Ganymede as the largest moon. Titan is the second largest and has a substantial atmosphere; see science.nasa.gov/saturn/moons/titan/facts/. Comparison graphics

https://science.nasa.gov/jupiter/jupiter-moons/ganymede/

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L1688 · D985 Project Gutenberg: The Kybalion, Three Initiates Digital edition of the book first published in 1908 under the name Three Initiates. Its seven-principle scheme is a modern esoteric formulation. Preserve the distinction between this

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NIH National Institutes of Health · **NASA** National Aeronautics and Space Administration · **PLOS** Public Library of Science · **=** equals

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L1690 · D989 Illinois Extension: Sow, grow, rotate Emily Swihart, 5 January 2024. Family classifications, cover-crop accounting and example rotation schedules support the botanical-family method. The eight-bed dimensions,

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L1691 · D990 USDA photograph: soybean root nodules Full 641 × 447 pixel photograph attributed to the US Department of Agriculture; archived by Wikimedia Commons in 2005. The file record identifies it as a US federal work in the

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L1692 · D991 Bullitt County History Museum Eighth-grade examination, November 1912 The museum reproduces the donated sheet and explains who sat the county common exam. Its scan provides the question wording and sequence.

https://www.bullittcountyhistory.com/bchistory/schoolexam1912.html

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L1695 · D994 Library of Congress · Geography and Map Division Abraham Ortelius, Tartariae sive Magni Chami Regni typus Record 83690086 distinguishes the 1570 map design from the 1603 atlas edition containing this collection impression.

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L1697 · D996 University of Washington Libraries · Special Collections Jodocus Hondius, Tartaria, order MAP131 Rare Map Collection G7400 1630 .H6. The record transcribes the cartouches and dates its own Amsterdam impression between 1630 and 1635.

https://digitalcollections.lib.washington.edu/digital/collection/maps/id/76

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USDA United States Department of Agriculture · **US** United States · × multiplied by

L1698 · D997 American Geographical Society Library · University of Wisconsin-Milwaukee Carte de Tartarie, digital item am004751 The catalogue dates the Amsterdam publication by Covens and Mortier to 1757 and credits Guillaume de l'Isle in the title. The institutional

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https://blogs.loc.gov/maps/2021/04/searching-for-saint-brendans-island/

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https://www.ign.gob.ar/NuestrasActividades/ProduccionCartografica/Cartografia

L1701 · D1001 NASA · History The National Aeronautics and Space Act of 1958 The history dates the signing of the act and the start of NASA operations.

https://www.nasa.gov/history/65-years-ago-the-national-aeronautics-and-space-act-of-1958-creates-nasa/

L1702 · D1002 NASA · biographies Wernher von Braun Biographical record of the German rocket developer, his dates and later leadership of the Marshall Space Flight Center.

https://www.nasa.gov/people/wernher-von-braun/

L1703 · D1003 Mittelbau-Dora Memorial Tunnel complex at the former Mittelwerk The memorial records the use of concentration camp prisoners for underground construction and arms production.

https://www.dora.de/en/geschichte/historischer-ort/stollen

L1704 · D1004 Smithsonian Libraries and Archives Georg Simon Ohm, Die galvanische Kette Digitized primary work, published in Berlin in 1827. The historical publication and the modern classroom notation have different dates.

https://library.si.edu/digital-library/book/diegalvanischeke00ohmg

L1705 · D1006 Museum of Applied Arts · Budapest Toy, Rubik's cube, collection item 2382 The holding museum dates the first design to 1974 and describes Rubik's work in Hungary.

https://collections.imm.hu/gyujtemeny/toy-rubik-s-cube/2382?npn=1&order=default

L1706 · D1007 Smithsonian · National Museum of American History Puzzle, Rubik's Cube, object nmah_1030876 The surviving puzzle purchased around 1980 supplies a separate material witness to its commercial circulation.

https://www.si.edu/object/nmah_1030876

L1707 · D1008 Corpus dei disegni di architettura del Duomo di Milano Cesare Cesariano, cathedral illustration, catalogue 412 The holding catalogue reproduces the 1521 plate and transcribes the Latin heading and lettered construction.

https://www.disegniduomomilano.it/disegni/detail/412/

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NASA National Aeronautics and Space Administration · = equals

L1708 · D1009 Corpus dei disegni di architettura del Duomo di Milano Disegno del Duomo di Milano triangolato, catalogue 436 A later drawing and its commentary document the use of the Milan example in a dispute over the heights of vaults at San Petronio in Bologna.

https://www.disegniduomomilano.it/disegni/detail/436/

L1709 · D1011 US National Park Service · Statue of Liberty National Monument Statue's face waiting to be installed NPS asset be75aa72-155d-451f-6795-c5910bea26c1 identifies the island and subject. Its supplied description gives neither a photographer nor an exposure d

https://www.nps.gov/media/photo/gallery-item.htm?gid=BE71D5BF-155D-451F-67B66D485923C67B&id=be75aa72-155d-451f-6795-c5910bea26c1&pg=3770178

L1710 · D1013 US National Park Service · Statue of Liberty Statue of Liberty facts Separates construction in France, shipment in 1885, American assembly and the 1886 dedication.

https://www.nps.gov/stli/learn/statue-of-liberty-facts.htm

L1711 · D1014 Argentina · Comisión Nacional de Monumentos Palacio de Aguas Corrientes Buenos Aires monument record dates the work to 1887-1894 and identifies the load-bearing metal structure, tanks and ceramic cladding.

https://www.argentina.gob.ar/capital-humano/cultura/monumentos/palacio-de-aguas-corrientes

L1712 · D1016 US Federal Aviation Administration Pilot's Handbook of Aeronautical Knowledge The handbook supplies the conventional relationships between controls, motion and aircraft axes.

https://www.faa.gov/sites/faa.gov/files/pilots/pilot_handbook.pdf

L1713 · D1018 Facultad de Agronomía, Universidad de Buenos Aires Heladas en la Argentina: definitions and statistical measures Defines meteorological frost at 0 °C and the separate 3 °C screen threshold used as an agricultural indicator.

https://heladas.agro.uba.ar/definiciones.htm

L1714 · D1019 Facultad de Agronomía, Universidad de Buenos Aires Aeroparque Aero, Buenos Aires | historical frost series at 0 °C 1956-2012. Mean annual frost-day frequency 1. The table separately reports years without frost.

https://heladas.agro.uba.ar/aeroparque_aero_0.htm

L1715 · D1020 Facultad de Agronomía, Universidad de Buenos Aires Ezeiza Aero, Buenos Aires | historical frost series at 0 °C 1956-2012. Mean annual frost-day frequency 16. The latest last frost in the series was 15 November 2007.

https://heladas.agro.uba.ar/ezeiza_aero_0.htm

L1716 · D1021 Facultad de Agronomía, Universidad de Buenos Aires Pergamino INTA, Buenos Aires | historical frost series at 0 °C 1950-2011. Mean last frost 13 September. The latest was 23 October 1955.

https://heladas.agro.uba.ar/pergamino_inta_0.htm

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US United States · **NPS** National Park Service, United States · **=** equals · **°C** degree Celsius, a temperature unit · **INTA** Instituto Nacional de Tecnología Agropecuaria

L1717 · D1022 Facultad de Agronomía, Universidad de Buenos Aires Corrientes Aero, Corrientes | historical frost series at 0 °C 1962-2012. Mean annual frost-day frequency 1. The latest last frost recorded was 26 August 1984.

https://heladas.agro.uba.ar/corrientes_aero_0.htm

L1718 · D1023 Facultad de Agronomía, Universidad de Buenos Aires La Consulta INTA, Mendoza | historical frost series at 0 °C 1970-2011. Mean last frost 1 October and latest last frost 14 November 1987.

https://heladas.agro.uba.ar/laconsulta_inta_0.htm

L1719 · D1024 Facultad de Agronomía, Universidad de Buenos Aires Bariloche Aero, Río Negro | historical frost series at 0 °C 1956-2012. Mean last frost 19 December. Mean annual frequency 117 frost days.

https://heladas.agro.uba.ar/bariloche_aero_0.htm

L1720 · D1025 FCAG, Universidad Nacional de La Plata · Wikimedia Commons Meteorological tower, rain gauge and instrument enclosure, c. 1950 Photographer unrecorded. University collection credit and approximate date follow the file description. The repository marks the

https://commons.wikimedia.org/wiki/File:Torre_de_meteorolog%C3%ADa,_pluvi%C3%B3metro_y_caseta_de_meteorolog%C3%ADa.jpg

L1721 · D1026 Food and Agriculture Organization of the United Nations Crop evapotranspiration, Irrigation and Drainage Paper 56, chapter 1 Explains the conversion from a water depth to a volume per area. Field area, refill target, efficiency and flow in the worked led

https://www.fao.org/4/X0490E/x0490e04.htm

L1722 · D1028 Deutscher Wetterdienst · Climate Data Center Phenological observations of crops from sowing to harvest German observation records distinguish crop, development phase, station, year and occurrence date.

https://opendata.dwd.de/climate_environment/CDC/observations_germany/phenology/annual_reporters/crops/recent/DESCRIPTION_obsgermany-phenology-annual_reporters-crops-recent_en.pdf

L1723 · D1029 David Rumsey Map Collection · list 10130.087 Tavola 1-60, digital composite with four corner diagrams Find list 10130.087. The record gives 4, 8, 12, 18 and 18 sheets in the five rings. Related records identify the four additional corner illustrations.

https://www.davidrumsey.com/luna/servlet/view/all/who/Manuscript/where/World?cic=RUMSEY~8~1&os=0&pgs=50&sort=pub_list_no_initialsort,pub_date,pub_list_no,series_no

L1724 · D1030 David Rumsey Map Collection · list 10130.042 Tavola XXXX, Libro Terzo · Argentina and Tierra del Fuego Manuscript plate 40, catalogued at 40 × 51 cm. The list-number suffix identifies a digital record. Geographic scale varies.

https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~303597~90074228:Tavola-XXXX--Che-Ha-Sua-Superiore-L

L1725 · D1031 Katherine Parker · Barry Lawrence Ruderman Antique Maps, 2017 A Mind at Work: Urbano Monte's 60-Sheet Manuscript World Map PDF pp. 13-15 describe the manuscript and rings, pp. 23-25 the treatise and projection, p. 35 the surviving examples. Copyright and

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°C degree Celsius, a temperature unit · **INTA** Instituto Nacional de Tecnología Agropecuaria · **FCAG** Facultad de Ciencias Astronómicas y Geofísicas · **=** equals · **cm** centimetre, 0.01 metre · **×** multiplied by · **PDF** Portable Document Format

https://s3.amazonaws.com/rumsey3/Monte/Urbano+Monte+Catalog.pdf

L1726 · D1032 David Rumsey Map Collection · 26 November 2017 Monte's planisphere and its digital assembly David Rumsey credits Brandon Rumsey with digitally assembling the sheets and discusses Monte's instructions for a pivoting display.

https://www.davidrumsey.com/blog/2017/11/26/largest-early-world-map-monte-s-10-ft-planisphere-of-1587

L1727 · D1035 NASA · Goddard Space Flight Center Total solar eclipse, 14 December 2020 · geometry and path The fact sheet depicts the Sun, Moon, umbra and penumbra. The lesson uses an original two-dimensional ray construction.

https://www.nasa.gov/wp-content/uploads/2020/12/2020_eclipse_factsheet_english.pdf

L1728 · D1038 David Rumsey Map Collection Collection History · copyright and use The general collection page directs commercial users to seek permission. Both collection notices accompany the three digital image records.

https://www.davidrumsey.com/about

L1729 · D1039 Instituto Geográfico Nacional, Argentina Mapas escolares de la República Argentina Modern Argentine reference maps for comparison with manuscript coastlines, names and orientation. Use the legend, edition and scale of the selected map.

https://www.ign.gob.ar/AreaServicios/Descargas/MapasEscolares

L1730 · D1040 Verónica Mautone and Mónica Rubió · Ediciones INTA, 2018 Producción artesanal de semillas para la huerta Printed pp. 13, 17, 27 and 29-30. The general isolation discussion and tomato-specific table give different distances. ISBN 978-987-521-916-8.

https://www.argentina.gob.ar/sites/default/files/2023/09/03inta_produccion-artesanal-de-semillas-para-la-huerta-digital.pdf

L1731 · D1041 Organic Seed Alliance · United States A Seed Saving Guide for Gardeners and Farmers The crop-specific chart separates common bean, modern tomato and heirloom or potato-leaf tomato. Isolation distances depend on the use and population.

https://seedalliance.org/publications/seed-saving-guide/

L1732 · D1043 Instituto Nacional de Semillas · Argentina Laboratorios de Análisis de Semillas Explains germinability, physical purity and other tests, and the scope of different laboratory certificates. Ask the laboratory how to submit the lot.

https://www.argentina.gob.ar/inase/laboratorios-de-analisis-de-semillas

L1733 · D1044 Organic Seed Alliance · United States Tomato Seed Production Guide Covers flower anatomy, cross-pollination, ripe fruit, temperature, fermentation, rinsing and drying. The seed producer must check the changing slurry during processing.

https://seedalliance.org/publications/tomato-seed-production-guide/

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NASA National Aeronautics and Space Administration · **INTA** Instituto Nacional de Tecnología Agropecuaria · **ISBN** International Standard Book Number

L1734 · D1045 INASE and Argentine public institutions · 12 September 2023 Inscribimos al Tomate Platense como Semilla Criolla Report from Berazategui on recognition of locally maintained populations, with grower participation. The photograph accompanies the report. In

https://www.argentina.gob.ar/node/397675

L1735 · D1046 Universidad Nacional de La Plata Investigadores y extensionistas en una cruzada por preservar la semilla del tomate platense The university describes a germplasm extension project operating since 2013 with growers, cooperatives, students and several univ

https://unlp.edu.ar/investigacion/la-unlp-en-una-cruzada-por-preservar-la-semilla-del-tomate-platense-14447-19447/

L1736 · D1047 INIA-CSIC · Centro Nacional de Recursos Fitogenéticos, Spain Conservación de recursos fitogenéticos The Spanish collection connects seed conditioning and conservation to germination testing, monitoring and regeneration decisions.

https://www.inia.es/investigacion/vegetal/Recursos%20fitogen%C3%A9ticos/Conservaci%C3%B3n%20de%20recursos%20fitogen%C3%A9ticos/Pages/Home.aspx

L1737 · D1048 Josef Schlaghecken · Wikimedia Commons Common bean pod opened to show the ripe seeds, 17 August 2014 Phaseolus vulgaris. CC BY-SA 4.0. Full frame and circular detail shown at reduced resolution. Photographer and licence apply to both presentations.

https://commons.wikimedia.org/wiki/File:Bohnen_H%C3%BClse_offen_mit_Samen-Josef_Schlaghecken.jpg

L1738 · D1049 INTA AMBA · 31 October 2024 Zanahorias: producirlas en el AMBA y con buenos rindes, es posible Gorina trial, named varieties, marketable yield and root length. The accompanying photograph shows harvested carrots. Individual photographer unlisted.

https://www.argentina.gob.ar/noticias/zanahorias-producirlas-en-el-amba-y-con-buenos-rindes-es-posible

L1739 · D1050 INTA · EEA Mendoza Riego en cultivos hortícolas: guía para la programación y planificación The published carrot irrigation example identifies crop density, assumed rooting depth and the Mendoza Aeropuerto weather station. These inputs belong to that calc

https://repositorio.inta.gob.ar/bitstream/handle/20.500.12123/19216/INTA_CRMendoza-SanJuan_EEAMendoza_Ferrari_F_Riego_cultivos_horticolas_guia_programacion_planificacion.pdf?isAllowed=y&sequence=3

L1740 · D1051 Instituto Nacional de Tecnología Agropecuaria · Argentina Comparing wheat varieties in the national trial network INTA describes the RET-INASE results viewer and how to compare cultivars by site, season and other trial conditions.

https://www.argentina.gob.ar/noticias/nueva-herramienta-interactiva-para-consultar-los-resultados-de-la-red-de-ensayos

L1741 · D1052 D. Gómez and colleagues · INTA Marcos Juárez, Córdoba Evaluación de cultivares de trigo pan en la EEA INTA Marcos Juárez 2025/26 report. The methods specify randomised complete blocks, three replicates and a 5 m^2 harvested unit at this site.

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INASE Instituto Nacional de Semillas · **BY-SA** Creative Commons Attribution-ShareAlike · **INTA** Instituto Nacional de Tecnología Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **EEA** Estación Experimental Agropecuaria · **=** equals · **RET-INASE** Red de Ensayos Comparativos de Cultivares de Trigo Pan, published through the Instituto Nacional de Semillas · **m^2** square metre, an area unit

https://repositorio.inta.gob.ar/bitstream/handle/20.500.12123/25851/INTA_CRCordoba_EEAMarcosJuarez_G%C3%B3mez_D_Evaluaci%C3%B3n_cultivares_trigo_pan.pdf?isAllowed=y&sequence=1

L1742 · D1053 University of Florida · IFAS Extension Adjusting Crop Yield to a Standard Moisture Content Wet-basis moisture is water mass divided by wet grain mass. Equal dry matter is the basis for converting a wet weight to a stated reference moisture.

https://ask.ifas.ufl.edu/publication/AG442

L1743 · D1054 Harry Grant Olds · reproduced from the Antorchas volume Vista campestre, cosecha de trigo en la provincia de Buenos Aires Historical photograph, Public Domain Mark. The current record estimates c. 1900 and earlier file notes say c. 1910. An early twentie

https://commons.wikimedia.org/wiki/File:HG_Olds_Vista_campestre_cosecha_trigo_pcia_Buenos_Aires.jpg

L1744 · D1055 Fundación Centro de Investigación Fotográfico Histórico Argentino Harry Grant Olds · archival authority record Archival context for the photographer's work in Argentina and the reconstruction of his archive. This record does not date the individual wheat

https://archivo.cifha.org.ar/index.php/harry-grant-olds

L1745 · D1057 Food and Agriculture Organization of the United Nations Genebank Standards for Plant Genetic Resources for Food and Agriculture Chapter 4 distinguishes drying, storage, viability monitoring, regeneration, documentation and safety duplication for orthodox

https://www.fao.org/4/i3394e/i3394e.pdf

L1746 · D1058 J. C. Gaviola · EEA La Consulta, INTA Rendimiento y calidad de semillas en cultivo de zanahoria implantado con mini raíces o cepellón A San Carlos, Mendoza, study of carrot seed production. The harvested product and the establishment method differ from a

https://repositorio.inta.gob.ar/xmlui/bitstream/handle/20.500.12123/4391/INTA_CRMendoza-SanJuan_EEALaConsulta_Gaviola_JC_Rendimiento_calidad_semillas_cultivo_zanahoria.pdf?isAllowed=y&sequence=1

L1747 · D1059 Carla Estefania Larrosa · INTA AER Río Gallegos Cría de gallinas ponedoras Santa Cruz leaflet. Perches, nests, egg collection and layer feed in cold regions. Its stage-specific figures are kept with their original context.

https://repositorio.inta.gob.ar/xmlui/bitstream/handle/20.500.12123/20686/INTA_CR%20Patagonia%20Sur_EEA%20Santa%20Cruz_%20LARROSA_C.%20E_%20Cria%20de%20gallinas%20ponedoras.pdf?isAllowed=y&sequence=1

L1748 · D1060 INTA AER Las Lomitas · 2 July 2024 Seguimiento a gallinas ponedoras Formosa field record for an educational flock of Negra and Rubia INTA birds. Records sample weighing, growth during heat and several simultaneous changes. Includes the flock photograph.

https://www.argentina.gob.ar/noticias/seguimiento-gallinas-ponedoras

L1749 · D1061 INTA El Colorado · 26 January 2026 Optimizan la eficiencia genética de ponedoras Negra INTA The Nilo Alberto Schaller multiplication centre reports the first locally produced parent stock for its Negra INTA layer programme. The hatchery photograph accomp

https://www.argentina.gob.ar/noticias/optimizan-la-eficiencia-genetica-de-ponedoras-negra-inta

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= equals · **IFAS** Institute of Food and Agricultural Sciences · **EEA** Estación Experimental Agropecuaria · **INTA** Instituto Nacional de Tecnología Agropecuaria · **AER** Agencia de Extensión Rural

L1750 · D1062 SENASA · Argentine animal health service · 2 June 2026 Prevención de la influenza aviar en aves de traspatio Official backyard-flock instructions on protected feed and water, restricted entry, unusual clinical signs and immediate notification through the

https://www.argentina.gob.ar/node/503333

L1751 · D1063 SENASA · Buenos Aires Province · 16 September 2026 Influenza aviar en aves de traspatio en Carlos Spegazzini A mortality report preceded official sampling of ducks and chickens and laboratory confirmation. The 3 km prevention area was a decision for that

https://www.argentina.gob.ar/noticias/buenos-aires-se-detecto-un-caso-de-influenza-aviar-en-aves-de-traspatio-en-carlos

L1752 · D1064 Instituto Nacional de Tecnología Agropecuaria · Pergamino Estación Experimental Agropecuaria Pergamino The station traces its experimental farm to 1912, including work on maize use for animals, and its transition into INTA in 1956.

https://www.argentina.gob.ar/inta/cr-buenosaires-norte/eea-pergamino

L1753 · D1065 Council of the European Union · consolidated text of 14 December 2019 Directive 1999/74/EC, laying hens, Articles 1 and 4 Article 1 defines the scope. Article 4 sets nest and perch provisions for alternative systems covered by the directive. The comparis

https://www.legislation.gov.uk/eudr/1999/74/pdfs/eudr_19990074_2019-12-14_en.pdf

L1754 · D1066 INTA AMBA · 21 May 2024 Compost: cómo transformar residuos orgánicos en abono Container access, drainage and aeration for the Buenos Aires metropolitan area. The report carries the photograph of hands holding dark, crumbly material.

https://www.argentina.gob.ar/noticias/compost-como-transformar-residuos-organicos-en-abono

L1755 · D1068 SENASA · 11 January 2019 Producción de compost a partir de residuos sólidos urbanos Contemporary account of Joint Resolution 1/2019, source-separated feedstocks, product registration and work that began in 2016. A dated institutional history.

https://www.argentina.gob.ar/noticias/produccion-de-compost-partir-de-residuos-solidos-urbanos

L1756 · D1069 INTA EEA Santa Cruz · soil sampling field leaflet Muestreo de suelos Composite sampling, separate depths, field identification and analysis. The pamphlet illustrates 20 subsamples and identifies electrical conductivity with its extraction method.

https://repositorio.inta.gob.ar/bitstream/handle/20.500.12123/12297/INTA_CRPatagoniaSur_EEASantaCruz_SANMARTINO_L_Muestreo_suelos.pdf?isAllowed=y&sequence=1

L1757 · D1070 I. Stantero and colleagues · INTA EEA Marcos Juárez, Córdoba Resultados de la Huerta Demostrativa EEA INTA Marcos Juárez The demonstration garden covers 1,600 m², including 26 beds of 1 × 15 m. The report describes the functions of the rest of the site a

https://www.argentina.gob.ar/sites/default/files/2024/08/inta_crcordoba_eeamarcosjuarez_stantero_i_resultados.pdf

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SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **km** kilometre, 1,000 metres · **INTA** Instituto Nacional de Tecnología Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **EEA** Estación Experimental Agropecuaria · **=** equals · **m²** square metre, an area unit · **m** metre, a length unit · **×** multiplied by

L1758 · D1071 INTA EEA El Colorado · Formosa · 14 August 2026 El Niño: claves para reducir los riesgos en la producción hortícola Local recommendations distinguish high, intermediate and low ground. Gives possible ridge heights in a heavy-rain scenario. Includes the p

https://www.argentina.gob.ar/noticias/el-nino-claves-para-reducir-los-riesgos-en-la-produccion-horticola

L1759 · D1072 French Ministry of Agriculture · 9 July 2019 Crop rotation on Prosper Cochet's holding in Loire-Atlantique The grower describes about twenty vegetables on one cropped hectare within a three-hectare rotation. First-person farm case with its own land and m

https://agriculture.gouv.fr/la-rotation-culturale-me-permet-de-cultiver-sans-traitement

L1760 · D1073 Instituto Nacional de Tecnología Agropecuaria · Argentina Planificá tu huerta The planting planner distinguishes crop group, sowing, transplanting, plant spacing and rows. Match recommendations to the named crop and regional growing window.

https://www.argentina.gob.ar/sites/default/files/2023/09/02inta_planifica_tu_huerta.pdf

L1761 · D1074 INTA San Pedro and Concordia Cómo diseñar la huerta para evitar estrés por calor o salinidad Observations from Buenos Aires and Entre Ríos on heat, soil cover and saline irrigation water. Supports checking water quality before attributing leaf symptoms t

https://www.argentina.gob.ar/noticias/como-disenar-la-huerta-para-evitar-estres-por-calor-o-salinidad

L1762 · D1075 INTA Las Breñas · Chaco · 27 October 2026 Casi 90 años mirando el cielo: la historia de la estación agrometeorológica de Las Breñas Measurements began in 1937. Reports different frost-free intervals at 5 cm and 1.5 m, and the addition of an automatic sta

https://www.argentina.gob.ar/noticias/casi-90-anos-mirando-el-cielo-la-historia-de-la-estacion-agrometeorologica-de-las-brenas

L1763 · D1077 NOAA National Centers for Environmental Information · United States When to Expect Your Last Spring Freeze The US map uses the 1991-2020 normals and a 32 °F threshold. Historical climate normals, exposure and an actual short-range forecast answer differe

https://www.ncei.noaa.gov/news/last-spring-freeze

L1764 · D1078 SENASA · Registro Nacional Sanitario de Productores Agropecuarios Inscribir o actualizar establecimientos en el RENSPA Official registration workflow for the producer and the establishment. Use alongside local siting, handling or selling requirements for

https://www.argentina.gob.ar/inscribir-reinscribir-en-el-registro-nacional-sanitario-de-productores-agropecuarios-renspa

L1765 · D1079 Cornell University · Cornell Composting Calculating the carbon-to-nitrogen ratio Shows how carbon, nitrogen, mass and moisture enter a mixed feedstock calculation. Bucket volumes alone cannot establish a chemical carbon-to-nitrogen ratio.

https://www.compost.css.cornell.edu/calc/cn_ratio.html

L1766 · D1080 Cornell University · Cornell Composting Moisture content on a wet-weight basis Defines water mass as a fraction of the wet mass. Use comparable samples and the laboratory's stated method before combining measurements or interpreting moisture.

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INTA Instituto Nacional de Tecnología Agropecuaria · **EEA** Estación Experimental Agropecuaria · **cm** centimetre, 0.01 metre · **m** metre, a length unit · **NOAA** National Oceanic and Atmospheric Administration · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

https://www.compost.css.cornell.edu/calc/moisture_content.html

L1767 · D1081 INTA · Instituto de Recursos Biológicos · 2019 Una colección que resguarda la biodiversidad vegetal de la Argentina Dates the first BAB collecting record to 1895 and formal opening to 1899. Includes a collection photograph and describes the purpose of re

https://www.argentina.gob.ar/node/150531

L1768 · D1082 Universidad Nacional de Córdoba · Museo Botánico Historia del Museo Botánico de Córdoba Records Lorentz, Hieronymus and the related sets in Göttingen and Córdoba. The museum links the collections with the work of August Grisebach.

https://museobotanico.unc.edu.ar/historia

L1769 · D1083 Smithsonian Institution · US National Herbarium · GBIF 1702813234 Geoffroea decorticans, US 3336871, sheet barcode 02444396 Fortunato, Elechosa and Mavrek 4743, 12 December 1994, Río Negro. Publisher-supplied specimen image is CC0.

https://www.gbif.org/occurrence/1702813234

L1770 · D1084 Missouri Botanical Garden · Tropicos · GBIF 4031657222 Geoffroea decorticans, MO 102098452, gathering 4743 Names, date, collector number and road junction agree with the Smithsonian record. This second catalogue entry supplies the comparison.

https://www.gbif.org/occurrence/4031657222

L1771 · D1085 Wellcome Collection · qmg2uf64 · 1652 Nicholas Culpeper, The English Physitian, London, P. Cole Digitised book and title leaf, canvas 11. The title supplies a short quotation in its printed context. Wellcome marks the scan as public domain.

https://wellcomecollection.org/works/qmg2uf64

L1772 · D1086 Wellcome Collection · print 2249i · 1652 Nicholas Culpeper, line engraving Catalogue, credit and public-domain designation for the separate engraved likeness.

https://wellcomecollection.org/works/n8m3czuc

L1773 · D1087 London Museum · Spitalfields Nicholas Culpeper and the public readership of herbal medicine Biographical setting, 1616-1654, English-language publishing and the relation between his practice and astrology.

https://www.londonmuseum.org.uk/collections/london-stories/nicholas-culpeper-pioneer-holistic-medicine/

L1774 · D1088 Administración de Parques Nacionales · Argentina Gestión de Permisos de Investigación, GEPIN Official procedure for scientific projects in APN jurisdictions. Requirements depend on the activity, area and authorised collection or movement.

https://sib.gob.ar/institucional/permisos-de-investigacion

L1775 · D1089 University of Florida Herbarium · FLAS Preparation of plant specimens for deposit as herbarium vouchers Field preparation, permits and arrangements for deposit, reproductive material, labelling, press assembly and arrangement.

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INTA Instituto Nacional de Tecnología Agropecuaria · **US** United States · **GBIF** Global Biodiversity Information Facility · **CC0** Creative Commons Zero, a public-domain dedication tool

https://www.floridamuseum.ufl.edu/herbarium/methods/vouchers/

L1776 · D1091 Royal Horticultural Society · herbarium guide Create a herbarium step by step Calls for inspection after 24 hours, replacement of damp material and regular checks. The actual drying interval varies.

https://www.rhs.org.uk/get-involved/grow-with-it/pdfs/creating-a-herbarium-step-by-step-guide.pdf

L1777 · D1093 University of Florida Herbarium · FLAS Collection acquisition checklist for collectors Receiving institution requests advance contact, permit records, labels and organised sets. FLAS arranges its own accession and duplicate distribution.

https://www.floridamuseum.ufl.edu/herbarium/policies/collection-acquisitions/checklist/

L1778 · D1094 Instituto de Botánica Darwinion · Flora del Cono Sur Geoffroea decorticans, taxon 9564 Leaflet and fruit ranges, synonymy and Argentine collections. Includes Hurrell 4914 from Zárate and Ferrucci 824 from Córdoba.

https://app.floraargentina.edu.ar/new-app/cono-sur/especie.php?id=9564&origen=externo

L1779 · D1095 Royal Botanic Gardens, Kew · GBIF 4954089578 Geoffroea decorticans, Ferrucci 824, K003030935 Voucher collected at Parque Francisco Tau, Bell Ville, on 13 October 1992. Digital specimen image credited to Kew under CC BY 4.0.

https://www.gbif.org/occurrence/4954089578

L1780 · D1097 Ente BioCórdoba · Municipalidad de Córdoba · 20 September 2023 El Chañar Abuelo de la Reserva Natural Urbana General San Martín Reports the heritage designation, a university age estimate and a separate ranger estimate. Neither gives an exact germination

https://biocordoba.cordoba.gob.ar/en-la-reserva-natural-urbana-general-san-martin-existe-el-chanar-mas-longevo-de-la-ciudad-de-cordoba/

L1781 · D1098 Germán G. Figueroa and Mariana Dantas · La Zaranda de Ideas · 2006 Recolección, procesamiento y consumo de frutos silvestres en el noroeste semiárido argentino Fieldwork during the 2005-06 harvest in Santiago del Estero and Catamarca. Treats contemporary

https://plarci.org/index.php/lazarandadeideas/article/view/611

L1782 · D1099 ANMAT and Secretaría de Agricultura · Boletín Oficial · 18 November 2025 Resolución Conjunta 11/2025, articles 3 to 5 Defines whole-fruit flour, pulp flour and arrope in the Argentine Food Code. Gives analytical limits for flour and naming rules for frui

https://www.boletinoficial.gob.ar/detalleAviso/primera/334686/20251118

L1783 · D1100 ANMAT · Argentina · Disposición 5418/2015 Medicamentos herbarios y medicamentos herbarios de uso tradicional Documents distinct regulatory classifications and the information submitted for a product, formulation, indication and route.

https://www.argentina.gob.ar/normativa/nacional/disposici%C3%B3n-5418-2015-249127/texto

L1784 · D1101 European Commission · Public Health Herbal medicinal products and traditional-use registration European comparison of the traditional-use and well-established-use routes, including the duration of prior medicinal use.

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https://health.ec.europa.eu/medicinal-products/product-types/herbal-medicinal-products_en

L1785 · D1102 US National Center for Complementary and Integrative Health Herb-drug interactions, clinical digest Distinguishes evidence types and describes clinically important interactions for some plant preparations, including St John's wort.

https://www.nccih.nih.gov/health/providers/digest/herb-drug-interactions-science

L1786 · D1103 Field Museum Library · lantern slide CSB4342c Botanist collecting and pressing plants, Armour expedition, 1899 Museum-supplied description identifies Jamaica and a hand-coloured lantern slide. The identification of the person is qualified in the catalogu

https://commons.wikimedia.org/wiki/File:Botanist_collecting_and_pressing_plants_(3796303642).jpg

L1787 · D1104 Dick Culbert · photograph · 10 April 2009 Geoffraea decorticans, bark, original photograph Photographer identifies peeling chañar bark. Credit under CC BY 2.0. The caption supplies no location for the pictured tree.

https://commons.wikimedia.org/wiki/File:Geoffraea_decorticans,_bark_(8433332415).jpg

L1788 · D1106 Universidad Nacional de Córdoba · Museo Botánico Protocolo de colecciones del Herbario CORD Describes access to the public research collection and directs applicants to the institution's collection protocol.

https://museobotanico.unc.edu.ar/protocolo-de-colecciones

L1789 · D1108 Matt Lavin · Bozeman, Montana · 2 June 2003 Flowering racemes, Prunus virginiana, photograph 5069287191 The photographer identifies the elongated flowering clusters. CC BY-SA 2.0. A circular detail and an uncropped view appear in this section.

https://commons.wikimedia.org/wiki/File:Prunus_virginiana_(5069287191).jpg

L1790 · D1110 US National Park Service · Wind Cave National Park Chokecherry, fruit and leaves, NPS photograph The archived NPS credit accompanies this US federal public-domain image. The Commons upload date is separate from the unknown exposure date.

https://commons.wikimedia.org/wiki/File:Prunus_virginiana.jpg

L1791 · D1111 University of Nebraska-Lincoln · expedition journal, 29 May 1806 Meriwether Lewis, journal entry and botanical observations Transcription and editorial notes. Lewis records the onset of bloom and distinguishes the shared flower stalk from the individual

https://lewisandclarkjournals.unl.edu/item/lc.jrn.1806-05-29

L1792 · D1112 Ruelle and collaborators · GeoHealth · 2022 Ecological Calendars, Food Sovereignty, and Climate Adaptation in Standing Rock Original participatory research. Chokecherry was recorded in the ecological calendars of all seven participating Standing Rock com

https://doi.org/10.1029/2022GH000621

L1793 · D1113 François-André Michaux · The North American Sylva · 1819 Plate 88, Wild Cherry, engraved after P. Bessa Historical caption Cerasus virginiana. Catalogue credits P. Bessa and the engraver Gabriel. Public-domain plate, used as evidence of historical illust

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https://commons.wikimedia.org/wiki/File:NAS-088_Prunus_virginiana.png

L1794 · D1114 New York Public Library · Digital Collections Wild Cherry (Cerasus virginiana), collection object Independent collection record for the printed subject and the work of Michaux. The historical label is transcribed separately from a modern field identifica

https://digitalcollections.nypl.org/items/510d47e0-08a2-a3d9-e040-e00a18064a99

L1795 · D1115 Instituto Nacional de Tecnología Agropecuaria · Argentina · 2024 Cerezas patagónicas, un impulso a los saberes locales INTA describes frost, export volumes, local experience and pollination work at Los Antiguos, Santa Cruz. Its accompanying photograph de

https://www.argentina.gob.ar/node/413598

L1796 · D1116 Argentina · Secretaría de Agricultura, Ganadería y Pesca · 2025 Resolución 49/2025, Cereza del Valle de Los Antiguos - Patagonia Formal recognition of the designation of origin. Its geographical scope and production protocol belong to the named Argentine

https://www.argentina.gob.ar/normativa/nacional/resoluci%C3%B3n-49-2025-411484/texto

L1797 · D1122 US Food and Drug Administration Refrigerator thermometers, cold facts about food safety Appliance thermometer and 0 °F freezer target. Supply the measured value and time when reporting a temperature excursion.

https://www.fda.gov/food/buy-store-serve-safe-food/refrigerator-thermometers-cold-facts-about-food-safety

L1798 · Open the source

https://www.ers.usda.gov/topics/crops/vegetables-and-pulses

L1799 · Open the source

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L1804 · Open the source

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L1808 · Open the source

https://portal.azores.gov.pt/en/web/iama/-/ananas-dos-acores-sao-miguel-dop

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https://www.cdc.gov/liver-flukes/hcp/clinical-overview-fasciola/index.html

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https://www.thehenryford.org/collections/explore/artifact/3252

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L1840 · Marie Curie American Institute of Physics

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L1841 · Yvette Cauchois Royal Society of Chemistry · astatine

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L1842 · Harriet Brooks Government of Canada · Harriet Brooks

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L1843 · Darleane Hoffman University of California, Berkeley · fermium

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https://periodic-table.rsc.org/element/87/francium

L1845 · Clarice Phelps Oak Ridge National Laboratory · target preparation

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L1846 · Dawn Shaughnessy Lawrence Livermore National Laboratory

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L1875 · Jamain

https://commons.wikimedia.org/wiki/File:Artichoke_J1.jpg

L1876 · Botanical record

https://plants.ces.ncsu.edu/plants/cynara-cardunculus/

L1877 · Joydeep

https://commons.wikimedia.org/wiki/File:Solanum_melongena_24_08_2012_(1).JPG

L1878 · Botanical record

https://plants.ces.ncsu.edu/plants/solanum-melongena/

L1879 · B.navez

https://commons.wikimedia.org/wiki/File:Persea_americana_fruit_2.JPG

L1880 · Botanical record

https://plants.ces.ncsu.edu/plants/persea-americana/

L1881 · Joseph Pohl

https://commons.wikimedia.org/wiki/File:Vigna_subterranea.jpg

L1882 · Crop Trust

https://commons.wikimedia.org/wiki/File:Freshly_collected_Bambara_groundnut_accessions_in_Tanzania.jpg

L1883 · Botanical record

https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:525534-1

L1884 · TimothyPilgrim

https://commons.wikimedia.org/wiki/File:Bananavarieties.jpg

L1885 · Botanical record

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L1886 · BriannaWalther

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L1887 · Botanical record

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L1888 · Hans Hillewaert

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L1889 · Botanical record

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L1890 · Alabama Extension

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L1891 · Botanical record

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https://plants.ces.ncsu.edu/plants/daucus-carota/

L1893 · David Monniaux

https://commons.wikimedia.org/wiki/File:Manihot_esculenta_dsc07325.jpg

L1894 · Amada44

https://commons.wikimedia.org/wiki/File:Manihot_esculenta_-_cross_section_2.jpg

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L1896 · Botanical record

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L1897 · Neelix at English Wikipedia

https://commons.wikimedia.org/wiki/File:Chard_(Beta_vulgaris_var_cicla).jpg

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L1899 · Roger Culos

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L1900 · Botanical record

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L1901 · Franz Eugen Köhler

https://commons.wikimedia.org/wiki/File:Cocos_nucifera_-_K%C3%B6hler%E2%80%93s_Medizinal-Pflanzen-187.jpg

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L1903 · HeraldDesa at English Wikipedia

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L1904 · Botanical record

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L1905 · Walther Otto Müller

https://commons.wikimedia.org/wiki/File:Taraxacum_officinale_-_K%C3%B6hler%E2%80%93s_Medizinal-Pflanzen-135.jpg

L1906 · Nepenthes

https://commons.wikimedia.org/wiki/File:Dates005.jpg

L1907 · Botanical record

https://powo.science.kew.org/results?q=Phoenix%20dactylifera

L1908 · Tammy Green (Zesmerelda)

https://commons.wikimedia.org/wiki/File:Edamame_by_Zesmerelda_in_Chicago.jpg

L1909 · Botanical record

https://plants.ces.ncsu.edu/plants/glycine-max/

L1910 · Ton Rulkens from Mozambique

https://commons.wikimedia.org/wiki/File:Ensete_(4731675777).jpg

L1911 · Italian boy

https://commons.wikimedia.org/wiki/File:WomanEnset.jpg

L1912 · Botanical record

https://powo.science.kew.org/results?q=Ensete%20ventricosum

L1913 · Historical botanical plate

https://commons.wikimedia.org/wiki/File:Illustration_Vicia_faba1.jpg

L1914 · Botanical record

https://plants.ces.ncsu.edu/plants/vicia-faba/

L1915 · Didier Descouens

https://commons.wikimedia.org/wiki/File:Acca_sellowiana_Fruit_MHNT_Fronton.jpg

L1916 · Botanical record

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L1917 · Trew, C.J

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L1919 · J. Wilson, USDA Agricultural Research Service

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L1920 · Gaurav Dhwaj Khadka

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L1921 · Botanical record

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L1922 · Botanical record

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L1923 · zebedeugalinha

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L1924 · BerndtF

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L1925 · Botanical record

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L1926 · AlbeitPK

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L1927 · Rodrigo.Argenton

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L1929 · Ivar Leidus

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L1930 · Botanical record

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L1932 · Botanical record

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L1933 · Rasbak 13:13, 20 May 2007 (UTC)

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USDA United States Department of Agriculture · **=** equals · **UTC** Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event

L1934 · Botanical record

https://powo.science.kew.org/results?q=Lactuca%20sativa

L1935 · Walther Otto Müller

https://commons.wikimedia.org/wiki/File:Brassica_juncea_-_K%C3%B6hler%E2%80%93s_Medizinal-Pflanzen-168.jpg

L1936 · Botanical record

https://powo.science.kew.org/results?q=Brassica%20juncea

L1937 · Tushar Hossain

https://commons.wikimedia.org/wiki/File:The_jackfruit_is_holding_on_to_the_tree.jpg

L1938 · Botanical record

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L1939 · H2ase

https://commons.wikimedia.org/wiki/File:Topinambur_H2ase1.jpg

L1940 · Botanical record

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L1941 · Francisco Manuel Blanco (O.S.A.)

https://commons.wikimedia.org/wiki/File:Pachyrhizus_erosus_Blanco2.249.png

L1942 · Botanical record

https://powo.science.kew.org/results?q=Pachyrhizus%20erosus

L1943 · Rasbak

https://commons.wikimedia.org/wiki/File:Boerenkool.jpg

L1944 · Botanical record

https://powo.science.kew.org/results?q=Brassica%20oleracea

L1945 · Luis Miguel Bugallo Sánchez (Lmbuga)

https://commons.wikimedia.org/wiki/File:Kiwis_006eue.jpg

L1946 · Botanical record

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L1947 · Tubifex

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L1948 · Crops for the Future

https://commons.wikimedia.org/wiki/File:Amaranthus_kiwicha.jpg

L1949 · Botanical record

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L1950 · Amada44

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L1951 · Botanical record

https://plants.ces.ncsu.edu/plants/allium-ampeloprasum/

L1952 · Elena Chochkova

https://commons.wikimedia.org/wiki/File:P1030323.JPG

L1953 · Botanical record

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L1954 · User:Justinc

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L1955 · Botanical record

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L1956 · Botanical record

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L1957 · Ivar Leidus

https://commons.wikimedia.org/wiki/File:Mangos_-_single_and_halved.jpg

L1958 · Botanical record

https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:69913-1

L1959 · Ivar Leidus

https://commons.wikimedia.org/wiki/File:Mung_beans_(Vigna_radiata).jpg

L1960 · Botanical record

https://powo.science.kew.org/results?q=Vigna%20radiata

L1961 · Fibonacci

https://commons.wikimedia.org/wiki/File:Lulo.jpg

L1962 · Botanical record

https://powo.science.kew.org/results?q=Solanum%20quitoense

L1963 · Mason Brock (Masebrock)

https://commons.wikimedia.org/wiki/File:Tetragonia_tetragonioides.jpg

L1964 · Botanical record

https://powo.science.kew.org/results?q=Tetragonia%20tetragonioides

L1965 · YG01

https://commons.wikimedia.org/wiki/File:Dikenli_%C4%B0ncir_(Opuntia_ficus-indica)_Gaziantep_Turkey.IMG_1104.jpg

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https://powo.science.kew.org/results?q=Opuntia%20ficus-indica

L1967 · Christian Fischer

https://commons.wikimedia.org/wiki/File:AvenaSativa3.jpg

L1968 · Acsenray

https://commons.wikimedia.org/wiki/File:Cooked_oat_groats.jpg

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L1970 · Botanical record

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L1971 · fr:Utilisateur:Jonathaneo

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L1972 · Botanical record

https://powo.science.kew.org/results?q=Oxalis%20tuberosa

L1973 · Earth100

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L1974 · Botanical record

https://plants.ces.ncsu.edu/plants/abelmoschus-esculentus/

L1975 · Botanical record

https://plants.ces.ncsu.edu/plants/olea-europaea/

L1976 · Colin

https://commons.wikimedia.org/wiki/File:Mixed_onions.jpg

L1977 · Botanical record

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L1979 · Goldlocki

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L1983 · Botanical record

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L1984 · Scott Bauer, USDA ARS

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L1986 · Pancrace Bessa

https://commons.wikimedia.org/wiki/File:Pancrace_Bessa00.jpg

L1987 · Botanical record

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L1989 · Self, en:User:Jengod

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L1992 · Augustus Binu : flickr : Instagram

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L1995 · Pethan (catalogue attribution)

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L1996 · Maheder

https://commons.wikimedia.org/wiki/File:Mashella_ena_Teff.JPG

L1997 · Botanical record

https://powo.science.kew.org/results?q=Sorghum%20bicolor

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USDA United States Department of Agriculture · **ARS** Argentine peso · **=** equals · **IRRI** International Rice Research Institute

L1998 · Rasbak

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L1999 · Botanical record

https://powo.science.kew.org/results?q=Spinacia%20oleracea

L2000 · Ivar Leidus

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L2013 · Botanical record

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L2014 · William Jackson Hooker

https://commons.wikimedia.org/wiki/File:Ullucus_tuberosus.jpg

L2015 · Landcuo

https://commons.wikimedia.org/wiki/File:Papalisa.jpg

L2016 · Botanical record

https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:167633-1

L2017 · Botanical record

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L2018 · Franz Eugen Köhler, Köhler's Medizinal-Pflanzen

https://commons.wikimedia.org/wiki/File:Vanilla_planifolia_-_K%C3%B6hler%E2%80%93s_Medizinal-Pflanzen-278.jpg

L2019 · B.navez

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L2020 · Botanical record

https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:262578-2

L2021 · Masparasol

https://commons.wikimedia.org/wiki/File:Watercress_(2).JPG

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https://plants.ces.ncsu.edu/plants/nasturtium-officinale/

L2024 · Fred Hsu

https://commons.wikimedia.org/wiki/File:Taiwan_2009_Tainan_City_Organic_Farm_Watermelon_FRD_7962.jpg

L2025 · Botanical record

https://plants.ces.ncsu.edu/plants/citrullus-lanatus/

L2026 · INRA DIST from France

https://commons.wikimedia.org/wiki/File:Bl%C3%A9_tendre_(GRAPELLI)_AO-5-cliche_Jean_Weber_(5)_(23975019962).jpg

L2027 · Roger Culos

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L2028 · Botanical record

https://plants.ces.ncsu.edu/plants/triticum-aestivum/

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L2029 · Obsidian Soul

https://commons.wikimedia.org/wiki/File:Xanthosoma_sagittifolium_in_Bukidnon,_Philippines_02.jpg

L2030 · sarang

https://commons.wikimedia.org/wiki/File:Root_vegetables_from_Cuba.jpg

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L2032 · Oscar Alejandro Morales Juárez

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L2043 · Evan-Amos

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L2044 · Botanical record

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JPG JPEG image filename extension · **USDA** United States Department of Agriculture · **US** United States

L2045 · Forest and Kim Starr

https://commons.wikimedia.org/wiki/File:Starr-081111-0455-Macadamia_integrifolia-different_stages-Makawao-Maui_(24299912723).jpg

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L2048 · Renee Comet, National Cancer Institute

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L2049 · Eurico Zimbres

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L2052 · B.navez

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L2054 · spurekar

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L2059 · Sanjay Acharya

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L2061 · George Chernilevsky

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L2063 · Keith Weller

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INTI Instituto Nacional de Tecnología Industrial · **INM** Instituto Nacional de Metrología, Colombia · **Ω** ohm, electrical resistance · **W** watt, power · **%** percent, parts per hundred · **s** second, a time unit

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USA United States of America · **INFOR** Instituto Forestal · **USDA** United States Department of Agriculture · **=** equals

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mm millimetre, 0.001 metre · **USA-NPN** USA National Phenology Network · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service

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ON THIS PAGE

NIST National Institute of Standards and Technology · **INTI** Instituto Nacional de Tecnología Industrial · **CIRSOC** Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles · **US** United States · **UNLP** Universidad Nacional de La Plata

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NCCIH National Center for Complementary and Integrative Health · = equals · **NIST** National Institute of Standards and Technology

L2312 · Royal Society: Thomas Young, life dates

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Repeated notes and definitions are printed once. Page lists identify their reading locations; the complete relocation ledger is included in the recovery records. Superseded navigation-button labels are retained in that ledger rather than repeated here.

Historical image source

A3: Paper measuring 297 × 420 mm.

A4: Paper measuring 210 × 297 mm.

ARS: Argentine peso.

USD: United States dollar.

EUR: Euro.

Datum: A stated reference point or level from which measurements are taken.

Zaguán: An entrance passage connecting the street entrance with the interior of a house.

Runoff factor: The assumed fraction of rainfall on a stated area that reaches the collection point.

Courtyard study Shared services Vitruvius Interactive Library

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HVAC: Heating, ventilation and air conditioning.

ON THIS PAGE

= equals · **NIST** National Institute of Standards and Technology · **mm** millimetre, 0.001 metre · **×** multiplied by

Riser: A vertical service route connecting levels.

Branch: A connection from a shared route to a particular fixture or space.

Sanitary stack: A vertical wastewater pipe; its venting arrangement must be identified separately.

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BCE: Before the Common Era.

Atrium: A principal interior space of a Roman house; its roof arrangement varied.

Compluvium: The roof opening associated with the rain-receiving arrangement described here.

Impluvium: The shallow receiving basin below the opening.

Tetrastyle: Having four columns or supports in the arrangement described.

Peristyle: A court or space surrounded by a colonnade.

Cistern: A storage structure for water; its access, inlet, outlet and overflow need separate identification.

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Evidence and image records Book I Continue

TERMS ON THIS PAGE RSI : R-value in the International System of Units (metric thermal resistance) Measures how strongly a layer or whole assembly slows heat flow, in square metres kelvin per watt. A larger value means less heat crosses the same area at the same temperature difference.

m^2 : Square metre The area of a square with sides one metre long.

K : Kelvin The unit of thermodynamic temperature. A temperature difference of one kelvin has the same size as one degree Celsius. W : Watt The unit of power. One watt equals one joule of energy transferred per second.

h : Hour A unit of time equal to sixty minutes. ΔT : Temperature difference Delta means a change or difference. In this calculation ΔT is the indoor-to-outdoor temperature difference, measured in kelvins.

TERMS ON THIS PAGE NIST : National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

TERMS ON THIS PAGE NIST : National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references. Make a small repeatable audit kit

TERMS ON THIS PAGE m : Metre The base unit of length in the International System of Units.

TERMS ON THIS PAGE mm : Millimetre A unit of length equal to one thousandth of a metre.

TERMS ON THIS PAGE ID : Identifier or identification A label that distinguishes one record, object or sample from another.

TERMS ON THIS PAGE cm : Centimetre A unit of length equal to one hundredth of a metre.

ON THIS PAGE

RSI Metric thermal resistance, measured in square metres kelvin per watt · **m^2** square metre, an area unit

mAh : Milliampere-hour A unit of electric charge equal to one thousandth of an ampere-hour. USB : Universal Serial Bus A standard family of connections used to carry data or power between devices.

LED : Light-emitting diode An electronic component that emits light when electric current passes in its conducting direction. W : Watt The unit of power. One watt equals one joule of energy transferred per second.

V : Volt The unit of electric potential difference.

TERMS ON THIS PAGE CO : Carbon monoxide A poisonous gas produced by incomplete combustion. Its chemical formula identifies one carbon atom and one oxygen atom.

LED : Light-emitting diode An electronic component that emits light when electric current passes in its conducting direction.

USB : Universal Serial Bus A standard family of connections used to carry data or power between devices.

m : Metre The base unit of length in the International System of Units. W : Watt The unit of power. One watt equals one joule of energy transferred per second. h : Hour A unit of time equal to sixty minutes.

source record: 1205

TERMS ON THIS PAGE SMN : Servicio Meteorológico Nacional Argentina's national weather service.

m : Metre The base unit of length in the International System of Units. L : Litre One cubic decimetre of volume, or one thousand millilitres.

TERMS ON THIS PAGE mm: Millimetre A unit of length equal to one thousandth of a metre.

m^2: Square metre The area of a square with sides one metre long.

ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. USD, United States dollar The currency used for a price or conversion. One dollar

m: Metre

TERMS ON THIS PAGE L : Litre One cubic decimetre of volume, or one thousand millilitres.

TERMS ON THIS PAGE mL : Millilitre One thousandth of a litre, a unit of volume.

ARS : Argentine peso The currency in which the local price, quote or exchange rate is recorded.

USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

USD: BNA, 4 Nov 2026, ARS 1,570/USD. Fees and delivery excluded.

L : Litre One cubic decimetre of volume, or one thousand millilitres.

TERMS ON THIS PAGE kg : Kilogram A unit of mass equal to one thousand grams.

TERMS ON THIS PAGE CABA : Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area.

m : Metre The base unit of length in the International System of Units.

ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

ON THIS PAGE

USB Universal Serial Bus, the wired interface used for data and device power · **m^2** square metre, an area unit · **USD** United States dollar · **BNA** Banco de la Nación Argentina · **ARS** Argentine peso

USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE ARS : Argentine peso The currency in which the local price, quote or exchange rate is recorded.

kg : Kilogram A unit of mass equal to one thousand grams.

L : Litre One cubic decimetre of volume, or one thousand millilitres. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. BNA : Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation.

m : Metre The base unit of length in the International System of Units. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

A : Ampere The unit of electric current. One ampere transfers one coulomb of charge per second. W : Watt The unit of power. One watt equals one joule of energy transferred per second. m : Metre The base unit of length in the International System of Units.

h : Hour A unit of time equal to sixty minutes.

USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. USB, Universal Serial Bus A standard family of connections used to carry data or power between devices.

mAh, Milliampere-hour A unit of electric charge equal to one thousandth of an ampere-hour. CO, Carbon monoxide A poisonous gas produced by incomplete combustion. Its chemical formula identifies one carbon atom and one oxygen atom.

V: Volt The unit of electric potential difference.

A, Ampere The unit of electric current. One ampere transfers one coulomb of charge per second. W, Watt

TERMS ON THIS PAGE CDC : Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

mm : Millimetre A unit of length equal to one thousandth of a metre.

TERMS ON THIS PAGE m^2 : Square metre The area of a square with sides one metre long.

CAA : Código Alimentario Argentino The Argentine Food Code cited for national food or drinking-water provisions. L : Litre One cubic decimetre of volume, or one thousand millilitres.

g : Gram A unit of mass equal to one thousandth of a kilogram. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

ON THIS PAGE

USB Universal Serial Bus, the wired interface used for data and device power · **m^2** square metre, an area unit · **CAA** Código Alimentario Argentino, the Argentine Food Code

USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. US, United States of America Identifies the country or jurisdiction of the source, price or institution.

m: Metre The base unit of length in the International System of Units.

L, Litre One cubic decimetre of volume, or one thousand millilitres. D + number, Book evidence record The number identifies a source entry in the book's

TERMS ON THIS PAGE USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and

TERMS ON THIS PAGE D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

US : United States of America Identifies the country or jurisdiction of the source, price or institution.

TERMS ON THIS PAGE FEMA : Federal Emergency Management Agency The United States agency that provides the cited emergency-preparedness guidance.

W : Watt The unit of power. One watt equals one joule of energy transferred per second.

TERMS ON THIS PAGE Ah : Ampere-hour A unit of electric charge. A current of one ampere for one hour transfers one ampere-hour.

Evidence and image records Book II Continue

INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

US : United States of America Identifies the country or jurisdiction of the source, price or institution. m : Metre The base unit of length in the International System of Units. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

ARS : Argentine peso The currency in which the local price, quote or exchange rate is recorded. USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

ARGENTINA: TRACE PURCHASES AS WELL AS HARVEST Nave 2 at Mercado Central, Tapiales, photographed by Gervacio Rosales in 2013 [D703]. Record the seller, receipt, actual quantity, pack unit and delivered ARS cost. The market's dated wholesale reports are comparison evidence, not your household's final price [D702]. Keep purchased food separate from garden output.

g : Gram A unit of mass equal to one thousandth of a kilogram.

INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. SMN : Servicio Meteorológico Nacional Argentina's national weather service. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE US : United States of America Identifies the country or jurisdiction of the source, price or institution.

EU : European Union The political and economic union responsible for the European reference or rule cited.

ON THIS PAGE

ARS Argentine peso

ARS : Argentine peso The currency in which the local price, quote or exchange rate is recorded. ANMAT : Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology.

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m : Metre The base unit of length in the International System of Units. L : Litre One cubic decimetre of volume, or one thousand millilitres. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

USD: United States dollar The currency used for a price or conversion. One dollar

US : United States of America Identifies the country or jurisdiction of the source, price or institution. m : Metre The base unit of length in the International System of Units.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. m, Metre

TERMS ON THIS PAGE CC BY-SA / BY-SA : Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

TERMS ON THIS PAGE INASE : Instituto Nacional de Semillas Argentina's national seed institute, responsible for seed and cultivar records.

TERMS ON THIS PAGE INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

US : United States of America Identifies the country or jurisdiction of the source, price or institution. EEAOC : Estación Experimental Agroindustrial Obispo Colombres The agroindustrial experiment station in Tucumán, Argentina.

TERMS ON THIS PAGE UC : University of California The university system whose researchers or extension offices are cited.

TERMS ON THIS PAGE USDA : United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

ha : Hectare A unit of area equal to 10,000 square metres.

MO : Modal price (precio modal) The wholesale market's representative price column, printed alongside the minimum and maximum for the specified grade and packaging.

ARS : Argentine peso The currency in which the local price, quote or exchange rate is recorded. IVA : Impuesto al valor agregado Argentine value-added tax. A listed price may include it or show it separately.

USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. BNA : Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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MO Modal price, precio modal in the market table · **CC0** Creative Commons Zero, a public-domain dedication tool

TERMS ON THIS PAGE SENASA : Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

USDA : United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

TERMS ON THIS PAGE h : Hour A unit of time equal to sixty minutes.

cm : Centimetre A unit of length equal to one hundredth of a metre.

cm : Centimetre A unit of length equal to one hundredth of a metre. m : Metre The base unit of length in the International System of Units. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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CIRSOC : Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles The Argentine body associated with national structural safety regulations.

INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. m : Metre The base unit of length in the International System of Units. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE m^2 / m2 : Square metre The area of a square with sides one metre long.

TERMS ON THIS PAGE ha : Hectare A unit of area equal to 10,000 square metres.

INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. CC BY-SA : Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

TERMS ON THIS PAGE IGN : Instituto Geográfico Nacional Argentina's national mapping agency and the source for the cartographic or survey reference.

TERMS ON THIS PAGE BPA : Buenas Prácticas Agrícolas Good agricultural practices. In the Argentine farming context these are measures for producing and handling crops responsibly.

EU : European Union The political and economic union responsible for the European reference or rule cited. CABA : Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area.

USDA : United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here. US : United States of America Identifies the country or jurisdiction of the source, price or institution. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE PN10 : Nominal pressure designation, PN 10 The pipe or fitting's nominal pressure class. Actual service limits depend on material and operating conditions.

TERMS ON THIS PAGE UV : Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light.

ON THIS PAGE

m^2 square metre, an area unit · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute

TERMS ON THIS PAGE m³ : Cubic metre The volume of a cube with edges one metre long. It holds one thousand litres.

ha : Hectare A unit of area equal to 10,000 square metres. INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

NRCS : Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE RNE : Registro Nacional de Establecimientos The Argentine food-establishment registration identifying an authorised production establishment.

ANMAT : Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE NCHFP : National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

kg : Kilogram A unit of mass equal to one thousand grams. g : Gram A unit of mass equal to one thousandth of a kilogram. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

mL : Millilitre One thousandth of a litre, a unit of volume.

TERMS ON THIS PAGE FGHF200B-M : Gafa freezer model designation The letter-number marking identifies a product family or variant. Use the specific model's operating manual.

USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. L : Litre One cubic decimetre of volume, or one thousand millilitres. V : Volt The unit of electric potential difference.

TERMS ON THIS PAGE FDA: Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

EU : European Union The political and economic union responsible for the European reference or rule cited. NCHFP : National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

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US : United States of America Identifies the country or jurisdiction of the source, price or institution. EU : European Union The political and economic union responsible for the European reference or rule cited. m : Metre The base unit of length in the International System of Units.

NRCS : Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information.

ON THIS PAGE

m³ cubic metre, a volume unit · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **BY** Attribution condition in a Creative Commons licence

TERMS ON THIS PAGE NRCS : Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information.

TERMS ON THIS PAGE UK : United Kingdom Identifies the country of the source, guidance or institution.

RHS : Royal Horticultural Society The British horticultural organisation credited with the plant-growing guidance.

EU : European Union The political and economic union responsible for the European reference or rule cited. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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DC : Line segment DC The letters name the two endpoints on the rectangular layout. A diagonal joins opposite corners. BC : Line segment BC The letters name the two endpoints on the rectangular layout. A diagonal joins opposite corners.

AC : Line segment AC The letters name the two endpoints on the rectangular layout. A diagonal joins opposite corners.

m : Metre The base unit of length in the International System of Units. AB : Line segment AB The letters name the two endpoints on the rectangular layout. A diagonal joins opposite corners.

TERMS ON THIS PAGE RENSPA : Registro Nacional Sanitario de Productores Agropecuarios Argentina's register that identifies agricultural producers and their production sites for sanitary oversight.

DM : Dry matter The mass left after water is excluded, used here to compare amounts of animal feed.

EU : European Union The political and economic union responsible for the European reference or rule cited. EC : European Community The suffix identifies the European Community legal instrument in the directive number.

cm : Centimetre A unit of length equal to one hundredth of a metre. UK : United Kingdom Identifies the country of the source, guidance or institution. L : Litre One cubic decimetre of volume, or one thousand millilitres. m : Metre The base unit of length in the International System of Units.

TERMS ON THIS PAGE m^2: Square metre The area of a square with sides one metre long.

mm: Millimetre A unit of length equal to one thousandth of a metre.

cm, Centimetre A unit of length equal to one hundredth of a metre. UK, United Kingdom Identifies the country of the source, gui L: Litre

m^2 : Square metre The area of a square with sides one metre long. ha : Hectare A unit of area equal to 10,000 square metres. g : Gram A unit of mass equal to one thousandth of a kilogram. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

ON THIS PAGE

DC Direct current · **AC** Alternating current · **EC** European Community, in this legal citation · **m^2** square metre, an area unit

TERMS ON THIS PAGE EU : European Union The political and economic union responsible for the European reference or rule cited.

INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. SENASA : Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. g : Gram A unit of mass equal to one thousandth of a kilogram. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

US : United States of America Identifies the country or jurisdiction of the source, price or institution. ID : Identifier or identification A label that distinguishes one record, object or sample from another. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

SDA: United States Department of Agriculture he federal department responsible for the agricultural, food and research

TERMS ON THIS PAGE ANMAT : Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology.

kg : Kilogram A unit of mass equal to one thousand grams. m : Metre The base unit of length in the International System of Units. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

FDA : Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE AMBA : Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area. The boundary depends on the definition and date cited.

pH : A measure of acidity or alkalinity The scale is based on hydrogen-ion activity. A change of one pH unit corresponds to a tenfold change in that activity.

US : United States of America Identifies the country or jurisdiction of the source, price or institution. mm : Millimetre A unit of length equal to one thousandth of a metre.

mL : Millilitre One thousandth of a litre, a unit of volume. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number : Book evidence record The number identifies a source entry in the book's

INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number : Book evidence record The number

ON THIS PAGE

FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **pH** A logarithmic measure of hydrogen-ion activity

identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE ByEG : ByEG retailer The seller's trading name on the cited price listing.

USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. kW : Kilowatt A unit of power equal to one thousand watts. It states the rate of energy use or delivery. kWh : Kilowatt-hour A unit of energy. One kilowatt supplied for one hour equals one kilowatt-hour, or 1,000 watt-hours.

W : Watt The unit of power. One watt equals one joule of energy transferred per second. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE NARA : National Archives and Records Administration The United States agency preserving the archival record or photograph.

EU : European Union The political and economic union responsible for the European reference or rule cited. INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

pH : A measure of acidity or alkalinity The scale is based on hydrogen-ion activity. A change of one pH unit corresponds to a tenfold change in that activity. USDA : United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

TERMS ON THIS PAGE FAUBA : Facultad de Agronomía de la Universidad de Buenos Aires The University of Buenos Aires faculty responsible for the cited agronomic information.

TERMS ON THIS PAGE USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

TERMS ON THIS PAGE CC BY 4.0 : Creative Commons Attribution 4.0 International A licence permitting reuse, subject to attribution and its other terms.

UNLP : Universidad Nacional de La Plata Argentina's National University of La Plata.

TERMS ON THIS PAGE FAO : Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference.

ID : Identifier or identification A label that distinguishes one record, object or sample from another.

h : Hour A unit of time equal to sixty minutes. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

CC BY 4.0 : Creative Commons Attribution 4.0 International A licence permitting reuse, subject to attribution and its other terms.

ha : Hectare A unit of area equal to 10,000 square metres. cm : Centimetre A unit of length equal to one hundredth of a metre.

ON THIS PAGE
kWh kilowatt-hour, energy · **pH** A logarithmic measure of hydrogen-ion activity · **BY** Attribution condition in a Creative Commons licence

INTA : Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. m^2 : Square metre The area of a square with sides one metre long. RET-INASE : Red de Ensayos Territoriales / Instituto Nacional de Semillas Argentina's territorial variety trial network and the national seed institute identified in the cultivar reference. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

CC BY 4.0 : Creative Commons Attribution 4.0 International A licence permitting reuse, subject to attribution and its other terms. SENASA : Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

EU : European Union The political and economic union responsible for the European reference or rule cited. EC : European Community The suffix identifies the European Community legal instrument in the directive number. m : Metre The base unit of length in the International System of Units. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

km : Kilometre A length of one thousand metres.

EPA : Environmental Protection Agency The United States environmental authority responsible for the cited material.

TERMS ON THIS PAGE EPA : Environmental Protection Agency The United States environmental authority responsible for the cited material.

pH : A measure of acidity or alkalinity The scale is based on hydrogen-ion activity. A change of one pH unit corresponds to a tenfold change in that activity. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

mm : Millimetre A unit of length equal to one thousandth of a metre. m : Metre The base unit of length in the International System of Units. L : Litre One cubic decimetre of volume, or one thousand millilitres. D + number : Book evidence record The number identifies a

source entry in the book's evidence section. The linked record gives the title, credit or publication details.

NOAA : National Oceanic and Atmospheric Administration The United States agency supplying ocean, weather and climate records. US : United States of America Identifies the country or jurisdiction of the source, price or institution.

TERMS ON THIS PAGE g : Gram A unit of mass equal to one thousandth of a kilogram.

USDA : United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here. NRCS : Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information.

ARGENTINA: TWO DATED CURRENCY COMPARISONS

TERMS ON THIS PAGE BNA : Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation.

ON THIS PAGE

RET-INASE Red de Ensayos Comparativos de Cultivares de Trigo Pan, published through the Instituto Nacional de Semillas · **m^2** square metre, an area unit · **BY** Attribution condition in a Creative Commons licence · **EC** European Community, in this legal citation · **EPA** Environmental Protection Agency, United States · **pH** A logarithmic measure of hydrogen-ion activity

USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE PDF : Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

PDF : Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

[D02] INTA livestock guardian dog guide

[D03] Ontario: Livestock guardian dogs, selection and training

[D04] FCI Standard Schnauzer, standard 182

[D08] FCI Miniature Schnauzer, standard 183

[D05] FCI German Shepherd Dog, standard 166

[D06] FCI Labrador Retriever, standard 122

[D07] FCI Poodle, standard 172

[D09] FCI Collie Rough, standard 156

[N03] Cornell Riney Canine Health Center: re-evaluating your dog's diet

[N04] FDA: raw pet-food diets and bacterial risk

[N06] AAHA 2021 nutrition and weight-management guidelines

[N01] WSAVA: feeding treats to your dog

[N02] UC Davis Veterinary Medicine: treat guidelines for dogs

[N07] AAHA: nutritional assessment through canine life stages

[N09] VCA: hyperlipidemia and breed predisposition

[N05] VCA: care from birth to weaning

[T02] AVSAB: puppy socialisation position statement

[T05] Dogs Trust: introducing a puppy to the world

[T01] AVSAB: humane dog training position statement, 2021

[T03] Dogs Trust: recall training

[T04] Dogs Trust: settle training

[T06] Dogs Trust: training a stay

[T07] Dogs Trust: ten dog-training tips

[N08] AAHA: senior canine life stage

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **FCI** Fédération Cynologique Internationale · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **AAHA** American Animal Hospital Association · **UC** University of California · **AVSAB** American Veterinary Society of Animal Behavior

[T08] Dogs Trust: keeping calm at the veterinary clinic

[TP1] Filosofía Animal: home education prices, CABA and Buenos Aires

[TP2] CustosClub: individual course duration and published fees

[TP3] PetSmart: training services and published store prices

[TP4] HaSidoElPerro: Madrid and video training prices

[P01] Banco Nación: banknote selling rates, 13 November 2026

[L01] University of Minnesota Extension: feeding the mature horse

[L02] University of Minnesota Extension: raising layer chicks and pullets

[L03] Penn State Extension: dairy goat production and nutrition

[L04] Merck Veterinary Manual: management of llamas and alpacas

[L05] University of Minnesota Extension: feeding total mixed rations to cattle

[E01] Alpaca Canada: husbandry guidelines

Standard Schnauzer: a distinct documented breed photograph for estate 01. The individual shown is not offered for sale or certified as a trained guard. LoProject09 · 2025-06-29 16:43:00 · CC BY-SA 4.0.

Image catalogue, original and reuse terms: Standard Schnauzer.jpg

Return to the original estate study: Forest-Edge Estate

Standard Schnauzer: a distinct documented breed photograph for estate 02. The individual shown is not offered for sale or certified as a trained guard. Arthur Pons · 2012-08-14 · CC BY-SA 3.0.

Image catalogue, original and reuse terms: Schnauzer moyen Bilbo.JPG

Return to the original estate study: Formal Courtyard Estate

Image catalogue, original and reuse terms: German-shepherd-4040871920.jpg

Return to the original estate study: Axial Estate And Growing Grid

Labrador Retriever: a distinct documented breed photograph for estate 04. The individual shown is not offered for sale or certified as a trained guard. Skansken · 2009-03-17 · CC BY 3.0.

Image catalogue, original and reuse terms: Labrador Retriever - Yellow.JPG

Return to the original estate study: Lakeside Mixed-Use Estate

German Shepherd Dog: a distinct documented breed photograph for estate 05. The individual shown is not offered for sale or certified as a trained guard. Jakub Hałun · 2011-04-25 · CC BY-SA 4.0.

Image catalogue, original and reuse terms: 20110425 German Shepherd Dog 8505.jpg

Return to the original estate study: Long Lakeside Service Estate

Miniature Schnauzer: a distinct documented breed photograph for estate 06. The individual shown is not offered for sale or certified as a trained guard. Brocken Inaglory · 06/16/07 · CC BY-SA 3.0.

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Image catalogue, original and reuse terms: Miniature Schnauzer portrait.JPG

Return to the original estate study: Terraced Landscape Estate

Standard Poodle: a distinct documented breed photograph for estate 07. The individual shown is not offered for sale or certified as a trained guard. John Leslie from London, UK · 2007-03-17 15:39 · CC BY 2.0.

Image catalogue, original and reuse terms: Standard Poodle cream standing.jpg

Return to the original estate study: Waterfront And Garden Compound

Labrador Retriever: a distinct documented breed photograph for estate 08. The individual shown is not offered for sale or certified as a trained guard. Gzen92 · 2010-03-09 15:16:29 · CC BY-SA 4.0.

Image catalogue, original and reuse terms: Labrador retriever mâle (3).jpg

Return to the original estate study: Dock And Pavilion Estate

Standard Schnauzer: a distinct documented breed photograph for estate 09. The individual shown is not offered for sale or certified as a trained guard. Томасина · 2013-11-09 20:21:13 · CC BY-SA 3.0.

Image catalogue, original and reuse terms: Schnauzer Pepper&Salt in Riga.JPG

Return to the original estate study: Sunset Estate Overview

Standard Poodle: a distinct documented breed photograph for estate 10. The individual shown is not offered for sale or certified as a trained guard. Belinda Hankins Miller · 2007-09-18 14:29:06 · CC BY 2.0.

Image catalogue, original and reuse terms: Standard Poodle black lying down.jpg

Return to the original estate study: Shared Courtyard Estate

Image catalogue, original and reuse terms: Portrait of a labrador retriever.jpg

Return to the original estate study: Runway-Adjacent Estate

Standard Poodle: a distinct documented breed photograph for estate 12. The individual shown is not offered for sale or certified as a trained guard. Met20 · 2010-04-24 · CC BY-SA 3.0.

Image catalogue, original and reuse terms: Standard Poodle Watching.jpg

Return to the original estate study: Pond-Centred Estate

German Shepherd Dog: a distinct documented breed photograph for estate 13. The individual shown is not offered for sale or certified as a trained guard. Tim Dobbelaere from Ieper, Belgium · 2007-05-13 15:30 · CC BY-SA 2.0.

Image catalogue, original and reuse terms: German Shepherd Dog sitting leash.jpg

Return to the original estate study: Agricultural Service Estate

Image catalogue, original and reuse terms: Rough collie Sable.jpg

Return to the original estate study: Mountain-Waterfront Estate

Labrador Retriever: a distinct documented breed photograph for estate 15. The individual shown is not offered for sale or certified as a trained guard. Original author Hand, edit by Pharaoh Hound · Date of original photo: 20.1.2006. Date of edit: December 7, 2007 · CC BY 2.5.

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UK United Kingdom · **BY** Attribution condition in a Creative Commons licence · **BY-SA** Creative Commons Attribution-ShareAlike

Image catalogue, original and reuse terms: Labrador Retriever snow.jpg

Return to the original estate study: Guest-House And Water Estate

Maremma Sheepdog, photographed in 2019. This image identifies a breed type; the catalogue does not document this individual's training or working results. Wonderchook · 2019-07-04 16:24:27 · CC BY-SA 4.0.

Image catalogue, original and reuse terms: Maremma Sheepdog in a Field.jpg

A documented Pyrenean Mountain Dog photograph supplies a second livestock-guardian breed reference. A show photograph records appearance; it does not demonstrate that this individual has worked with sheep. Canarian · 2017-12-08 14:51:23 · CC BY-SA 4.0.

Image catalogue, original and reuse terms: Great Pyrenees.jpg

[D01] INTA: Perros protectores de ganado

[P02] Puppis Argentina: Pro Plan adult medium, 15 kg

[P03] Chewy: Pro Plan shredded chicken and rice adult, 35 lb

[P04] Kiwoko Spain: Pro Plan medium adult chicken, 16.5 kg promotion

[P05] Great Pyrenees Rescue Atlanta: adoption fees

Historical manuscript illustration from the De arte venandi cum avibus tradition, BnF manuscript Français 12400. The page is evidence of a manuscript tradition; it is not a modern animal-care diagram. Anonymous · 13th century · Public domain.

Image catalogue, original and reuse terms: De arte venandi cum avibus- BNF MS. Fr. 12400.png

Historical natural-history plate of the gyrfalcon, Falco rusticolus. This is an illustration of the species, not a portrait of the auction bird discussed below. John James Audubon · between 1827 and 1838 · Public domain.

Image catalogue, original and reuse terms: Falco rusticolusAWP366AAA.jpg

[F01] Saudi Press Agency: International Falcon Breeders Auction, 7 August 2024

[F02] Saudipedia: International Falcon Breeders Auction, 2021 sale record

[P06] Saudi Central Bank: currency exchange rates

[F03] US official CFR: 50 CFR part 21, including section 21.82, 2025 edition

[F04] Florida Fish and Wildlife: falconry licensing

[F05] Argentina, Ley 22.421: conservation of wildlife, updated text

[F07] European Commission CITES guide: internal trade principles

[F08] European Commission CITES guide: trade exemptions

[F09] European Commission: captive bird movements and imports

[F10] CITES: Appendix-I breeding operations and Falco rusticolus

[F12] SENASA: prior authorisation for entry of wild animals and nontraditional pets

ON THIS PAGE

BY-SA Creative Commons Attribution-ShareAlike · **INTA** Instituto Nacional de Tecnología Agropecuaria · **kg** kilogram, a mass unit · **US** United States · **CITES** Convention on International Trade in Endangered Species of Wild Fauna and Flora · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

[F13] SENASA: sanitary authorisation required for entry of birds

Documented photograph of an alpaca herd. Alpacas are domesticated camelids; this image is a contemporary husbandry reference, not evidence that any particular estate has sufficient forage. Thomas Quine · 2006-01-06 11:51 · CC BY 2.0.

Image catalogue, original and reuse terms: Herd of Alpaca grazing (94420085).jpg

[F11] US Public Law 117-243: Big Cat Public Safety Act

TERMS ON THIS PAGE m2 : Square metre The area of a square with sides one metre long.

m3 : Cubic metre The volume of a cube with edges one metre long. It holds one thousand litres.

FTE/year : Full-time equivalent per year Costs quoted on this basis apply to one full-time-equivalent position for a year.

TERMS ON THIS PAGE USGS : United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

USD : United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. ARS : Argentine peso The currency in which the local price, quote or exchange rate is recorded. m : Metre The base unit of length in the International System of Units. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE UNESCO : United Nations Educational, Scientific and Cultural Organization The intergovernmental body responsible for the heritage or cultural record cited here.

TERMS ON THIS PAGE FAA : Federal Aviation Administration The United States civil aviation authority credited with the handbook or technical figure.

TERMS ON THIS PAGE PC-12 NGX / NGX : Pilatus PC-12 NGX The manufacturer's model and variant designation, used here as a reference for an aircraft comparison.

TERMS ON THIS PAGE PV : Photovoltaic Describes a cell or system that converts incoming light into electrical energy.

TERMS ON THIS PAGE FAA: Federal Aviation Administration The United States civil aviation authority credited with the handbook or technical figure.

TERMS ON THIS PAGE USFA : United States Fire Administration The United States agency credited with fire-prevention guidance. Related source plates and building studies

Book contents

TERMS ON THIS PAGE Wh : Watt-hour A unit of energy. One watt delivered for an hour supplies one watt-hour.

Argentina: enter a dated ARS price beside each purchased unit, with delivery and tax status. United States: repeat with USD prices and the same unit quantities. European Union: repeat in EUR, noting VAT treatment. Elsewhere use local currency. Reused cups, cartons or caps may have zero new purchase cost; list them anyway so the physical inventory remains complete. Rates are left unquoted where no matching seller

ON THIS PAGE

SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **BY** Attribution condition in a Creative Commons licence · **US** United States · **ARS** Argentine peso · **USD** United States dollar · **VAT** Value-added tax · **×** multiplied by

record has been checked. Use the included worksheet: quantity × unit rate, plus tools, labour, delivery and applicable taxes.

TERMS ON THIS PAGE PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

L: Litre One cubic decimetre of volume, or one thousand millilitres.

TERMS ON THIS PAGE ESAB: Elektriska Svetsnings-Aktiebolaget The historical Swedish company name behind the welding-equipment manufacturer in the electrode history.

TERMS ON THIS PAGE UNESCO: United Nations Educational, Scientific and Cultural Organization The intergovernmental body responsible for the heritage or cultural record cited here.

TERMS ON THIS PAGE IDs: Identifier or identification A label that distinguishes one record, object or sample from another.

TERMS ON THIS PAGE MGU-H: Motor Generator Unit-Heat The earlier Formula One unit coupled to the turbocharger shaft.

SVG: Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp.

TERMS ON THIS PAGE SVG: Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp.

TERMS ON THIS PAGE ha: Hectare A unit of area equal to 10,000 square metres.

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

ha: Hectare A unit of area equal to 10,000 square metres.

km: Kilometre A length of one thousand metres.

TERMS ON THIS PAGE CORUFA: Consejo Regulador del Uso de Fuentes de Agua The Entre Ríos council responsible for the use of water sources.

PDF, Portable Document Format A file format used to preserve the layout of a document when it is shared or printed. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

FTE/year: Full-time equivalent per year Costs quoted on this basis apply to one full-time-equivalent position for a year.

TERMS ON THIS PAGE m^2 / m2: Square metre The area of a square with sides one metre long.

ON THIS PAGE

ARS Argentine peso · **USD** United States dollar · **VAT** Value-added tax · **×** multiplied by · **ESAB** Elektriska Svetsnings-Aktiebolaget, the historical welding-company name · **m^2** square metre, an area unit

kW, Kilowatt A unit of power equal to one thousand watts. It states the rate of energy use or delivery. kWh, Kilowatt-hour A unit of energy. One kilowatt supplied for one hour equals one kilowatt-hour, or 1,000 watt-hours.

m, Metre The base unit of length in the International System of Units. h, Hour A unit of time equal to sixty minutes. L: Litre One cubic decimetre of volume, or one thousand millilitres.

TERMS ON THIS PAGE kW: Kilowatt A unit of power equal to one thousand watts. It states the rate of energy use or delivery.

h: Hour A unit of time equal to sixty minutes.

cm - Centimetre. One hundredth of a metre. Ten millimetres make one centimetre.

Chapter contents Book page 629 Source 1 · open record Source 2 · open record

Argentina: learning the line aboard a training ship

Chapter contents Book page 630 Full-size source image Source 1 · open record

Source 2 · open record Source 3 · open record Bilingual rope vocabulary The American ropewalk

Chapter contents Book page 631 Source 1 · open record Source 2 · open record

USCG - United States Coast Guard. The maritime service that publishes the handbook and appears in the photograph credit.

a / b - Working end / standing part. The source letters identify parts of the line. The numbers identify the successive stages.

Chapter contents Book page 632 Full-size source image Source 1 · open record

Source 2 · open record Inspect the bowline Complete bowline chapter

PTC - Performance Technology Center. Part of the creator-account name USCG PTC Developer; an individual photographer is not identified.

CC0 - Creative Commons Zero. A public-domain dedication, version 1.0 in these image records.

ABoK - The Ashley Book of Knots. Clifford W. Ashley's 1944 reference book. The following number is an illustration identifier, not a load rating.

Chapter contents Book page 633 Full-size source image Source 1 · open record

Source 2 · open record Round turn + half hitches Earlier full page

Chapter contents Book page 634 Source 1 · open record Source 2 · open record

a / b - Bight-forming line / second line. These letters distinguish the two lines. The end of line b passes through and around the bight in line a.

Chapter contents Book page 635 Full-size source image Source 1 · open record

Source 2 · open record Why the image changed Round turn + half hitches Care and storage

NOAA - National Oceanic and Atmospheric Administration. The United States agency providing historical and magnetic-field sources.

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kWh kilowatt-hour, energy · **PTC** Performance Technology Center in the Coast Guard creator credit · **USCG** United States Coast Guard · **CC0** Creative Commons Zero, a public-domain dedication tool

m - Metre. Length unit. All plan distances in the worked plot are horizontal unless labelled otherwise.

Chapter contents Book page 636 Full-size source image ME1 · open source record

Chapter contents Book page 637 ME2 · open source record Slope distance

Chapter contents Book page 638 Full-size source image US4 · open source record

Chapter contents Book page 639 ME3 · open source record ME4 · open source record

Chapter contents Book page 640 Full-size source image US6 · open source record

Chapter contents Book page 641 Full-size source image EL1 · open source record

Chapter contents Book page 642 US4 · open source record AR6 · open source record

NIST - National Institute of Standards and Technology. United States agency publishing the measurement and resilience references.

Chapter contents Book page 643 AR6 · open source record AR7 · open source record

Chapter contents Book page 644 US2 · open source record WO1 · open source record

Chapter contents Book page 645 US1 · open source record US5 · open source record

Chapter contents Book page 646 US5 · open source record US4 · open source record

FDA - Food and Drug Administration. United States agency explaining cosmetic and drug categories and the specific regulatory definition of soap.

Chapter contents Book page 647 US4 · open source record AR3 · open source record

Chapter contents Book page 648 Argentina and history Why the polar edge works

H - Solar hour angle. Fifteen degrees times the number of apparent-solar hours from noon; negative in the morning, positive in the afternoon. On the source compass H instead labels height.

Chapter contents Book page 649 US10 · open source record Buenos Aires clock example

Chapter contents Book page 650 Approximate meridian Compass and true direction

NASA - National Aeronautics and Space Administration. United States agency hosting the cited archived lesson and current solar-viewing guidance.

Chapter contents Book page 651 US8 · open source record Twilight and terrain

Chapter contents Book page 653 EU1 · open source record Unequal daylight hours

Chapter contents Book page 655 US2 · open source record Pendulum model

Chapter contents Book page 656 WO1 · open source record US2 · open source record

CONTINUE INTO THE CHAPTERS

Source records: IGN, PATH. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

The earlier page’s reference destinations remain available below. Current historical claims and diagrams are documented in the reader bibliography.

ON THIS PAGE

FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute

Earlier reference 01 Earlier reference 02 Earlier reference 03

IGN: Instituto Geográfico Nacional, Argentina's national geographic institute.

Full illustrated reader Tools and materials Itemized costs Workshop record

Historical plate 1 Historical plate 2 IGN · source PATH · source

All terms explained Sources and credits Next book lesson Book contents

Source records: RUMRIGHTS, RUMSEY. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

Earlier reference 01 Earlier reference 02 Earlier reference 03 Earlier reference 04

Earlier reference 05 Earlier reference 06

Historical plate 1 Historical plate 2 RUMRIGHTS · source RUMSEY · source

Source records: PATH, SAFE. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

Earlier reference 05

Historical plate 1 Historical plate 2 PATH · source SAFE · source

Source records: AGGO, IGN, IMCCE. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

NASA: National Aeronautics and Space Administration, the United States civil space agency.

UTC: Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event.

Historical plate 1 Historical plate 2 AGGO · source IGN · source

IMCCE · source All terms explained Sources and credits Next book lesson

Source records: SI. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

mm: Millimetre, one thousandth of a metre.

SI: Système international d’unités, the International System of Units.

Earlier reference 05 Earlier reference 06 Earlier reference 07 Earlier reference 08

Earlier reference 09

Historical plate 1 ZeusC original 027 ZeusC original 171 ZeusC original 156

Source records: BERNOULLI, HYDRO. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

Earlier reference 05 Earlier reference 06 Earlier reference 07

mL: Millilitre, one thousandth of a litre.

ON THIS PAGE

IGN Instituto Geográfico Nacional, Argentina's national geographic institute · **AGGO** Argentine-German Geodetic Observatory · **IMCCE** Institut de mécanique céleste et de calcul des éphémérides · **SI** Système international d’unités, the International System of Units

s: Second, the unit of time.

Pa: Pascal, one newton per square metre, the unit of pressure.

ρ: Rho, the symbol for mass density in the fluid equation.

parallax: An apparent shift in position caused by a change in viewing direction.

Source records: BROOKS, CAUCHOIS, CURIE, DAWN, HOFFMAN, MEITNER, NODDACK, PEREY, PHELPS. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

Earlier reference 09 Earlier reference 10 Earlier reference 11 Earlier reference 12

Earlier reference 13 Earlier reference 14 Earlier reference 15 Earlier reference 16

Earlier reference 17 Earlier reference 18 Earlier reference 19

Source records: BROGLIE, SI. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

λ: Lambda, the symbol for wavelength in the matter-wave equation.

h: Planck's constant in the matter-wave relation; the diagram gives its numerical value and unit.

p: Pressure in the fluid equation, but momentum in the matter-wave equation. Read the local definition.

Historical plate 1 ZeusC original 155 SI · source All terms explained

Source records: ASTON, GOLDBERG. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

g: Gram, one thousandth of a kilogram.

Historical plate 1 ZeusC original 155 ASTON · source GOLDBERG · source

Source records: PENNINGTON, PENPHOTO, TSUJIMURA. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

cold chain: The connected temperature-controlled stages of processing, storage and transport.

Historical plate 1 ZeusC original 155 PENNINGTON · source PENPHOTO · source

TSUJIMURA · source All terms explained Sources and credits Next book lesson

Source records: GORDON, ROCK. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

ROCK · source All terms explained Sources and credits Next book lesson

Source records: HARDY, KELLEY. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

Historical plate 1 ZeusC original 155 HARDY · source KELLEY · source

Source records: BORRELL, GAO, GAOPAPER. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

Historical plate 1 ZeusC original 155 BORRELL · source GAO · source

ON THIS PAGE

SI Système international d’unités, the International System of Units · **λ** lambda, the wavelength of light

Source records: LAWSON, RANGANATHAN, RANGPAPERS. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

Source records: ANGULAR, HEAT, STATICS, WORK. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

N: Newton, the force that gives a one-kilogram mass an acceleration of one metre per second squared.

kg: Kilogram, the unit of mass.

m: Metre, the unit of length.

Earlier reference 17

Historical plate 1 ZeusC original 063 ZeusC original 087 ANGULAR · source

Source records: WORK. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

J: Joule, the unit of energy or work; one newton metre.

Historical plate 1 ZeusC original 063 ZeusC original 087 WORK · source

kg: Kilogram, the SI unit of mass. The capitalized Kg on the source sheet is not the standard symbol.

Historical plate 1 ZeusC original 127 ZeusC original 128 ZeusC original 129

Source records: EUCLID. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

a: The edge length in the geometric examples; its unit must be stated.

SVG: Scalable Vector Graphics, the editable vector-drawing format.

Source records: RATIO. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

DNA: Deoxyribonucleic acid, the molecule that carries genetic information; the label appears in the supplied collage.

Historical plate 1 ZeusC original 346 ZeusC original 351 ZeusC original 345

RATIO · source All terms explained Sources and credits Next book lesson

Source records: VISION. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

VISION · source All terms explained Sources and credits Next book lesson

Source records: HOLDER_US, RESISTOR_AR. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

AA: A standardized cylindrical battery size designation, not an acronym.

V: Volt, the unit of electric potential difference; V can also denote the voltage quantity in a formula.

Ω: Ohm, the unit of electrical resistance.

W: Watt, one joule per second, the unit of power.

ON THIS PAGE

SI Système international d’unités, the International System of Units · **Ω** ohm, electrical resistance

Source records: OHM. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

A: Ampere, the unit of electric current. Node letters A and B are identifiers, not units.

mA: Milliampere, one thousandth of an ampere.

I: Electric current in the circuit equations.

R: Resistance in the circuit equations.

Source records: GAUSS. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

Source records: KIRCHHOFF. Full titles and reading notes appear in the linked reader bibliography. These codes identify source records; they are not technical abbreviations.

Chapter reading 1 Chapter reading 2 Chapter reading 3 Full illustrated reader

ZeusC source z070 Terms explained Sources and credits Next lesson

Chapter reading 1 Full illustrated reader Tools and materials Material bills

Workshop record Historical plate 1 ZeusC source z007 ZeusC source z008

ZeusC source z009 ZeusC source z010 ZeusC source z011 ZeusC source z012

ZeusC source z013 ZeusC source z014 ZeusC source z015 ZeusC source z016

Terms explained Sources and credits Next lesson Book contents

mm^2: Square millimetre, a unit of area.

N: Newton, the force accelerating one kilogram by one metre per second squared.

Workshop record Historical plate 1 ZeusC source z017 ZeusC source z018

ZeusC source z019 ZeusC source z020 ZeusC source z021 ZeusC source z022

ZeusC source z023 ZeusC source z024 ZeusC source z025 ZeusC source z026

USB: Universal Serial Bus; here the complete low-voltage power connection supplied with the fan.

PVA: Polyvinyl acetate, the polymer in the specified white card or wood adhesive.

INTI: Instituto Nacional de Tecnología Industrial, Argentina's National Institute of Industrial Technology.

Original and full credit INTI / source

M6: Metric screw thread with nominal 6 mm major diameter; pitch and fit must also be specified.

M8: Metric screw thread with nominal 8 mm major diameter.

M14: Metric screw thread with nominal 14 mm major diameter.

6061: An aluminium alloy designation, not a complete material specification without temper and product form.

N: Newton, the unit of force.

ON THIS PAGE

mm^2 square millimetre · **USB** Universal Serial Bus, the wired interface used for data and device power · **INTI** Instituto Nacional de Tecnología Industrial · **mm** millimetre, 0.001 metre

Original and full credit

OD: Outside diameter, measured across the outer surface.

ID: Inside diameter, measured across the bore.

N·m: Newton metre, the unit of torque or turning moment.

rpm: Revolutions per minute, a rotation rate.

DIN: Deutsches Institut für Normung, the German Institute for Standardization.

08B: European-series roller-chain designation with 12.7 mm pitch; a suffix identifies strand count.

Original and full credit RENOLD / source CHAINID / source

Original and full credit RENOLD / source

SI: Système international d'unités, the International System of Units. In the SKF product name SI 10 C, SI is a catalogue code, not the units system.

SKF: Svenska Kullagerfabriken, the Swedish bearing company; a manufacturer name in sheet 049.

M10: Metric screw thread with nominal 10 mm major diameter.

M12: Metric screw thread with nominal 12 mm major diameter.

Original and full credit SKF / source

ANMAT: Administración Nacional de Medicamentos, Alimentos y Tecnología Médica, Argentina's regulator for medicines, food and medical technology.

Original and full credit ANMAT / source

NIST: National Institute of Standards and Technology, United States.

Original and full credit METRIC / source CONVERT / source

Original and full credit EUFOOD / source CAA / source

Original and full credit PETRIE / source

Argentina: First regional context in these readers; local examples are teaching scenarios unless identified as a documented case.

NASA: National Aeronautics and Space Administration, United States.

JPL: Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA.

km: Kilometre, one thousand metres.

occultation: One body hides a background source from the observer. Its timing can constrain a projected outline.

ESO: European Southern Observatory, an intergovernmental astronomy organisation with observing facilities in Chile.

ON THIS PAGE

mm millimetre, 0.001 metre · **SKF** Svenska Kullagerfabriken, the historical Swedish bearing-company name · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **CAA** Código Alimentario Argentino, the Argentine Food Code · **NASA** National Aeronautics and Space Administration

m: Metre, the SI base unit of length.

UTC: Coordinated Universal Time. Exposure timestamps must identify whether they refer to the beginning, middle or end of an exposure.

LED: Light-emitting diode; use a low-power battery lamp for the shadow model.

USGS: United States Geological Survey.

SVG: Scalable Vector Graphics, an editable drawing format that keeps lines sharp when enlarged.

libration: Changes in the apparent orientation of the Moon that reveal different areas near its edge over time.

ephemeris: A dated calculation of an astronomical body's position or events, tied to a specified model and time convention.

Saros: A near-repetition of eclipse geometry after 223 synodic months, approximately 18 years and 11 days plus about eight hours. It does not repeat an identical local eclipse.

exeligmos: Three Saros cycles, approximately restoring eclipse time of day while the detailed geometry continues to evolve.

PET: Polyethylene terephthalate, a plastic used here as a room-temperature transparent overlay.

g: Gram, one thousandth of a kilogram, in a material quantity. In the atlas equation $g = GM/R^2$, the symbol instead means gravitational acceleration; the displayed unit is m/s^2.

ARS: Argentine peso, the currency used in the Argentina budgets.

EUR: Euro; the European budget uses Spain as its shopping context.

M4: Metric screw thread with a nominal diameter of 4 mm. Match the nut and actual pitch; the designation does not specify material strength.

EU: European Union. Other European countries are not automatically EU members.

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Argentina: First regional context in these readers; local examples are teaching scenarios unless identified as a documented ca

IGN: Instituto Geográfico Nacional, Argentina's national geographic institute.

POSGAR: Posiciones Geodésicas Argentinas, Argentina's geodetic reference-frame designation.

AC: Alternating current, or a voltage that varies periodically.

POSGAR07: Posiciones Geodésicas Argentinas 2007, the named Argentine geodetic reference frame. State the observation epoch and any actual connection to control.

SRVN16: Sistema de Referencia Vertical Nacional 2016, Argentina's national vertical reference system.

meniscus: The curved free surface at the liquid edge. Use the same reading convention at both hose ends.

ON THIS PAGE

SI Système international d'unités, the International System of Units · **UTC** Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event · **GM** Gravitational parameter: gravitational constant G multiplied by body mass M · **m/s^2** metres per second squared, acceleration · **=** equals · **mm** millimetre, 0.001 metre · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute

US: United States of America.

NOAA: National Oceanic and Atmospheric Administration, United States.

HMC5883L: Honeywell model identifier for a three-axis digital magnetic sensor. A model code is not a general acronym.

ATmega328P: Microchip/Atmel microcontroller model identifier; it does not identify every board circuit shown around the chip.

I2C: Inter-Integrated Circuit, a serial communication bus using data and clock lines. Also written I^2C.

µT: Microtesla, one millionth of a tesla, a unit of magnetic flux density.

Bowditch: A traverse adjustment that distributes coordinate corrections in proportion to leg length under its stated measurement assumptions.

alidade: A sighting rule used to establish a direction and draw its ray on a plane table.

datum: A declared reference for positions or heights. Here a local drawing datum is distinguished from a national reference system.

RMG: Royal Museums Greenwich, the collection holding the cited geomantic compass.

NAV0442: Royal Museums Greenwich collection identifier for the cited Wang Yangxi geomantic compass, circa 1850. It is an object identifier, not an instrument rating.

luopan: A Chinese geomantic compass whose directional indicator and inscribed rings belong to a particular historical and interpretive system.

RDCTD.PRO: The branding printed on supplied sheet 088. No verified acronym expansion or permission grant is established by that printed mark.

trilateration: Locating a point from measured distances. In the two-circle example, a side observation selects the mirror solution.

cm: Centimetre, one hundredth of a metre.

CCTV: Closed-circuit television, the camera-system abbreviation printed on supplied sheet 088.

OP: Operator identifier in the date and time panel of supplied sheet 088; elsewhere abbreviations must be read in their own context.

OLED: Organic light-emitting diode, the display technology named on the supplied compass poster.

TP4056: Charger integrated-circuit model identifier. A charger label alone does not prove a complete protected battery system.

PCB: Printed circuit board, the board carrying conductor tracks and electronic components.

VCC: Positive supply label used on many circuit boards. Read the actual board voltage specification before connecting power.

GND: Ground, the circuit reference node. It is not automatically a protective earth connection.

SDA: Serial data line for the I2C bus.

ON THIS PAGE
SDA Serial data line of the I2C communication bus · **I2C** Inter-Integrated Circuit, a serial communication bus using data and clock lines

SCL: Serial clock line for the I2C bus.

DRDY: Data ready, a signal indicating a new sensor measurement is available.

INT: Interrupt, an electronic signal used to request processor attention; exact function depends on the part.

TXD: Transmit data, the serial output label in the supplied illustration.

RXD: Receive data, the serial input label in the supplied illustration.

Li-ion: Lithium-ion rechargeable battery chemistry.

USB: Universal Serial Bus. The connector and complete power circuit must be identified independently.

mAh: Milliampere-hour, a charge-capacity unit, not a direct statement of stored energy without a voltage.

°C: Degree Celsius, a temperature unit.

g: Gram, one thousandth of a kilogram; a unit of mass in this reader.

CERN: European Organization for Nuclear Research; its acronym comes from the historical French Conseil européen pour la recherche nucléaire. It is not an EU agency.

INTI: Instituto Nacional de Tecnología Industrial, Argentina's industrial-technology institute.

kg: Kilogram, the SI base unit of mass.

kerf: Material width removed by a cut. State it separately from finished part dimensions and edge trimming.

metastable: A state that can persist for a time before changing to a lower-energy state; here used for a specified nuclear state.

P_CERN / source

H: Hydrogen, when used as an atom label or chemical symbol.

O: Oxygen, when used as an atom label or chemical symbol.

mol: Mole, the SI unit of amount of substance, containing exactly $6.02214076 \times 10^{23}$ specified elementary entities.

NH3: Ammonia: one nitrogen atom and three hydrogen atoms per molecule.

O2: Molecular oxygen: two oxygen atoms per molecule.

NO: Nitrogen monoxide, also called nitric oxide: one nitrogen and one oxygen atom.

NO2: Nitrogen dioxide: one nitrogen and two oxygen atoms.

H2O: Water: two hydrogen atoms and one oxygen atom.

HNO3: Nitric acid: one hydrogen, one nitrogen and three oxygen atoms.

EPA: Environmental Protection Agency, United States.

L: Litre, one thousand cubic centimetres.

gasometer: An apparatus for collecting or measuring gas volume; the reading needs stated conditions.

ON THIS PAGE

I2C Inter-Integrated Circuit, a serial communication bus using data and clock lines · **USB** Universal Serial Bus, the wired interface used for data and device power · **°C** degree Celsius, a temperature unit · **EU** European Union · **SI** Système international d'unités, the International System of Units · **×** multiplied by

P_NORTON / source

SDS: Safety data sheet when describing purchase documents. In SDS-PAGE it instead means sodium dodecyl sulfate, a detergent. Read the context.

PP: Polypropylene, the plastic specified for the room-temperature open-water containers.

azeotrope: A mixture composition at which vapour and liquid have the same composition under the stated conditions; ordinary boiling then does not provide the assumed enrichment.

P_EPA / source

c: Speed of light in vacuum, exactly 299,792,458 metres per second in the SI definition.

MS: Manuscript, in the archival shelfmark Keynes MS 31.

P_SYMBOLS / source

N: Nitrogen, when used as the atom label or chemical symbol in this reader.

M: Million, 10^6, in the price poster. On the teaching counters M is a separate label for one mass token representing 5 g.

M5: Metric screw thread with nominal 5 mm diameter. Match the actual pitch, nuts and assembly stack.

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K: Thousand, 10^3, in the English price-poster suffix; in a temperature equation K instead denotes kelvin.

B: Billion, 10^9, in the poster's English short-scale magnitude notation.

T: Trillion, 10^{12}, in the poster's English short-scale magnitude notation.

Tc-99: Technetium-99, the ground-state nuclide named in the source audit.

Tc-99m: Technetium-99 in a metastable nuclear state; the small m is part of the nuclear-state designation, not the metre unit.

NOx: Nitrogen oxides, a collective label whose exact included species must be stated in a technical record.

px: Pixel, one discrete image sample. A pixel count becomes a length only through a stated calibration.

INTI: Instituto Nacional de Tecnología Industrial, Argentina's national industrial technology institute.

SAC: Servicio Argentino de Calibración y Medición, an Argentine calibration and measurement service.

BIPM: Bureau international des poids et mesures, the International Bureau of Weights and Measures.

TEM: Transmission electron microscopy, or a transmission electron microscope. Electrons pass through a sufficiently thin specimen.

SEM: Scanning electron microscopy, or a scanning electron microscope. A beam scans the surface and detected signals form the image.

nm: Nanometre, one billionth of a metre.

exp: Exponential function with base e; exp(x) = e raised to x.

ON THIS PAGE

SDS Safety data sheet in purchasing; sodium dodecyl sulfate in protein separation · **SDS-PAGE** Sodium dodecyl sulfate polyacrylamide gel electrophoresis · **SI** Système international d'unités, the International System of Units · **g** gram, 0.001 kilogram · **mm** millimetre, 0.001 metre · **m** metre, a length unit · **nm** nanometre, one billionth of a metre · **=** equals

ln: Natural logarithm, with base e.

AA: A standard cylindrical battery size designation. It does not mean that every AA cell has the same chemistry or voltage; these builds use two 1.5 V cells.

V: Volt, the unit of electric potential difference.

mA: Milliampere, one thousandth of an ampere; a unit of electric current.

kΩ: Kilohm, one thousand ohms.

NA: Numerical aperture, n sin θ: refractive index multiplied by the sine of the collection half-angle.

λ: Lambda, the wavelength in the optical resolution example.

HRTEM: High-resolution transmission electron microscopy. Image interpretation also depends on imaging conditions and the specimen.

SAED: Selected-area electron diffraction. Diffraction is collected from a selected specimen area; a pattern alone does not establish full composition.

µm: Micrometre, one millionth of a metre.

s: Second, the SI unit of time in the circuit calculations.

RC: Resistor-capacitor. The ideal single time constant is resistance multiplied by capacitance.

SPDT: Single-pole, double-throw: one common switch terminal selects one of two other terminals.

MΩ: Megohm, one million ohms.

µF: Microfarad, one millionth of a farad; a unit of capacitance.

Rm: Input resistance of the voltmeter, which loads the measured circuit.

EIS: Electrochemical impedance spectroscopy: measurement of electrical response as a function of frequency.

CPE: Constant-phase element, an empirical equivalent-circuit element with a frequency-independent phase angle under its stated model.

IUPAC: International Union of Pure and Applied Chemistry.

Hz: Hertz, one cycle per second.

JCGM: Joint Committee for Guides in Metrology.

US: United States.

ARS: Argentine peso. Planning amounts are separate from US dollars and euros.

EUR: Euro. Spain is the European Union purchase-planning example in this reader.

A4: Paper size 210 by 297 millimetres.

PDF: Portable Document Format, used for readers and actual-size print templates.

ON THIS PAGE

AA A standardized cylindrical battery size designation, not an acronym · **V** volt, electrical potential difference · **kΩ** kilohm, 1,000 ohms · **NA** Numerical aperture; n × sin θ in the optical collection geometry · **n** refractive index of the optical medium · **sin** sine, the trigonometric function of an angle · **θ** theta, the light-collection half-angle · **λ** lambda, the wavelength of light · **SI** Système international d'unités, the International System of Units · **US** United States

DC: Direct current, or the constant-polarity component of a voltage or current.

EU: European Union.

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Public Domain Mark 1.0, as stated by the collection manifest. https://creativecommons.org/publicdomain/mark/1.0/

ECD: Equivalent circular diameter, here the diameter of a circle with the same projected area as the measured object.

FIJI: Fiji Is Just ImageJ, a distribution of the ImageJ image-analysis software.

μ: Mu, the mean of the natural logarithm of diameter relative to the stated reference diameter in the lognormal model.

σ: Sigma, the standard deviation of the natural logarithm in the lognormal model.

Argentina: the Pampero crossing and the beginnings of national aviation

kg: Kilogram, the SI unit of mass.

mm: Millimetre; one thousandth of a metre.

m: Metre, the SI unit of length.

W: Watt when used as a power unit. In the glide equations W denotes weight, measured in newtons.

Pa: Pascal; the SI unit of pressure.

kW: Kilowatt; one thousand watts.

N: Newton; the SI unit of force.

K: Kelvin; the SI unit of thermodynamic temperature.

ARS: Argentine peso; a currency amount, not a conversion from the other price columns.

EUR: Euro; Spain is the European Union example used for the planning bill.

g: Gram when used as a mass unit; gravity has a separate meaning when used as a variable.

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kDa: Kilodalton, one thousand daltons of molecular mass. An apparent gel-derived value is method-dependent.

FDA: Food and Drug Administration, the United States regulatory agency named in the dated source.

ARS: Argentine peso. The cost column is an independent planning allowance, not an exchange-rate conversion.

USD: United States dollar. The cost column is an independent planning allowance.

EUR: Euro. The European cost column is an illustrative planning allowance.

cm^3: Cubic centimetre, a unit of volume equal to one millilitre.

ON THIS PAGE

SI Système international d’unités, the International System of Units · **kDa** Kilodalton, a molecular-mass unit

g: Gram, a unit of mass.

Source records: AR1, AR4, M1. Full titles and links appear in the consolidated clock source register.

Source records: AR2, AR3, M1. Full titles and links appear in the consolidated clock source register.

Source records: US2, EU7, M1, US12, US8. Full titles and links appear in the consolidated clock source register.

Source records: US2, M1. Full titles and links appear in the consolidated clock source register.

Source records: US8, M1. Full titles and links appear in the consolidated clock source register.

Source records: EU7, M1. Full titles and links appear in the consolidated clock source register.

Source records: AR2, US2, EU7, M1. Full titles and links appear in the consolidated clock source register.

Source records: US2, EU7, M1. Full titles and links appear in the consolidated clock source register.

Source records: US1, M1. Full titles and links appear in the consolidated clock source register.

Source records: US7, US2, M1. Full titles and links appear in the consolidated clock source register.

Source records: EU1, EU2, US5, EU5, M1. Full titles and links appear in the consolidated clock source register.

Source records: EU1, EU8, Z2, M1. Full titles and links appear in the consolidated clock source register.

Source records: EU1, M1. Full titles and links appear in the consolidated clock source register.

Source records: US3, EU1, M1. Full titles and links appear in the consolidated clock source register.

Source records: US4, M1. Full titles and links appear in the consolidated clock source register.

Source records: EU8, Z2, EU1, M1. Full titles and links appear in the consolidated clock source register.

Source records: EU3, EU4, US6, M1. Full titles and links appear in the consolidated clock source register.

Source records: EU3, EU6, Z1, M1. Full titles and links appear in the consolidated clock source register.

Source records: EU4, M1. Full titles and links appear in the consolidated clock source register.

Source records: M1. Full titles and links appear in the consolidated clock source register.

Source records: WO1, US2, M1. Full titles and links appear in the consolidated clock source register.

Source records: WO1, M1, WO4. Full titles and links appear in the consolidated clock source register.

Source records: WO1, US2, M1, AR5, AR6, AR7, US9, US10, US11. Full titles and links appear in the consolidated clock source register.

Source records: WO2, WO3, Z3, M1. Full titles and links appear in the consolidated clock source register.

Argentina: replace every assumed peso line with a dated local quotation. United States: price the same container count, fruit quantity and work time in USD. European Union: use EUR where appropriate and retain national food and labelling requirements. Other regions: retain their currency, cup convention and freezer conditions. Do not convert a peso example using an unstated exchange rate. A blank quotation is visibly incomplete; a fabricated cheap price is worse. The interactive material bill totals only entered prices and reports how many items remain unquoted.

[D1123] [D1137] [D1138]

ON THIS PAGE

USD United States dollar

TERMS ON THIS PAGE D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Historical botanical print, Artocarpus incisa (an older name used for breadfruit). The image records botanical illustration; it is not a photograph of the 1793 arrival. Popular Graphic Arts · Date not recorded in the retrieved catalogue · Public domain.

Image catalogue, original and reuse terms: Artocarpus incisa. Jaquier a pain LCCN2003665121.jpg

[C01] Natural History Museum: HMS Endeavour, 250 years

[C03] Natural History Museum: On tour with Tupaia

Historical portrait attributed to John Webber. The archive attribution is retained; this is not an invented scene of the voyage. John Webber · 1776-01-01 · Public domain.

Image catalogue, original and reuse terms: Portrait of William Bligh attributed to John Webber.jpg

[C02] Kew: Artocarpus altilis, general information

[C04] Bligh, Providence journal: 11-13 February 1793, transcription

Deborah Griscom Passmore's 1906 USDA watercolour records the Victor variety of roselle from Miami, Florida. A named plant, artist, place and date replace the anonymous beverage advertisement. Passmore, Deborah Griscom, 1840-1911 · 1906 · Public domain.

Image catalogue, original and reuse terms: Pomological Watercolor POM00007234.jpg

[C05] UF/IFAS Gardening Solutions: Roselle

[C06] UF/IFAS: Roselle, HS1517

Rumphius's 1747 botanical plate provides a historical comparison for banana structure. Follow the leaf bases and flowering/fruiting structures; do not interpret an engraved line as a measured planting distance. Rumphius · 1747 · Public domain.

Image catalogue, original and reuse terms: Musa Simiarium Rumphius 1747 Herbarium amboinense 5 61.png

[C07] UF/IFAS: Banana growing in the Florida home landscape

Historical papaya plate from Köhler's medicinal-plant publication. Use the botanical structures as a reading aid; the publication title does not establish a treatment claim. Franz Eugen Köhler, Köhler's Medizinal-Pflanzen · 1897 · Public domain.

Image catalogue, original and reuse terms: Carica papaya - Köhler-s Medizinal-Pflanzen-029.jpg

[C08] UF/IFAS: Tropical and subtropical fruit crops for the home landscape

[C09] CIP Genebank: Andean roots and tubers

[C10] UNESCO, decision 19.COM/7.B.32: cassava bread

[C12] FAO/WHO Codex: code for reducing hydrocyanic acid in cassava, CXC 73-2013

[D1129] [D1140] [D1146]

ON THIS PAGE

USDA United States Department of Agriculture · **UF/IFAS** University of Florida / Institute of Food and Agricultural Sciences · **CIP** Cast-in-place concrete · **UNESCO** United Nations Educational, Scientific and Cultural Organization · **CXC** Codex code of practice

[D1129] [D1132] [D1127]

[D1133] [D1135]

TERMS ON THIS PAGE EDEN ISS: Evolution and Design of Environmentally closed Nutrition-Sources / International Space Station The greenhouse project tested controlled crop production in an Antarctic environment for space-related research.

TERMS ON THIS PAGE UK: United Kingdom Identifies the country of the source, guidance or institution.

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CC BY 4.0: Creative Commons Attribution 4.0 International A licence permitting reuse, subject to attribution and its other terms.

TERMS ON THIS PAGE RHS: Royal Horticultural Society The British horticultural organisation credited with the plant-growing guidance.

g: Gram A unit of mass equal to one thousandth of a kilogram.

TERMS ON THIS PAGE cm: Centimetre A unit of length equal to one hundredth of a metre.

mL: Millilitre One thousandth of a litre, a unit of volume.

TERMS ON THIS PAGE NC State: North Carolina State University The United States university credited with horticultural or extension information.

cm: Centimetre A unit of length equal to one hundredth of a metre.

mm, Millimetre A unit of length equal to one thousandth of a metre. mL, Millilitre One thousandth of a litre, a unit of volume. g, Gram A unit of mass equal to one thousandth of a kilogram. D + number, Book evidence record The number identifies a source

entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE WHO: World Health Organization The United Nations agency for international public health.

TERMS ON THIS PAGE NCCIH: National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches.

TERMS ON THIS PAGE MPF: Contributor name MPF This is the credited catalogue or photographer account. An expanded personal name is not supplied in the source record.

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TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

TERMS ON THIS PAGE GBIF: Global Biodiversity Information Facility An international network that publishes species-occurrence and collection data.

ON THIS PAGE

ISS International Space Station; EDEN ISS is the name of an Antarctic greenhouse research project · **BY-SA** Creative Commons Attribution-ShareAlike · **BY** Attribution condition in a Creative Commons licence

GPS, Global Positioning System A satellite system used to estimate a receiver's location and time. m, Metre The base unit of length in the International System of Units. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

SIB: Sistema de Información de Biodiversidad The biodiversity information system of Argentina's National Parks Administration.

APN, Administración de Parques Nacionales Argentina's National Parks Administration. URL, Uniform resource locator The web address that leads to a source or record. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

USDA, United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here. NCCIH, National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches.

TERMS ON THIS PAGE EMA: European Medicines Agency The European Union body evaluating medicines and issuing the cited reference.

TERMS ON THIS PAGE NIH: National Institutes of Health The United States biomedical research agency and its associated institutes.

TERMS ON THIS PAGE g: Gram A unit of mass equal to one thousandth of a kilogram.

TERMS ON THIS PAGE PKM: Periyakulam cultivar series The numbered names PKM 1 and PKM 2 identify moringa selections associated with the Periyakulam breeding programme in India.

m^2, Square metre The area of a square with sides one metre long. TNAU, Tamil Nadu Agricultural University The Indian university credited with the crop-growing source. m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

RHS: Royal Horticultural Society The British horticultural organisation credited with the plant-growing guidance.

TERMS ON THIS PAGE SIB: Sistema de Información de Biodiversidad The biodiversity information system of Argentina's National Parks Administration.

kg: Kilogram A unit of mass equal to one thousand grams.

L, Litre One cubic decimetre of volume, or one thousand millilitres. m, Metre The base unit of length in the International System of Units. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

FDA, Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

ON THIS PAGE

m^2 square metre, an area unit · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source

TERMS ON THIS PAGE HSE: Health Service Executive Ireland’s public health service, credited here with patient guidance.

TERMS ON THIS PAGE NHS: National Health Service The public health service named as the source of the guidance in the United Kingdom.

NCCIH: National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches.

TERMS ON THIS PAGE NCHFP: National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

g, Gram A unit of mass equal to one thousandth of a kilogram. D + number, Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE FAO: Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference.

USDA, United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here. mm, Millimetre A unit of length equal to one thousandth of a metre. D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references. mL, Millilitre One thousandth of a litre, a unit of volume. L: Litre One cubic decimetre of volume,

or one thousand millilitres. g, Gram A unit of mass equal to one thousandth of a kilogram. D + number, Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

TERMS ON THIS PAGE WGS84: World Geodetic System 1984 A geodetic reference system used to express and compare geographic coordinates.

GPS: Global Positioning System A satellite system used to estimate a receiver’s location and time.

TERMS ON THIS PAGE m: Metre The base unit of length in the International System of Units.

Argentina: Centro Nacional de Intoxicaciones, Hospital Posadas, 0800-333-0160. The official service lists a free national line operating 24 hours every day. Checked 23 October 2026. Elsewhere, use the appropriate local poison service. [D231]

TERMS ON THIS PAGE mL: Millilitre One thousandth of a litre, a unit of volume.

TERMS ON THIS PAGE ID: Identifier or identification A label that distinguishes one record, object or sample from another.

TERMS ON THIS PAGE DNA: Deoxyribonucleic acid The molecule carrying hereditary information in cells.

[D977] Related chapter Continue reading

ON THIS PAGE

DNA Deoxyribonucleic acid, the molecule that carries genetic information; the label appears in the supplied collage

TERMS ON THIS PAGE CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

ID: Identifier or identification A label that distinguishes one record, object or sample from another.

TERMS ON THIS PAGE kg: Kilogram A unit of mass equal to one thousand grams.

TERMS ON THIS PAGE HLHJ: Contributor name HLHJ The source credits the diagram simplification to this account. A personal-name expansion is not supplied.

TERMS ON THIS PAGE FEMA: Federal Emergency Management Agency The United States agency that provides the cited emergency-preparedness guidance.

TERMS ON THIS PAGE RO: Reverse osmosis A membrane separation process that uses pressure to separate a water stream from dissolved substances.

UV: Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light.

CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. L, Litre One cubic decimetre of volume, or one thousand millilitres.

TERMS ON THIS PAGE UCLA: University of California, Los Angeles The university credited in the research or collection record.

TERMS ON THIS PAGE CC BY: Creative Commons Attribution A reuse licence requiring credit to the creator and compliance with its terms.

TERMS ON THIS PAGE L: Litre One cubic decimetre of volume, or one thousand millilitres.

TERMS ON THIS PAGE AySA: Agua y Saneamientos Argentinos The water and sanitation provider named in the Buenos Aires context.

TERMS ON THIS PAGE U.S.: United States of America Identifies the country or jurisdiction of the source, price or institution.

TERMS ON THIS PAGE UT: Universal Time A time reference used in astronomical records so observers can compare an event across locations.

UTC: Coordinated Universal Time The international time reference from which a local time-zone offset is measured.

TERMS ON THIS PAGE h: Hour A unit of time equal to sixty minutes.

TERMS ON THIS PAGE UTC: Coordinated Universal Time The international time reference from which a local time-zone offset is measured.

TERMS ON THIS PAGE BCE: Before the Common Era Dates years before the Common Era in the historical calendar.

TERMS ON THIS PAGE km: Kilometre A length of one thousand metres.

TERMS ON THIS PAGE WGS: World Geodetic System 1984 A geodetic reference system used to express and compare geographic coordinates.

ON THIS PAGE

BY-SA Creative Commons Attribution-ShareAlike · **BY** Attribution condition in a Creative Commons licence · **UTC** Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event

TERMS ON THIS PAGE SCN: Suprachiasmatic nucleus A small region of the brain involved in coordinating daily biological rhythms.

TERMS ON THIS PAGE URL: Uniform resource locator The web address that leads to a source or record.

FAO: Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference.

TERMS ON THIS PAGE PREDIMED: Prevención con Dieta Mediterránea The name of a Spanish prevention trial studying a Mediterranean dietary pattern. It identifies the study discussed in the citation.

TERMS ON THIS PAGE MS: Manuscript or manuscripts A library catalogue abbreviation identifying an unpublished document or a manuscript collection.

MS, Manuscript or manuscripts A library catalogue abbreviation identifying an unpublished document or a manuscript collection. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE ID / IDs: Identifier or identification A label that distinguishes one record, object or sample from another.

TERMS ON THIS PAGE PAS: Library shelfmark prefix PAS In the Zürich catalogue the prefix and following numbers locate the Basel broadside. The cited record supplies the shelfmark.

DOI: Digital object identifier A stable identifier used to find a publication or other registered work.

cm, Centimetre A unit of length equal to one hundredth of a metre. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TERMS ON THIS PAGE IGN: Instituto Geográfico Nacional Argentina's national mapping agency and the source for the cartographic or survey reference.

INTI: Instituto Nacional de Tecnología Industrial Argentina's industrial technology institute. It provides technical and measurement services.

NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

TERMS ON THIS PAGE BEN: Boletín Epidemiológico Nacional Argentina's national epidemiological bulletin reporting disease surveillance information.

TERMS ON THIS PAGE EU: European Union The political and economic union responsible for the European reference or rule cited.

SI, International System of Units (Système international d'unités) The common measurement system built on units such as the metre, kilogram and second. VAT, Value-added tax A consumption tax collected in stages. Whether a price includes it affects comparisons.

ON THIS PAGE

SCN Suprachiasmatic nucleus, a brain region coordinating daily rhythms · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **SI** Système international d'unités, the International System of Units

USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

TERMS ON THIS PAGE MRes: Master of Research A postgraduate research qualification appearing in a credential.

TERMS ON THIS PAGE RAE: Real Academia Española The Spanish-language academy responsible with partner academies for the cited reference.

TERMS ON THIS PAGE DLE: Diccionario de la lengua española The Spanish-language dictionary published by the Spanish Academy and partner academies.

TERMS ON THIS PAGE NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

TERMS ON THIS PAGE NOAA: National Oceanic and Atmospheric Administration The United States agency supplying ocean, weather and climate records.

NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

TERMS ON THIS PAGE infj: Introversion, intuition, feeling and judging A four-letter Myers-Briggs personality preference label used as the author's self-description in this manuscript.

TERMS ON THIS PAGE AC: Ascendant In this astrological sky diagram it marks the rising or eastern horizon point.

TERMS ON THIS PAGE PPE: Personal protective equipment Equipment worn to reduce exposure to a stated hazard.

TERMS ON THIS PAGE CERES: Centre for Education and Research in Environmental Strategies The Melbourne environmental education site pictured in the rainwater example.

TERMS ON THIS PAGE UNNE: Universidad Nacional del Nordeste Argentina's National University of the Northeast.

TERMS ON THIS PAGE TEM: Transverse electromagnetic Describes a wave whose electric and magnetic fields are perpendicular to its propagation direction.

TERMS ON THIS PAGE EROS: Earth Resources Observation and Science The United States Geological Survey centre that manages satellite land-imagery records.

TERMS ON THIS PAGE INRI: Iesus Nazarenus Rex Iudaeorum The Latin inscription means Jesus of Nazareth, King of the Jews. The esoteric illustration also gives it a different four-word Latin reading.

TERMS ON THIS PAGE AIDS: Acquired immunodeficiency syndrome The advanced stage of infection by the human immunodeficiency virus.

TERMS ON THIS PAGE CPE: Constant phase element An impedance model element used to represent a response with nearly constant phase over a range of frequencies.

ON THIS PAGE

AC Ascendant, the rising point in this astrological chart · **CERES** Centre for Education and Research in Environmental Strategies, Melbourne · **TEM** Transverse electromagnetic, the wave label in this diagram · **INRI** Iesus Nazarenus Rex Iudaeorum, Jesus of Nazareth, King of the Jews · **CPE** Constant-phase element, an empirical equivalent-circuit element with a frequency-independent phase angle under its stated model

TERMS ON THIS PAGE Wh: Watt-hour A unit of energy. One watt delivered for an hour supplies one watt-hour.

TERMS ON THIS PAGE ITER: ITER, originally International Thermonuclear Experimental Reactor The international fusion experiment. The project also uses the Latin word iter, meaning a way or journey.

EIS: Electrochemical impedance spectroscopy A method that probes how an electrochemical cell responds to small alternating signals at different frequencies.

TERMS ON THIS PAGE SEPA: Seguimiento de la Producción Agropecuaria An Argentine agricultural monitoring service that makes satellite and weather observations available for production monitoring.

TERMS ON THIS PAGE USCCB: United States Conference of Catholic Bishops The institution responsible for the cited religious text or translation.

TERMS ON THIS PAGE LED: Light-emitting diode An electronic component that emits light when electric current passes in its conducting direction.

TERMS ON THIS PAGE Hz: Hertz Frequency in cycles per second.

TERMS ON THIS PAGE JPL: Jet Propulsion Laboratory The NASA laboratory responsible for the Horizons solar-system ephemeris service.

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[D1001] [D1002] [D1003] Related chapter Continue reading

TERMS ON THIS PAGE radar : Radio detection and ranging A system that uses reflected radio waves to determine a target’s distance or motion.

ON THIS PAGE

EIS Electrochemical impedance spectroscopy: measurement of electrical response as a function of frequency · **JPL** Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA · **NASA** National Aeronautics and Space Administration

TERMS ON THIS PAGE N·m: Newton-metre A unit of turning moment. A one-newton force perpendicular to a one-metre arm produces one newton-metre.

N: Newton The unit of force. One newton accelerates one kilogram at one metre per second squared.

TERMS ON THIS PAGE m^3 / m3: Cubic metre The volume of a cube with edges one metre long. It holds one thousand litres.

N·m, Newton-metre A unit of turning moment. A one-newton force perpendicular to a one-metre arm produces one newton-metre. N, Newton The unit of force. One newton accelerates one kilogram at one metre per second squared.

A: Ampere The unit of electric current. One ampere transfers one coulomb of charge per second.

W: Watt The unit of power. One watt equals one joule of energy transferred per second.

NRCS: Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information.

TERMS ON THIS PAGE CC0: Creative Commons Zero A public-domain dedication by which a rights holder waives rights to the extent legally possible.

TERMS ON THIS PAGE IFAS: Institute of Food and Agricultural Sciences The University of Florida institute that provides agricultural research and extension.

TERMS ON THIS PAGE PPOC : Prints and Photographs Online Catalog The Library of Congress online catalogue for pictorial collections.

TERMS ON THIS PAGE GSM : Global System for Mobile Communications A cellular communication standard used by the pictured device to send a message.

GPS : Global Positioning System A satellite system used to estimate a receiver's location and time.

TERMS ON THIS PAGE GPS : Global Positioning System A satellite system used to estimate a receiver's location and time.

TERMS ON THIS PAGE NPS : National Park Service The United States agency responsible for the park, site or historical interpretation cited here.

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TERMS ON THIS PAGE NHTSA: National Highway Traffic Safety Administration The United States road and vehicle safety agency.

TERMS ON THIS PAGE DC: Direct current Electric current that flows in one direction. A battery provides a familiar example.

mA: Milliampere One thousandth of an ampere, a unit of electric current.

W, Watt The unit of power. One watt equals one joule of energy transferred per second. V, Volt The unit of electric potential difference.

ON THIS PAGE

m^3 cubic metre, a volume unit · **CC0** Creative Commons Zero, a public-domain dedication tool · **PPOC** Prints and Photographs Online Catalog, Library of Congress · **NPS** National Park Service, United States · **BY-SA** Creative Commons Attribution-ShareAlike · **NHTSA** National Highway Traffic Safety Administration, the United States road-vehicle safety agency

A, Ampere The unit of electric current. One ampere transfers one coulomb of charge per second. D + number, Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

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m^2 - Square metre. The area of a one-metre by one-metre square.

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N - Newton. The unit of force; one newton accelerates a one-kilogram mass by one metre per second squared.

NASA - National Aeronautics and Space Administration. The United States agency whose Glenn Research Center supplies the flight references.

T - Line tension. The pull transmitted by the flying line in this example.

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m - Metre. The base length unit of the International System of Units.

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F - Force. A mechanical push or pull; its meaning is stated for each formula.

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m^2 square metre, an area unit

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mm - Millimetre. One thousandth of a metre.

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m - Metre. The unit of line length in the example.

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Public Domain Mark. The engraver is catalogued as active about 1800. The complete plate contains several views and numbered parts.

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Creative Commons Zero 1.0. Both ends and the crossing turn remain visible. USCG expands to United States Coast Guard.

READER 37 / 49

Creative Commons Zero 1.0. Red line forms the bight. The blue line passes through, around both legs, then under its own standing part.

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°C - Degrees Celsius. The temperature unit used for the room air.

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CM - Centre of mass. Panel 21 calculates a mass-weighted position. Upper-case CM here is not the centimetre unit cm.

P - Force, power, momentum or effort, depending on the panel. P means power in panel 15, linear momentum in panel 18, and applied effort in several machine panels.

W - Load, work or watt, depending on context. W names a load in the inclined-plane and machine panels, work in panels 14-15, and the watt as a power unit.

J - Impulse or joule, depending on context. Panel 19 uses J for impulse, measured in newton-seconds. The same letter is the joule unit elsewhere.

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cm - Centimetre. A unit of length equal to one hundredth of a metre.

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TERMS ON THIS PAGE USCG: United States Coast Guard The maritime service credited in the source or training material.

USCG - United States Coast Guard. The maritime service credited in the source or training material.

USCG PTC Developer CC0 1.0

PTC Developer, Perfo The United States Coast Gu The credit identifies a role CC0, Creative Commons Zero A public-domain dedication by which a rights holder waives rights to the extent legally possible.

PTC Developer - Performance Technology Center developer. The United States Coast Guard’s traini credit identifies a role rather than an individual photographer.

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Checked 6 November 2026. Source dates refer to the described object or publication, as stated.

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°C degree Celsius, a temperature unit · **CC0** Creative Commons Zero, a public-domain dedication tool · **USCG** United States Coast Guard · **PTC** Performance Technology Center in the Coast Guard creator credit

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POSGAR - Posiciones Geodésicas Argentinas. Argentine Geodetic Positions; 07 identifies the 2007 reference-frame designation.

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cm - Centimetre. One hundredth of a metre.

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Chapter contents Book page 637 ME1 · open source record Continue reading

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Chapter contents Book page 637 ME2 · open source record Continue reading

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m^2 - Square metre. Area of a one-metre by one-metre square.

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m^2 square metre, an area unit

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OLED - Organic light-emitting diode. The source sheet uses this term for its display technology.

PCB - Printed circuit board. The support and electrical interconnection board for components.

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Chapter contents Book page 641 Full-size source image EU1 · open source record

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Chapter contents Book page 641 Full-size source image US2 · open source record

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SVG - Scalable Vector Graphics. An editable vector image format; geometry and text can be enlarged without bitmap pixel blocks.

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ZeusC - Supplied archive mark. Separate from the printed RDCTD.PRO source mark.

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OLED Organic light-emitting diode, the display technology named on the supplied compass poster · **PCB** Printed circuit board, the board carrying conductor tracks and electronic components

RDCTD.PRO - Printed source mark. The poster identifies this website mark; an individual designer is not established.

OP - Undefined source field. The poster does not define this label. No expansion is invented.

CCTV - Closed-circuit television. A label in the original tactical sketch, not part of this book's garden survey.

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IGN - Instituto Geográfico Nacional. Argentina's national mapping agency and the source for the cartographic or survey reference.

USGS - United States Geological Survey. The federal science agency providing geologic, water, mapping and Earth-observation data.

US - United States of America. Identifies the country or jurisdiction of the source, price or institution.

m - Metre. The base unit of length in the International System of Units.

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USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

D + number - Book evidence record. The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

PDF - Portable Document Format. A file format used to preserve the layout of a document when it is shared or printed.

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SOURCE REGISTER / VERIFIED AND QUALIFIED RECORDS

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CCTV Closed-circuit television, the camera-system abbreviation printed on supplied sheet 088 · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute

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Chapter contents Book page 642 Full-size source image AR4 · open source record

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ID - Identification. A label for establishing which item or record is meant.

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INTI - Instituto Nacional de Tecnología Industrial. Argentina's National Institute of Industrial Technology.

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BOM - Bill of materials. A parts list; its presence does not establish compatibility or performance.

Chapter contents Book page 642 Full-size source image EL1 · open source record

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kg - Kilogram. Mass unit. It is distinct from kilogram-force, a force unit.

V - Volt. Electrical potential-difference unit; six volts is the condition for the cited servo stall value.

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Chapter contents Book page 643 Full-size source image JP1 · open source record

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Chapter contents Book page 644 Full-size source image AR1 · open source record

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BOM Bill of materials, the counted purchase and cut list

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ANMAT - Administración Nacional de Medicamentos, Alimentos y Tecnología Médica. Argentina's national administration for medicines, food and medical technology.

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Chapter contents Book page 645 US2 · open source record WO1 · open source record

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Chapter contents Book page 645 CH1 · open source record CH2 · open source record

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pH - Logarithmic hydrogen-ion activity measure. pH is the negative base-ten logarithm of hydrogen-ion activity. It is not a mass of free alkali.

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Chapter contents Book page 645 US1 · open source record CH1 · open source record

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Chapter contents Book page 647 US4 · open source record CH1 · open source record

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ISO - International Organization for Standardization. ISO is the organization's short name. ISO 456 identifies its free-caustic-alkali analytical standard.

Chapter contents Book page 647 CH3 · open source record CH4 · open source record

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pH A logarithmic measure of hydrogen-ion activity · **ISO** International Organization for Standardization; ISO is its internationally used short name

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Chapter contents Book page 647 Full-size source image US4 · open source record

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Chapter contents Book page 645 Full-size source image US3 · open source record

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EU - European Union. The jurisdiction discussed in the cosmetic-products comparison.

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Chapter contents Book page 645 Full-size source image WO2 · open source record

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pH - Logarithmic hydrogen-ion activity measure. A reading requires suitable sample preparation, calibration and an appropriate instrument.

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g - Gram. A unit of mass equal to one thousandth of a kilogram.

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pH A logarithmic measure of hydrogen-ion activity · **BY-SA** Creative Commons Attribution-ShareAlike

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Chapter contents Book page 649 US10 · open source record Continue reading

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Chapter contents Book page 649 Continue reading

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Chapter contents Book page 649 US2 · open source record Continue reading

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UTC - Coordinated Universal Time. The shared reference time scale. A civil offset of -3 means three hours behind UTC.

Chapter contents Book page 649 AR3 · open source record Continue reading

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NOAA - National Oceanic and Atmospheric Administration. United States agency publishing the cited solar approximation and magnetic-field model.

Chapter contents Book page 649 US2 · open source record US3 · open source record

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INTI - Instituto Nacional de Tecnología Industrial. Argentina's National Institute of Industrial Technology; its time service is identified separately from official civil-time rules.

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URL Uniform Resource Locator · **UTC** Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event

NIST - National Institute of Standards and Technology. United States measurement institute; source of the cited daylight-saving explanation.

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CSV - Comma-separated values. A plain-text table format. Data identity, units and accuracy still depend on the observation record.

SVG - Scalable Vector Graphics. Editable vector drawings that can be enlarged without bitmap pixelation.

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Chapter contents Book page 649 Full-size source image EU1 · open source record

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PDF: Portable Document Format, used for the fixed-layout readers and full book.

IGN: Instituto Geográfico Nacional: 14 December 2020 eclipse in Argentina

NASA: National Aeronautics and Space Administration. km: kilometres. s: seconds. UT: Universal Time.

ARS: Argentine peso, the currency used for the Argentina budget.

USD: United States dollar, the currency used for the United States budget.

EUR: Euro, the currency used for the Spain example within the European Union.

Catalogue / source

NOAA: National Oceanic and Atmospheric Administration, the United States agency operating GOES.

UTC: Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event.

PDF: Portable Document Format, the fixed-layout reading format.

SI: National Institute of Standards and Technology: SI units

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NIST: National Institute of Standards and Technology, the United States measurement institute.

ON THIS PAGE

BY-SA Creative Commons Attribution-ShareAlike · × multiplied by · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **GOES** Geostationary Operational Environmental Satellites · **UTC** Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event · **SI** Système international d'unités, the International System of Units

h: Planck's constant in the matterwave relation; the diagram gives its numerical value and unit.

FDA: Food and Drug Administration, the United States agency whose historical account describes Pennington's work.

A: Ampere, the unit of electric current.

ρ: Rho, the symbol for mass density.

°C: Degree Celsius, a unit of temperature.

W: Watt when written as a unit, equal to one joule per second. W can also denote work inside a defined formula.

I: Moment of inertia in the rotation chapter; electric current in the lamp chapter. The local definition determines the meaning.

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J: Joule, the unit of energy or work; one newton metre.

N: Newton, the force that gives a onekilogram mass an acceleration of one metre per second squared.

RPM: Revolutions per minute, a rotationalspeed unit. Convert to radians per second before using SI rotational equations.

R1330 · Supporting source record

a: The edge length in the geometric examples; its unit must be stated.

DC: Direct current; current has one direction in the steady operating condition used here.

R1332 · Supporting source record

AC: Alternating current in electrical discussions. On the vehicle label "AC compressor", AC means air conditioning; context determines the meaning.

R1333 · Supporting source record

J: Current density on the original Ohm sheet; J is also the unit symbol for joule elsewhere.

R1334 · Supporting source record

S: Conductor crosssectional area in the original sheet's notation, not necessarily the SI unit siemens in that formula.

R1335 · Supporting source record

V: Volt, the unit of electric potential difference; V can also denote the voltage quantity in a formula.

m^2: Square metre, a unit of area.

EN: European Standard, followed by the particular standard number.

INTA: Instituto Nacional de Tecnología Agropecuaria, Argentina's National Institute of Agricultural Technology.

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FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **°C** degree Celsius, a temperature unit · **RPM** Revolutions per minute, a rotation speed unit · **SI** Système international d'unités, the International System of Units · **m^2** square metre, an area unit

L: Litre, a unit of volume.

kW: Kilowatt, one thousand watts.

TUBE: ASTM: A269 stainless-steel tubing

COPPER: Copper Development Association: tube handbook

ASTM: ASTM International, a standards organisation; a standard number is part of a material specification, not proof that a supplied part complies.

TUBE · source COPPER · source

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V: Volt in an electrical measurement; in tyre code 87V, V is the speed-category letter instead.

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Original labels remain visible. New diagrams and source corrections are separate from the original.

R1351 · Supporting source record

INTA: Instituto Nacional de Tecnología Agropecuaria, Argentina's National Institute of Agricultural Technol

M6: Metric thread with nominal 6 mm diameter; pitch and fastener length still need specification.

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Creative Commons Attribution 4.0 https://creativecommons.org/licenses/by/4.0

A: Ampere in an electrical rating; a drawing view letter is only a label.

mV: Millivolt, one thousandth of a volt.

DC: Direct current, electric current in one direction.

ICA: Diller Scofidio + Renfro: Institute of Contemporary Art, Boston

ICA: Institute of Contemporary Art, Boston.

ICA · source

pH: A logarithmic measure of acidity or alkalinity. Its acceptable range depends on the organism and process.

ARS: Argentine peso; local price currency.

USD: United States dollar; local price currency.

EUR: Euro; the currency used for the Spain price example.

ON THIS PAGE

ASTM ASTM International, a standards organisation; a standard number is part of a material specification, not proof that a supplied part complies · **V** volt, electrical potential difference · **mm** millimetre, 0.001 metre · **ICA** Institute of Contemporary Art, Boston · **pH** A logarithmic measure of hydrogen-ion activity

ARS: Argentine peso; local price currency.

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EUR: Euro; the currency used for the Spain price example.

IGN: Instituto Geográfico Nacional, Argentina's National Geographic Institute.

USD: United States dollar; local price currency.

BCE: Before Common Era, a historical date notation.

08B

European-series roller-chain designation with 12.7 mm pitch; a suffix identifies strand count.

2V

Two-frequency geodesic subdivision: each original triangular edge is divided into two before the new vertices are projected to the sphere.

An aluminium alloy designation, not a complete material specification without temper and product form.

A

Ampere, the unit of electric current. In an equation, distinguish the unit A from a node also labelled A.

A-frame

A shelter with two sloping sides meeting at a ridge. Its usable space depends on the pitch and tension.

A3

Paper measuring 297 × 420 mm.

Paper format measuring 297 by 420 millimetres.

A4

Paper size 210 by 297 millimetres.

Paper format measuring 210 × 297 mm.

Paper measuring 210 × 297 mm.

Paper format measuring 210 by 297 millimetres.

Paper format 210 × 297 mm. Print actual-size templates at 100% and verify the scale bar.

A paper size of 210 × 297 mm.

AA

A standard cylindrical battery size designation. It does not mean that every AA cell has the same chemistry or voltage; these builds use two 1.5 V cells.

A standardized battery-size designation, not an acronym. Chemistry and voltage must still be specified.

ON THIS PAGE

CC0 Creative Commons Zero, a public-domain dedication tool · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **BCE** Before the Common Era · **mm** millimetre, 0.001 metre · **V** volt, electrical potential difference · **×** multiplied by · **%** percent, parts per hundred · **AA** A standardized cylindrical battery size designation, not an acronym

AC

Alternating current, or a voltage that varies periodically.

Alternating current, or a varying voltage or current component.

ACH

Air changes per hour: ventilation volume flow divided by the room volume, in compatible units.

ADMET

Absorption, distribution, metabolism, excretion and toxicity.

AH

Anno Hegirae, Islamic calendar year numbering; a lunar-calendar year is not interchangeable with a Common Era year.

AI

Artificial intelligence; a class of computational methods, not an independent guarantee of a claim.

Artificial intelligence; the source figure concerns a computational research agent.

ANMAT

Administración Nacional de Medicamentos, Alimentos y Tecnología Médica, Argentina's regulator for medicines, food and medical technology.

Administración Nacional de Medicamentos, Alimentos y Tecnología Médica, the Argentine national administration named in the cited food resolution.

AP-42

Compilation of Air Pollutant Emissions Factors, the EPA publication series used as a historical process reference.

APN

Administración de Parques Nacionales, Argentina's National Parks Administration. Its research permissions concern its jurisdiction.

ARS

Argentine peso, the currency used in the Argentina budgets.

Argentine peso. Planning amounts are separate from US dollars and euros.

Argentine peso; a currency amount, not a conversion from the other price columns.

Argentine peso.

Argentine peso. The cost column is an independent planning allowance, not an exchange-rate conversion.

Argentine peso; local price currency.

Argentine peso, used here for prices quoted in Argentina.

ON THIS PAGE

AC Alternating current · **ADMET** Absorption, distribution, metabolism, excretion and toxicity · **AH** Anno Hegirae, Islamic calendar year numbering · **AI** Artificial intelligence · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **EPA** Environmental Protection Agency, United States · **APN** Administración de Parques Nacionales · **ARS** Argentine peso · **US** United States

Argentine peso. Amounts in this reader distinguish planning allowances from dated listed prices.

Argentine peso. Price records must retain currency and date.

Argentine peso. A cost record must also state its date and pricing basis.

Argentine peso. Keep the amount, seller, date and payment conditions together.

ATmega328P

Microchip/Atmel microcontroller model identifier; it does not identify every board circuit shown around the chip.

Absolute pressure

Pressure measured relative to vacuum; it differs from gauge pressure measured relative to a local reference such as atmosphere.

Accepted stock

Items inspected and released for a specified use. Rejected items and open purchase orders are counted separately.

Access route

A clear route for entry, exit or reaching supplies, including during loss of normal services.

Accession

A separately identified entry in a germplasm collection, documented with its source and identity. Successive seed lots can be produced from one accession.

A unique collection entry used to preserve an item’s identity and source.

The receiving collection’s formal entry of an object into its holdings. A field number is not an accession number.

An object or collection entry assigned an institutional identity. A barcode is not the same as a collector’s gathering number.

A separately registered item or collection entry.

Achene

A small dry fruit with a single seed. The specks on the outside of a strawberry are a familiar example.

Across corners

The distance between opposite vertices; it is larger than the across-flats dimension for a regular octagon.

Across flats

The distance between two opposite parallel sides of a polygon.

Actuator

A component that changes the controlled system in response to a command.

Ad triangulum

A proportional construction using a triangle to relate dimensions in a drawing. The chosen span sets the size of the geometric figure.

Afocal telescope

An ideal telescope that accepts parallel light and returns parallel light. The thin-lens focal-length sum sets the lens spacing.

Air-control layer

A continuous layer and its sealed connections that limit uncontrolled air movement through the enclosure.

Al

Chemical symbol for aluminium.

AlN

Aluminium nitride, written with chemical element symbols.

Algorithm

A specified sequence of operations. Its usefulness as a solving step depends on the starting case and desired result.

Alkane

A saturated acyclic hydrocarbon; the class has the general formula CnH2n+2.

Allocation

A recorded share of a limited resource assigned under an agreed rule.

Alloy

A metallic material containing more than one element; grade and condition matter.

AlphaFold DB

AlphaFold Protein Structure Database; includes predicted structures and their associated confidence information.

Amendment

Material added to soil to change a specified property. Need and quantity depend on soil and crop.

Anabaptist

A Christian historical movement associated with adult baptism, within which the Amish developed.

Angular magnification

The apparent angle through an instrument divided by the unaided angle. It is different from an area ratio or image resolution.

Anode

The positive electrode in the electrolytic arrangement shown here.

Apparent mass

A mass inferred through a method whose behaviour may differ from the molecule’s true mass.

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DB Database, in the AlphaFold resource name

Application efficiency

The fraction of supplied irrigation water retained beneficially in the crop root zone under the stated conditions. Used to convert net requirement to gross delivery.

Arbitrary unit

A stated relative signal scale without a claimed absolute physical calibration.

Archive plate

A full-frame reproduction accompanied by its identifier, topic connection and an explanation that separates visible content from verified claims.

Argentina

First regional context in these readers; local examples are teaching scenarios unless identified as a documented case.

Aril

A fleshy covering associated with a seed. The edible portion of a lychee is an aril.

Arrope

A concentrated fruit preparation. Its product category, process and storage evidence must be specified; a historical account is not a validated preservation schedule.

Artificial uterus patent

A historical proposal for an artificial gestational system. A patent establishes a documented invention claim, not clinical success.

As-received basis

A result divided by the mass of the sample in its received condition, including its water.

As-received mass

Mass of a material at its measured moisture content before drying. Include the weighing basis when converting a volume or calculating an amendment.

Ash splint

A thin strip separated from suitable ash wood and prepared for weaving. It is not interchangeable with every flat strip of wood.

Assembly drawing

A drawing showing how components relate in a complete mechanism; it does not by itself establish a tested load or operating rating.

Atrium

A principal interior space of a Roman house; its roof arrangement varied.

Attribution

An assignment of a work, statement or image to a named source or creator. The assignment itself may need verification.

Au

Chemical symbol for gold, atomic number 79. A colour cue does not establish purity.

Azimuth

A direction measured around the horizon from a stated reference.

B

Billion, 10^9, in the poster's English short-scale magnitude notation.

B folio

The original book reference used for this continuation. B790 is a source folio, not the page number of this new reader.

B, D, F, L, R, U

Back, down, front, left, right and up face positions in a declared holding frame.

BAB

Herbarium code used for the INTA collection at Castelar. It identifies a collection, not a plant name.

BCE

Before the Common Era, used in historical date labels.

Before the Common Era.

Before Common Era, a convention for historical dates.

Before Common Era, a historical date notation.

Before the Common Era, used for calendar dates before year 1 CE.

BIPM

Bureau International des Poids et Mesures, the international bureau for weights and measures.

Bureau international des poids et mesures, the International Bureau of Weights and Measures.

BOM

Bill of materials: the quantities, specifications and costs needed for a defined build.

Bill of materials, a counted list of parts and purchased items.

Barcode

A machine-readable object identifier. Preserve leading zeros, such as 02444396.

An institutional identifier printed or encoded for a specimen or object. Preserve leading zeros.

Barter

Direct exchange of specified goods or services under an agreed quantity, condition and delivery.

Baseline

A fixed measurement reference, or an initial set of observations for comparison.

Basionym

The earlier name on which a new nomenclatural combination is based.

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **BCE** Before the Common Era · **CE** Common Era, historical year notation · **BIPM** Bureau international des poids et mesures, the International Bureau of Weights and Measures · **BOM** Bill of materials, the counted purchase and cut list

Bast fibre

Plant fibre obtained from tissues in the stem, as in flax.

Batch

Material prepared together using the same recorded process and conditions.

Bijection

A one-to-one mapping with no lost or duplicated positions. Each legal move permutes the stickers.

Bill of materials

An itemised account of required materials and components, with quantities and specifications.

BindingDB

A database of measured binding-affinity data.

Biopython

Name of an open-source biological-computation software collection.

Black Paintings

The group of paintings made by Goya on the walls of his home, including Saturn, later transferred to canvas.

Blotter

An absorbent layer used to take moisture away from a specimen packet during pressing.

An absorbent paper layer that takes moisture from the specimen packet. It is different from the ventilator.

Botanical family

A taxonomic group used in crop planning to recognise related plants and possible shared hosts. Different common names do not necessarily mean different families.

Botanical name

A scientific name identifying a plant taxon more precisely than an ambiguous common name.

Bowditch

A traverse adjustment that distributes coordinate corrections in proportion to leg length under its stated measurement assumptions.

Branch

A connection from a shared route to a particular fixture or space.

Brassicaceae

The plant family containing cabbage, broccoli and radish. A radish planted between main crops must still be counted in the family history.

Bridle

Lines connecting the flying line to selected points on a kite, distributing the pull and affecting its attitude.

Bulk density

Mass of a loose material divided by the volume it occupies, including spaces between particles. Identify its packing and moisture condition.

Butt joint

A connection in which the end of one piece meets the face or edge of another.

C

Chemical symbol for carbon when used in a chemical formula.

CAA

Código Alimentario Argentino, the Argentine Food Code.

CAD

Computer-aided design; drawing or modelling with computer software.

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CCA

Canadian Centre for Architecture.

ON THIS PAGE

CAA Código Alimentario Argentino, the Argentine Food Code · **CAD** Computer-aided design · **BY** Attribution condition in a Creative Commons licence · **BY-SA** Creative Commons Attribution-ShareAlike · **CC0** Creative Commons Zero, a public-domain dedication tool

CCTV

Closed-circuit television, the camera-system abbreviation printed on supplied sheet 088.

CD

Drag coefficient; dimensionless when the reference convention is stated.

CE

Common Era, the year numbering used for the manuscript comparison.

Common Era, a convention for historical dates.

Common Era, a historical date notation.

Common Era, the calendar era used for modern dates.

CERN

European Organization for Nuclear Research; its acronym comes from the historical French Conseil européen pour la recherche nucléaire. It is not an EU agency.

CF

Carbon fibre; PEEK-CF denotes polyetheretherketone reinforced with carbon fibre.

CFRP

Carbon fibre reinforced polymer.

CG

Centre of gravity; the point through which resultant weight acts in a uniform gravitational field.

CHOP

Children’s Hospital of Philadelphia, the institution associated with the cited lamb study.

CHSH

Clauser, Horne, Shimony and Holt: the surnames attached to a commonly used Bell inequality.

CIRSOC

Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles, the Argentine national civil-works safety-regulations research centre.

Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles, the Argentine structural-regulation centre.

Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles, the Argentine centre associated with the structural regulations cited here.

CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora; trade documentation does not replace all domestic keeping permissions.

ON THIS PAGE

CCTV Closed-circuit television, the camera-system abbreviation printed on supplied sheet 088 · **CERN** European Organization for Nuclear Research; its acronym comes from the historical French Conseil européen pour la recherche nucléaire · **EU** European Union · **CG** Centre of gravity · **CHSH** Clauser, Horne, Shimony and Holt · **CIRSOC** Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles · **CITES** Convention on International Trade in Endangered Species of Wild Fauna and Flora

CL

Lift coefficient; dimensionless when the reference convention is stated.

CNC

Computer numerical control; machine motion directed by a program.

CONICET

Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina's national scientific and technical research council.

CORD

Herbarium code for the Museo Botánico de Córdoba collection.

COSMIC

Catalogue of Somatic Mutations in Cancer.

CPE

Constant-phase element, an empirical equivalent-circuit element with a frequency-independent phase angle under its stated model.

CPSC

United States Consumer Product Safety Commission.

CSV

Comma-separated values, a plain-text table exported by the workshop tools.

Comma-separated values, a plain-text table format used for exported measurements and costs.

Comma-separated values; a plain-text table format. Decimal punctuation and field separators must be declared.

Comma-separated values, a plain tabular format used for exported material bills.

Calibration

A documented relationship between indications and references under stated conditions.

A documented relationship between indications and reference values under stated conditions; it is not merely an adjustment.

A documented relationship between an instrument indication and a reference under stated conditions. A zero check alone is not full calibration.

Text arranged to contribute a visible shape.

Calyx

The group of sepals surrounding a flower; in roselle it enlarges around the developing capsule.

Cap iron

A component bearing on a hand-plane iron. Bailey's 1867 patent changes its contact to restrain a thin cutting iron.

ON THIS PAGE
CNC Computer numerical control; machine motion directed by a program · **CPE** Constant-phase element, an empirical equivalent-circuit element with a frequency-independent phase angle under its stated model · **CSV** Comma-separated values

Cartouche

A framed area on a map or print containing a title, dedication, scale or other inscription. Its text can help distinguish editions.

Catalogue number

A code assigned to an object or record in a particular collection. Keep it with the institution code.

Catchment

A surface or area draining water to a particular collection point.

Cathode

The negative electrode in the electrolytic arrangement shown here; electrode signs depend on system context.

CellxGene

Name of a single-cell data exploration resource.

Centre-to-centre length

The distance between defined joint centres; connector offsets can make the physical cut length different.

Centreline dimension

Distance between specified geometric reference lines or nodes, which may differ from a physical cut length.

Chatter

Vibration during cutting that can spoil a surface. Bailey’s patent discusses it in a hand plane.

Circadian rhythm

An approximately daily biological rhythm. Light and other time cues help coordinate internal timing with the environment. [D299]

Cistern

A storage structure for water; its access, inlet, outlet and overflow need separate identification.

Cladode

A flattened or otherwise leaf-like stem; the green pad of a prickly pear is an example.

Cleavage

Preferred splitting along particular directions related to a mineral’s structure.

ClinVar

NCBI archive of relationships among human genetic variants and reported phenotypes; NCBI means National Center for Biotechnology Information.

Clinical endpoint

A defined health outcome measured in a study, such as a specified symptom score or event.

Clinical evidence

Research evidence involving people; its relevance depends on the study and the preparation tested.

Closure

The comparison of recorded inputs and outputs within a stated accounting boundary.

Closure error

The difference between recorded input and recorded output for the chosen boundary, often expressed relative to input.

CnH2n+2

General formula for an acyclic saturated hydrocarbon, an alkane. It does not describe every hydrocarbon.

Cold chain

Continued maintenance of the temperatures needed for chilled or frozen products.

Collection event

A dated act of collecting or observing at a particular place. Several sheets may represent one gathering.

Collector number

The field number attached to one gathering and carried across its documented duplicates.

Common examination

An examination shared by pupils from several schools. In Bullitt County, pupils came to the courthouse for the county examination.

Common-cause failure

One event or shared dependency disabling several resources. Two pumps on one failed electrical panel do not provide independent service.

Commutator

Here A B A' B', executed left to right. It measures the difference between performing A then B and B then A.

Compluvium

The roof opening associated with the rain-receiving arrangement described here.

Composite soil sample

Sample made by combining subsamples from a defined, comparable area and depth for a specified analysis.

Compost

Managed decomposed organic material. Appearance alone does not prove nutrient content or pathogen reduction.

Compound leaf

A leaf made of several leaflets attached along a shared structure. Leaflet count is not whole-leaf count.

Computus

A rule-based calculation of Easter. Ecclesiastical dates and lunar tables need not equal observations of the sky.

Contamination

Unwanted biological, chemical or physical material affecting suitability for an intended use.

Control

A comparison condition used to help isolate the effect of a change.

Coordinate uncertainty

The radius in metres around the stated coordinates that encompasses the possible location.

Corm

A short, thickened underground stem that stores reserves. Taro is a familiar food example.

A short, swollen underground stem; distinguish it from roots.

Cormel

A small lateral corm, including those harvested from cultivated tannia.

A smaller corm arising alongside a main storage stem.

Corner

A piece carrying three coloured facelets on a standard 3 × 3 cube.

Cosmological map

An image organizing a tradition’s account of the world. Its historical importance does not establish surveyed geography.

Counts

Units of the least significant displayed digit in an instrument specification. Their voltage value depends on range and resolution.

Cover crop

A living crop grown partly or primarily for soil or management benefits during a planned interval.

Crop family

A botanical grouping relevant to rotation and shared pest or disease concerns.

Crop family rotation

Planned sequence of botanical families on a permanent plot, recorded with dates and the actual crops grown.

Crop rotation

A planned sequence of crops through time on an identified piece of ground, recorded with botanical families and relevant host intervals.

Cropped area

The ground assigned to crops, excluding the paths and other service spaces included in a complete working footprint.

Cu

Chemical symbol for copper.

ON THIS PAGE
× multiplied by

CuCrZr

Copper-chromium-zirconium alloy designation.

Cubie

Informal name for an individual small piece. A visible facelet is a surface of a piece, not the whole piece.

Cucurbitaceae

The family containing cucumber, pumpkin and squash; one of the four main-family groups in the worked garden example.

Cultivar

A named cultivated plant variety selected for particular characteristics.

Curing bay

An identified place for a compost batch to finish after active inputs have ceased. Its capacity and release date depend on that lot.

Cyanotype

A photographic process producing blue images through light-sensitive iron compounds. Atkins used contact impressions of botanical material.

Cypsela

A dry one-seeded fruit characteristic of the daisy family; often loosely called an achene.

DB

Database. A database name does not by itself specify how its entries were obtained.

DC

Direct current, or a voltage with a constant polarity.

Direct current, or the constant-polarity component of a voltage or current.

Direct current.

Direct current. The abbreviation also labels a meter mode for steady-polarity voltage measurements.

Direct current, current with a stated direction; the meter setting used for the thermoelectric voltage test.

DESeq2

Name of a software package for differential analysis of count data; do not treat the name as a measurement unit.

DIN

Deutsches Institut für Normung, the German Institute for Standardization.

DM

Dry matter; the portion of a feed excluding its water.

ON THIS PAGE
DC Direct current · DIN Deutsches Institut für Normung, the German Institute for Standardization

DMM

Digital multimeter, an instrument with selectable measurement functions.

DNA

Deoxyribonucleic acid.

DOI

Digital object identifier, a persistent reference to a publication or dataset.

DPM

The supplied sheet's module designation; no expansion is established by the file.

DRDY

Data ready, a signal indicating a new sensor measurement is available.

DTT

Dithiothreitol, a reducing agent that can break disulfide connections under suitable conditions.

Datum

A stated reference point or level from which measurements are taken.

A reference framework for coordinates. Record the framework actually used; do not guess it from the number of decimal places.

Decortication

Removal or shedding of outer bark. The species epithet decorticans refers to bark shedding.

Denaturation

Loss of a protein's native higher-order structure; not necessarily cleavage of its peptide chain.

Denomination of origin

A protected product designation connected to a defined origin and specification.

Density

Mass divided by volume; the units and measurement method must be stated.

Determination

An identification of a specimen by a named person at a stated time, with its qualification or reference.

An identification recorded for a specimen, with the determiner and date when available.

DiffDock

Name of a computational molecular-docking method.

Disulfide bond

A covalent sulfur-sulfur connection that can link parts of a protein or different chains.

ON THIS PAGE

DMM Digital multimeter, an instrument with selectable electrical measurement functions · **DNA** Deoxyribonucleic acid, the molecule that carries genetic information; the label appears in the supplied collage · **DOI** Digital object identifier · **DRDY** Data ready, a signal indicating a new sensor measurement is available · **DTT** Dithiothreitol, a reducing agent

Dodecahedron

A polyhedron with 12 pentagonal faces, 30 edges and 20 vertices in its regular form.

Drupe

A fruit with a fleshy region and a hard inner fruit wall, or stone, enclosing the seed.

A fruit whose fleshy part surrounds a hard stone enclosing the seed.

Dry basis

A result divided by dry-matter mass rather than the original wet sample mass.

Dry matter

Feed mass after excluding water. Forage balances compare dry matter supply and demand under stated assumptions.

Duplicate

A separate specimen from the same gathering. It is not an independent visit or necessarily identical material.

ECD

Equivalent circular diameter, here the diameter of a circle with the same projected area as the measured object.

ECHA

European Chemicals Agency.

EDA

Exploratory data analysis: examination of a dataset’s structure and unusual values before selecting a model.

EIS

Electrochemical impedance spectroscopy: a small alternating electrical perturbation is used to measure frequency-dependent response.

Electrochemical impedance spectroscopy: measurement of electrical response as a function of frequency.

EMG

The supplied sheet’s term electromagnetic gravitic field modulation. No established performance is implied by repeating its label.

EN

European Standard, used in identifiers such as EN 1995.

EPA

Environmental Protection Agency, United States.

ESA

European Space Agency, an intergovernmental agency whose membership is not identical to the EU.

ON THIS PAGE

ECD Equivalent circular diameter, here the diameter of a circle with the same projected area as the measured object · **EIS** Electrochemical impedance spectroscopy: measurement of electrical response as a function of frequency · **EN** European Standard, followed by the particular standard number · **EPA** Environmental Protection Agency, United States · **EU** European Union

ESO

European Southern Observatory, an intergovernmental astronomy organisation with observing facilities in Chile.

EU

European Union. Other European countries are not automatically EU members.

European Union.

European Union, a present-day regional comparison, not an 1827 political setting.

European Union. Hungary's 1974 invention predates Hungary's EU membership.

European Union. It is not synonymous with all of geographic Europe.

European Union. The United Kingdom is outside the EU.

EUR

Euro; the European budget uses Spain as its shopping context.

Euro. Spain is the European Union purchase-planning example in this reader.

Euro; Spain is the European Union example used for the planning bill.

Euro.

Euro. The European cost column is an illustrative planning allowance.

Euro; the currency used for the Spain price example.

Euro, the currency used for the European price example.

Euro. An empty European quotation field means unquoted, not free.

Euro. A euro price should name the country, seller and conditions of the offer.

Euro. Countries outside the euro area require their own currency and local quote.

Edge

A piece carrying two coloured facelets.

Emulsion

A dispersion of droplets of one liquid in another; visible mixing is not proof of a molecular solution.

Extrapolation

Estimating beyond reference points, where the fitted relationship may no longer apply.

F

Fresh input rate in the synthetic recycle calculation.

FAO

Food and Agriculture Organization of the United Nations.

ON THIS PAGE

ESO European Southern Observatory, an intergovernmental astronomy organisation with observing facilities in Chile · **EU** European Union · **EUR** Euro · **FAO** Food and Agriculture Organization of the United Nations

FDA

Food and Drug Administration, the United States regulatory agency named in the dated source.

United States Food and Drug Administration.

FIJI

Fiji Is Just ImageJ, a distribution of the ImageJ image-analysis software.

Facelet

One coloured square surface. There are 54 on the ordinary 3 × 3 cube.

Factorial, !

n! is the product of the positive integers from 1 through n. 8! = 40,320.

Fe

Chemical symbol for iron. Steel is an iron-based alloy, not a separate chemical element.

Floret

One small flower within a compound flower head.

Fluorescence

Light emitted after a material absorbs radiation, usually at a longer wavelength. It is distinct from radioactive decay.

Freeboard

The vertical distance between the stated liquid level and the top boundary of a vessel.

GBIF

Global Biodiversity Information Facility, an international network publishing biodiversity occurrence data.

Global Biodiversity Information Facility, a network and platform for biodiversity records.

GCTA

Genome-wide Complex Trait Analysis; software for genetic-data analysis.

GEOIDE-Ar16

The Argentine geoid model identified by IGN for the stated transformation between POSGAR07 ellipsoidal heights and SRVN16 heights.

GEPIN

Gestión de Permisos de Investigación, the research-permit system described by Argentina's APN.

GH

Gray Herbarium, Harvard University. A collection code, not a locality.

ON THIS PAGE

FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **×** multiplied by · **=** equals · **GBIF** Global Biodiversity Information Facility · **GCTA** Genome-wide Complex Trait Analysis · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **POSGAR07** Posiciones Geodésicas Argentinas 2007, the named Argentine geodetic reference frame · **SRVN16** Sistema de Referencia Vertical Nacional 2016 · **GEPIN** Gestión de Permisos de Investigación · **APN** Administración de Parques Nacionales

GHz

Gigahertz; one billion cycles per second.

GJ

Gigajoule; one billion joules of energy.

GM

Gravitational parameter: the gravitational constant multiplied by the body’s mass. The atlas uses JPL values in cubic kilometres per square second.

GND

Ground, the circuit reference node. It is not automatically a protective earth connection.

GNSS

Global Navigation Satellite System, the general term for satellite-positioning systems.

GOET

Herbarium code for the Göttingen collection.

GPS

Global Positioning System, the United States satellite-navigation system; one part of the broader GNSS category.

GUM

Guide to the expression of uncertainty in measurement.

GW

Gigawatt; one billion watts.

Gathering

Material collected by an observer or team at a particular place and time, retained with its collecting identity.

Gematria

A letter-number system whose alphabet, spelling and value rules must be specified before calculating.

Genet

A genetic individual. Several connected or clonally derived stems need not represent separate genets.

Geodesic lattice

A triangulated framework related to a curved surface; exact geometry and frequency must be specified.

Gross mass

Container plus contents before subtracting tare.

Guardian working benchmark

A dated price observation whose animal age, training, health and sale terms must be matched to a proposed purchase.

ON THIS PAGE

JPL Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA · **GND** Ground, the circuit reference node · **GPS** Global Positioning System

H

Hydrogen, when used as an atom label or chemical symbol.

Chemical symbol for hydrogen when used in a chemical formula.

H2O

Water: two hydrogen atoms and one oxygen atom.

HMC5883L

Honeywell model identifier for a three-axis digital magnetic sensor. A model code is not a general acronym.

HNO3

Nitric acid: one hydrogen, one nitrogen and three oxygen atoms.

HRTEM

High-resolution transmission electron microscopy. Image interpretation also depends on imaging conditions and the specimen.

HTM

Half-turn metric: an outer-face quarter-turn or half-turn counts as one move.

HTML

HyperText Markup Language, the format of the browser reader.

Hypertext Markup Language, the document format used by the offline browser reader.

Hypertext Markup Language, the format used for the offline browser reader.

HyperText Markup Language, the browser reader format.

HVAC

Heating, ventilation and air conditioning.

Headspace

The unfilled space above the contents of a container, specified by the storage method.

Herbarium

A collection of preserved plant specimens with records, or the institution housing it. A historical herbal is a book about plants.

A collection of preserved plant specimens and associated records.

Hg

Chemical symbol for mercury, atomic number 80. The symbol is not a handling instruction.

Hold point

A stage that must be checked before dependent work proceeds.

Homeostasis

Regulation of internal conditions within a functioning biological system.

ON THIS PAGE

H2O Water · **HRTEM** High-resolution transmission electron microscopy · **HTM** Half-turn metric · **HTML** HyperText Markup Language, the browser reader format · **HVAC** Heating, ventilation and air conditioning

Homer

HOMER, Hypergeometric Optimization of Motif EnRichment; confirm the version in the source environment record.

Hysteresis

Dependence on previous state; switch-on and switch-off thresholds can differ.

Hz

Hertz, cycles per second.

Hertz, one cycle per second.

Hertz: one cycle per second. State the quantity that oscillates and the measurement method.

I

Total internal inlet rate, including recycle, in the synthetic recycle calculation.

The current symbol in the equations here, expressed in amperes. I × R means a product.

I2C

Inter-Integrated Circuit, a serial communication bus using data and clock lines. Also written I^2C.

ID

Identifier: a stable code for an object, observation, drawing or record.

Inside diameter, measured across the bore.

IGN

Instituto Geográfico Nacional, Argentina's national geographic institute.

Instituto Geográfico Nacional, Argentina's National Geographic Institute.

INFOR

Instituto Forestal, the Chilean forestry research institute responsible for the cited chañar manual.

INM

Instituto Nacional de Metrología, Colombia's national metrology institute in the source cited here.

INT

Interrupt, an electronic signal used to request processor attention; exact function depends on the part.

INTA

Instituto Nacional de Tecnología Agropecuaria, Argentina's agricultural research and extension institute.

Instituto Nacional de Tecnología Agropecuaria, Argentina's National Agricultural Technology Institute.

INTI

Instituto Nacional de Tecnología Industrial, Argentina's industrial-technology institute.

ON THIS PAGE

× multiplied by · **I2C** Inter-Integrated Circuit, a serial communication bus using data and clock lines · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **INFOR** Instituto Forestal · **INM** Instituto Nacional de Metrología, Colombia · **INT** Interrupt, an electronic signal used to request processor attention; exact function depends on the part · **INTA** Instituto Nacional de Tecnología Agropecuaria · **INTI** Instituto Nacional de Tecnología Industrial

Instituto Nacional de Tecnología Industrial, Argentina's national industrial technology institute.

Instituto Nacional de Tecnología Industrial, Argentina's National Institute of Industrial Technology.

ISO

International Organization for Standardization; ISO is its internationally used short name.

ITAR

International Traffic in Arms Regulations. The stamp is reproduced as part of the supplied image, not authenticated as an official designation.

IUCN

International Union for Conservation of Nature.

IUPAC

International Union of Pure and Applied Chemistry.

Icosahedron

A polyhedron with 20 triangular faces, 30 edges and 12 vertices in its regular form.

Identity

The transformation that leaves every tracked position unchanged.

IgG

Immunoglobulin G, a class of antibody. The four-chain drawing is a simplified teaching representation.

Impluvium

The shallow receiving basin below the opening.

InterPro

A protein-family and functional-domain classification resource.

Interpolation

Estimating between reference points within the calibrated range.

Invariant

A property preserved by the permitted operations.

Inverse

An operation that undoes another. Reverse a sequence's order and invert each move.

Isolation point

A control intended to stop a particular supply or part of a system.

Isomer

One of distinct compounds with the same molecular formula; this chapter compares different carbon connectivity.

ON THIS PAGE

ISO International Organization for Standardization; ISO is its internationally used short name · **IUPAC** International Union of Pure and Applied Chemistry

Isometric view

A pictorial view showing three principal directions together so the assembly can be recognised.

JASPAR

Name of a database of transcription-factor binding profiles.

JCGM

Joint Committee for Guides in Metrology.

JPL

Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA.

K

Thousand, 10^3, in the English price-poster suffix; in a temperature equation K instead denotes kelvin.

Kelvin; the SI unit of thermodynamic temperature.

Ka

Microwave band name; the supplied sheet states 26.5-40 GHz. It is a band designation, not a word acronym.

Kelvin connection

A four-wire arrangement with separate current and voltage-sensing connections at defined points.

Kerf

Material removed by a saw or cutting process; include it when nesting cuts.

Material removed by the width of a cut.

The material width removed by a cutting tool.

The width of material removed by a cutting tool. Include the actual kerf in a stock-cutting plan.

The width removed by a saw cut. Allow for it in a cut list.

The width of material removed by a cut.

L

Litre, one thousand cubic centimetres.

LED

Light-emitting diode; use a low-power battery lamp for the shadow model.

LEIE

Laboratorio de Extensión de la Escuela de Ingeniería Eléctrica, Universidad Nacional de Rosario.

LLM

Large language model; a computational model used for language-based tasks.

ON THIS PAGE

JCGM Joint Committee for Guides in Metrology · **JPL** Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA · **NASA** National Aeronautics and Space Administration · **SI** Système international d'unités, the International System of Units · **LED** Light-emitting diode

LPG

Liquefied petroleum gas; a product category often involving propane and butane mixtures.

Lamina

The blade of a leaf.

Leaflet

One segment of a compound leaf; it is not an independently attached whole leaf.

Li-ion

Lithium-ion rechargeable battery chemistry.

Livestock guardian

A dog managed to live in association with livestock and help protect them; distinct from a herding dog.

Livestock guardian dog

A dog raised and managed to live with and protect stock; distinct from a herding dog and a household alert dog.

Lunation

One complete lunar phase cycle, usually measured from one new Moon to the next. Its average is approximately 29.53 days.

M

Million, 10^6, in the price poster. On the teaching counters M is a separate label for one mass token representing 5 g.

M10

Metric screw thread with nominal 10 mm major diameter.

M12

Metric screw thread with nominal 12 mm major diameter.

M14

Metric screw thread with nominal 14 mm major diameter.

M4

Metric screw thread with a nominal diameter of 4 mm. Match the nut and actual pitch; the designation does not specify material strength.

Metric screw thread with nominal major diameter 4 mm; the specified pitch and fastener properties still matter.

M5

Metric screw thread with nominal 5 mm diameter. Match the actual pitch, nuts and assembly stack.

M6

Metric screw thread with nominal 6 mm major diameter; pitch and fit must also be specified.

ON THIS PAGE
LPG Liquefied petroleum gas · g gram, 0.001 kilogram · mm millimetre, 0.001 metre

An ISO metric thread designation with nominal 6 mm major diameter. Pitch and grade still need specification.

M8

Metric screw thread with nominal 8 mm major diameter.

MASER

Microwave amplification by stimulated emission of radiation.

MHz

Megahertz: one million cycles per second.

MN

Meganewton; one million newtons.

MO

Herbarium code for the Missouri Botanical Garden.

MPD

Mouse Phenome Database.

MS

Manuscript, in the archival shelfmark Keynes MS 31.

Materia seca, Spanish for dry matter.

MUSCLE

Multiple sequence comparison by log-expectation, a sequence-alignment program.

MVZ

Museum of Vertebrate Zoology at the University of California, Berkeley.

MW

Megawatt; one million watts.

MWO

Multi-wave oscillator: the name applied to Lakhovsky's apparatus; the name does not establish therapeutic effectiveness.

MWh

Megawatt-hour; 3.6 billion joules of energy.

Mass balance

An account of material entering, leaving and remaining within a defined boundary.

Measurand

The quantity intended to be measured, including the conditions needed to define it.

ON THIS PAGE

ISO International Organization for Standardization; ISO is its internationally used short name · **mm** millimetre, 0.001 metre · **MWO** Multi-wave oscillator

Median

The middle value of an ordered series; for an even count, the mean of the two middle values.

Mews

Housing used for falconry birds, with facilities matched to the bird and applicable requirements.

Mn

Chemical symbol for manganese.

Module (gear)

Pitch diameter divided by the number of teeth. The card teaching templates use a module of 2 millimetres.

Modulo

Remainder arithmetic. A twist sum of 0 modulo 3 is divisible by 3.

Mohs scale

An ordinal comparative scratch-hardness scale, not a linear ratio scale.

Monoclonal

Derived from one clone; the word does not by itself establish an unknown band's identity.

MΩ

Megohm, one million ohms.

Megaohm, 1,000,000 ohms. The uppercase prefix M means mega.

N

Newton, the SI unit of force. Weight in newtons equals mass in kilograms times gravitational acceleration in metres per square second.

Nitrogen, when used as the atom label or chemical symbol in this reader.

Newton; the SI unit of force.

Newton, the unit of force.

NA

Numerical aperture, n sin θ: refractive index multiplied by the sine of the collection half-angle.

NAEPP

The supplied sheet expands this as non-equilibrium atmospheric-pressure plasma.

NASA

National Aeronautics and Space Administration, United States.

NAV0442

Royal Museums Greenwich collection identifier for the cited Wang Yangxi geomantic compass, circa 1850. It is an object identifier, not an instrument rating.

ON THIS PAGE

SI Système international d'unités, the International System of Units · **n** refractive index of the optical medium · **sin** sine, the trigonometric function of an angle · **θ** theta, the light-collection half-angle · **NASA** National Aeronautics and Space Administration

NBS

National Bureau of Standards, the former name of the US institution now called NIST.

NCCIH

National Center for Complementary and Integrative Health, United States.

National Center for Complementary and Integrative Health, a United States research centre.

NH3

Ammonia: one nitrogen atom and three hydrogen atoms per molecule.

NHS

National Health Service, the United Kingdom public health service.

NIDCD

United States National Institute on Deafness and Other Communication Disorders.

NIMH

United States National Institute of Mental Health.

NIST

National Institute of Standards and Technology, United States.

National Institute of Standards and Technology, the United States measurement institute.

NO

Nitrogen monoxide, also called nitric oxide: one nitrogen and one oxygen atom.

NO2

Nitrogen dioxide: one nitrogen and two oxygen atoms.

NOAA

National Oceanic and Atmospheric Administration, United States.

United States National Oceanic and Atmospheric Administration.

NOx

Nitrogen oxides, a collective label whose exact included species must be stated in a technical record.

NRCS

Natural Resources Conservation Service, part of USDA.

NbTi

Niobium-titanium alloy, written with chemical element symbols.

Net mass

Gross mass minus the appropriate empty-container mass.

ON THIS PAGE

NBS National Bureau of Standards · **US** United States · **NIST** National Institute of Standards and Technology · **NCCIH** National Center for Complementary and Integrative Health · **NOAA** National Oceanic and Atmospheric Administration · **NRCS** Natural Resources Conservation Service · **USDA** United States Department of Agriculture

Node

An identified electrical connection shared by points treated as the same potential in a circuit model.

N·m

Newton metre, the unit of torque or turning moment.

O

Oxygen, when used as an atom label or chemical symbol.

Chemical symbol for oxygen when used in a chemical formula.

O2

Molecular oxygen: two oxygen atoms per molecule.

OAM

Orbital angular momentum; the source sheet refers to an electromagnetic mode.

OD

Outside diameter, measured across the outer surface.

OLED

Organic light-emitting diode, the display technology named on the supplied compass poster.

OP

Operator identifier in the date and time panel of supplied sheet 088; elsewhere abbreviations must be read in their own context.

OSB

Oriented strand board, made from wood strands bonded into a panel.

Occurrence identifier

An identifier for an occurrence record. Keep it distinct from a physical sheet barcode and collector number.

Ohmic

Describes a linear voltage-current relationship with constant ratio over stated conditions.

Oligo

Short form of oligonucleotide, a short chain of nucleotides.

OpenTarget Genetics

Label printed on the supplied image; consult the linked environment record for the exact Open Targets resource and version.

PAGE

Polyacrylamide gel electrophoresis.

ON THIS PAGE
OD Outside diameter, measured across the outer surface · **OLED** Organic light-emitting diode, the display technology named on the supplied compass poster · **OSB** Oriented strand board

PCB

Printed circuit board, the board carrying conductor tracks and electronic components.

PDB

Protein Data Bank; an archive of three-dimensional structural data.

PDF

Portable Document Format, used for the fixed-page readers.

Portable Document Format, used for readers and actual-size print templates.

Portable Document Format, used for fixed-layout readers and print sheets.

Portable Document Format, the fixed-layout reading file.

PEEK

Polyether ether ketone, an engineering polymer.

PET

Polyethylene terephthalate, a plastic used here as a room-temperature transparent overlay.

Polyethylene terephthalate, a polymer; the purchased sheet still needs its thickness and grade.

PLINK

Name of a genetics analysis toolkit; no invented expansion is supplied.

POSGAR

Posiciones Geodésicas Argentinas, Argentina's geodetic reference-frame designation.

Posiciones Geodésicas Argentinas, the Argentine geodetic reference framework.

POSGAR07

Posiciones Geodésicas Argentinas 2007, the named Argentine geodetic reference frame. State the observation epoch and any actual connection to control.

PP

Polypropylene, the plastic specified for the room-temperature open-water containers.

PVA

Polyvinyl acetate, the polymer named in common white craft and wood adhesives.

Polyvinyl acetate, the polymer named in common craft and wood adhesives. Read the actual product specification.

Polyvinyl acetate, an adhesive type used for suitable paper and card joints.

Polyvinyl acetate, an adhesive family. The product label determines its suitable use.

ON THIS PAGE

PCB Printed circuit board, the board carrying conductor tracks and electronic components · **PDB** Protein Data Bank · **PDF** Portable Document Format · **PET** Polyethylene terephthalate, a plastic used here as a room-temperature transparent overlay · **POSGAR** Posiciones Geodésicas Argentinas · **POSGAR07** Posiciones Geodésicas Argentinas 2007, the named Argentine geodetic reference frame · **PP** Polypropylene, the plastic specified for the room-temperature open-water containers · **PVA** Polyvinyl acetate, the polymer in the specified white card or wood adhesive

Pa

Pascal; the SI unit of pressure.

Pascal, the SI unit of pressure, equal to one newton per square metre.

Pappus

The modified calyx, here a bristled structure associated with dispersal.

Parallax

An apparent shift of a mark when it is viewed from a different direction. Align the eye with the reading.

Pareidolia

Recognising a familiar form in a pattern; recognition alone does not establish its origin.

Parity

Whether a permutation needs an even or odd number of pair exchanges. This classification is independent of the chosen decomposition.

Peristyle

A court or space surrounded by a colonnade.

Permutation

A rearrangement of labelled objects.

Petiole

The stalk joining a leaf blade to the stem.

Phenology

The timing of recurring biological events, such as flowering and fruit development, in relation to their conditions.

The timing of recurring biological events.

Phenophase

A defined observable stage or condition, such as the presence of ripe fruit.

Photogram

An image made by placing an object against light-sensitive material, without a camera image of that object.

Planning allowance

A provisional budget amount chosen for planning. It is not a checked seller quotation.

Plywood

A board built from bonded wood veneers. Board thickness and stiffness must suit the press being tested.

Polarity

Here, the uneven charge distribution and molecular geometry associated with an electric dipole.

ON THIS PAGE

SI Système international d’unités, the International System of Units

Porosity

The fraction of a structure occupied by openings, stated with the measurement method.

Pred

Abbreviation for predicted or prediction in the source tool map.

Prime, apostrophe

The mark after a face letter indicating its counterclockwise quarter-turn. The supplied poster instead uses i.

Provenance

The documented source and history of an image, object or record.

The recorded origin and history of an object or material.

The documented source and history of an object or image, kept separate from a later interpretation.

The documented origin and history of material, an image or a record.

The documented origin and ownership or transfer history of an object, specimen or animal.

Pseudostem

An apparent stem formed here by overlapping leaf sheaths.

Q

Quality factor: stored energy relative to energy dissipated per oscillation cycle, with its convention stated.

QA

Quality assurance.

QTM

Quarter-turn metric: a 90-degree face turn counts as one and a half-turn as two.

Quadrat

A defined area used for observation and counting.

R

Resistance symbol in the equations here, expressed in ohms.

RC

Resistor-capacitor; a circuit containing electrical resistance and capacitance.

Resistor-capacitor. The ideal single time constant is resistance multiplied by capacitance.

RCC

Reinforced cement concrete, the abbreviation on the supplied pavilion sheet.

RCSB

Research Collaboratory for Structural Bioinformatics.

ON THIS PAGE
QTM Quarter-turn metric · RCC Reinforced cement concrete

RDCTD.PRO

The branding printed on supplied sheet 088. No verified acronym expansion or permission grant is established by that printed mark.

REBCO

Rare-earth barium copper oxide; a family of superconducting materials. The illustration does not establish a working propulsion hull.

RF

Radio frequency.

Radio frequency: electromagnetic oscillations in the radio-frequency range. Frequency alone does not specify exposure or dose.

RHS

Royal Horticultural Society. Its practical guide is one source for the pressing discussion.

RMG

Royal Museums Greenwich, the collection holding the cited geomantic compass.

RMS

Root mean square, a way to state the effective magnitude of an alternating signal.

RNA

Ribonucleic acid.

RXD

Receive data, the serial input label in the supplied illustration.

Raceme

An elongated flower cluster with individual flowers on short stalks along its axis.

Ramet

A unit of clonal growth that may appear as a separate stem or plant while belonging to a larger genetic individual.

Re

Reynolds number; a dimensionless ratio based on a stated velocity, length, density and viscosity.

Recovery, desalination

Product-water flow divided by feed-water flow, using consistent units and conditions.

RegulomeDB

A resource for annotations relevant to regulatory variation.

Resolution

The smallest indicated change that an instrument can distinguish under the relevant conditions.

ON THIS PAGE

RF Radio frequency · **RHS** Royal Horticultural Society · **RMG** Royal Museums Greenwich, the collection holding the cited geomantic compass · **RMS** Root mean square, a measure of a varying signal’s effective magnitude · **RNA** Ribonucleic acid · **RXD** Receive data, the serial input label in the supplied illustration

The smallest change an instrument displays or distinguishes. It does not alone establish accuracy.

Rf

Relative migration, here band travel divided by the travel of the reference front in a printed electrophoresis example.

Relative migration: band distance divided by reference-front distance, both from the same origin.

Riser

A vertical service route connecting levels.

Rm

Input resistance of the voltmeter, which loads the measured circuit.

Rosette

Leaves arranged around a short central region, commonly near ground level.

Rp

Parallel resistance in the illustrated impedance model.

Rs

Series resistance in the illustrated impedance model.

Runoff factor

The assumed fraction of rainfall on a stated area that reaches the collection point.

SAC

Servicio Argentino de Calibración y Medición, an Argentine calibration and measurement service.

SAED

Selected-area electron diffraction. Diffraction is collected from a selected specimen area; a pattern alone does not establish full composition.

SAR

Saudi riyal, a currency distinct from USD.

SCL

Serial clock line for the I2C bus.

SDA

Serial data line for the I2C bus.

SDS

Safety data sheet when describing purchase documents. In SDS-PAGE it instead means sodium dodecyl sulfate, a detergent. Read the context.

Sodium dodecyl sulfate, an anionic detergent used in the illustrated separation method.

ON THIS PAGE

SAC Servicio Argentino de Calibración y Medición, an Argentine calibration and measurement service · **SAED** Selected-area electron diffraction · **SAR** Saudi riyal · **USD** United States dollar · **SCL** Serial clock line for the I2C bus · **I2C** Inter-Integrated Circuit, a serial communication bus using data and clock lines · **SDS** Safety data sheet in purchasing; sodium dodecyl sulfate in protein separation · **SDS-PAGE** Sodium dodecyl sulfate polyacrylamide gel electrophoresis

Safety data sheet in this materials chapter. In the previous protein chapter, SDS means sodium dodecyl sulfate; context must be stated.

SDS-PAGE

Sodium dodecyl sulfate polyacrylamide gel electrophoresis. A laboratory separation method, discussed here through printed data rather than a home operating procedure.

Sodium dodecyl sulfate polyacrylamide gel electrophoresis: a denaturing protein-separation method.

SEGEMAR

Servicio Geológico Minero Argentino, the Argentine geological and mining survey.

SEM

Scanning electron microscopy: a focused electron beam scans a surface and detected signals form an image.

Scanning electron microscopy, or a scanning electron microscope. A beam scans the surface and detected signals form the image.

SI

Système international d'unités, the International System of Units.

Système international d'unités, the International System of Units. In the SKF product name SI 10 C, SI is a catalogue code, not the units system.

International System of Units, the internationally agreed system used for the measurements in these chapters.

SIB

Sistema de Información de Biodiversidad, Argentina's National Parks biodiversity information system.

SKF

Svenska Kullagerfabriken, the Swedish bearing company; a manufacturer name in sheet 049.

SPA Complex

A project label printed on supplied sheets, not a verified structural standard.

SPDT

Single-pole, double-throw: one common switch terminal selects one of two other terminals.

SRVN16

Sistema de Referencia Vertical Nacional 2016, Argentina's national vertical reference system.

SVG

Scalable Vector Graphics, an editable drawing format that keeps lines sharp when enlarged.

Scalable Vector Graphics, the vector image format used for the drawings.

ON THIS PAGE
SDS Safety data sheet in purchasing; sodium dodecyl sulfate in protein separation · **SDS-PAGE** Sodium dodecyl sulfate polyacrylamide gel electrophoresis · **SEGEMAR** Servicio Geológico Minero Argentino · **SEM** Scanning electron microscopy, or a scanning electron microscope · **SI** Système international d'unités, the International System of Units · **SKF** Svenska Kullagerfabriken, the historical Swedish bearing-company name · **SIB** Sistema de Información de Biodiversidad · **SPDT** Single-pole, double-throw: one common switch terminal selects one of two other terminals · **SRVN16** Sistema de Referencia Vertical Nacional 2016 · **SVG** Scalable Vector Graphics

Scalable Vector Graphics, a format for diagrams that remain sharp when enlarged.

Scalable Vector Graphics, an editable drawing that remains sharp when enlarged.

Scalable Vector Graphics: an editable vector image format.

Scalable Vector Graphics, the editable vector format supplied for the diagrams.

Saleable yield

The output that meets the defined product and sale conditions. It differs from all material recovered.

Sanitary stack

A vertical wastewater pipe; its venting arrangement must be identified separately.

Saros

A near-repetition of eclipse geometry after 223 synodic months, approximately 18 years and 11 days plus about eight hours. It does not repeat an identical local eclipse.

Saturation

A recorded signal has reached the detection or display limit, hiding larger differences.

Scanpy

Name of a Python toolkit for single-cell analysis.

Scape

A leafless flowering stalk rising from the base.

Seed atom

A term in the esoteric tradition discussed in the supplied diagram; it does not identify a chemical atom.

Seed lot

A specifically identified quantity of seed whose origin and handling records are kept together.

Setpoint

The desired reference value in a control problem.

Solar altitude

The angle of the Sun above the local horizon.

Solubility

The composition of a saturated solution at stated conditions, expressed with a defined basis.

Solute

A constituent considered dissolved in a solvent in the stated description.

Solvent

The dissolving medium in the stated description; the role depends on the system.

Stocking capacity

The animal demand that a particular forage and management system can support over a stated period; not established by area alone.

Synodic month

The Moon’s phase cycle relative to the Sun, distinct from its orbital period relative to the stars.

T

Trillion, 10^{12}, in the poster’s English short-scale magnitude notation.

Tesla, the SI unit of magnetic flux density, in the magnetic-field equations here.

TDWG

Biodiversity Information Standards, the organisation maintaining Darwin Core. The abbreviation comes from its former name, Taxonomic Databases Working Group.

TEM

Transmission electron microscopy: electrons pass through a sufficiently thin specimen to form an image.

Transmission electron microscopy, or a transmission electron microscope. Electrons pass through a sufficiently thin specimen.

TP4056

Charger integrated-circuit model identifier. A charger label alone does not prove a complete protected battery system.

TXD

Transmit data, the serial output label in the supplied illustration.

Take-off

A measured quantity account derived from coordinated drawings and specifications.

Tare

The empty-container mass, or the operation of subtracting it from gross mass.

The empty container mass subtracted from a gross weighing.

The mass of an empty container subtracted from the gross mass.

The mass of the empty container excluded from net contents.

Tc-99

Technetium-99, the ground-state nuclide named in the source audit.

Tc-99m

Technetium-99 in a metastable nuclear state; the small m is part of the nuclear-state designation, not the metre unit.

Terminal velocity

A steady falling speed reached when the forces balance under specified conditions.

Tetrastyle

Having four columns or supports in the arrangement described.

ON THIS PAGE

SI Système international d’unités, the International System of Units · **TDWG** Biodiversity Information Standards, historically the Taxonomic Databases Working Group · **TEM** Transmission electron microscopy, or a transmission electron microscope · **TXD** Transmit data, the serial output label in the supplied illustration · **m** metre, a length unit

Thermal bridge

A local path of greater heat flow through an enclosure.

Thermal mass

Material that stores sensible heat as its temperature changes.

Tolerance

A permitted variation in a specified component property. It is distinct from measurement uncertainty.

Traceability

A property of a measurement result related to a reference through a documented calibration chain with uncertainty contributions.

U

Expanded uncertainty, obtained from the stated standard uncertainty and coverage factor.

UAF

University of Alaska Fairbanks.

UCE

Universal Cell Embeddings, the cell-representation model label used in the Biomni environment.

UCSC

University of California, Santa Cruz; here a genome-data resource label.

UNLP

Universidad Nacional de La Plata, Argentina.

Universidad Nacional de La Plata.

US

United States of America.

United States.

United States of America in the regional comparison.

In the specimen citation US 3336871, the herbarium code for the United States National Herbarium at the Smithsonian. In ordinary regional prose, United States is written out.

US / USD

United States of America / United States dollar.

USA-NPN

USA National Phenology Network. USA means United States of America.

USB

Universal Serial Bus. The connector and complete power circuit must be identified independently.

ON THIS PAGE

UAF University of Alaska Fairbanks · **UCSC** University of California, Santa Cruz · **UNLP** Universidad Nacional de La Plata · **US** United States · **USD** United States dollar · **USA-NPN** USA National Phenology Network · **USB** Universal Serial Bus, the wired interface used for data and device power

USD

United States dollar.

United States dollar. The cost column is an independent planning allowance.

United States dollar; local price currency.

United States dollar. The kit price is a dated listing, separate from delivery and tax.

United States dollar. Keep separate currencies in separate quotation totals.

United States dollar. A US planning allowance is not an Argentine price converted into dollars.

USDA

United States Department of Agriculture.

USGS

United States Geological Survey.

UTC

Coordinated Universal Time. Exposure timestamps must identify whether they refer to the beginning, middle or end of an exposure.

UV

Ultraviolet radiation. Its wavelengths are shorter than visible violet light.

Uncertainty

A description of the dispersion of values attributable to a measurand based on the information used. A worst-case bound is not automatically a statistical uncertainty interval.

The stated limits of a measurement or location interpretation, including assumptions and missing information.

The remaining doubt or range relevant to a result. State what was measured and what assumptions remain.

A quantified expression of the range associated with a measurement result, under stated assumptions.

V

Volt, a unit of electrical potential difference.

Volt, the unit of electric potential difference.

Volt, unit of electric potential difference; the symbol V also names the voltage variable in the equations here.

VAT

Value-added tax. Its rate and applicability depend on the transaction and jurisdiction.

Value-added tax.

ON THIS PAGE

USD United States dollar · **USDA** United States Department of Agriculture · **USGS** United States Geological Survey · **UTC** Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event · **UV** Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light · **VAT** Value-added tax

VCC

Positive supply label used on many circuit boards. Read the actual board voltage specification before connecting power.

VPD

Velopharyngeal dysfunction, an umbrella description of a closing mechanism that does not work as intended.

VPI

Velopharyngeal insufficiency, inadequate closure due to an anatomical cause.

VRT

Volunteer Response Team, Wikimedia's team handling archived permissions.

Vapour-control layer

A layer selected to control diffusion of water vapour as part of the complete moisture design.

Ventilator

A corrugated or otherwise channelled separator allowing air through the press stack.

Verbatim locality

The location wording retained as originally recorded, before later interpretation.

ViennaRNA

RNA-structure analysis software package.

Voucher

A preserved specimen linked to the organism or study it documents, allowing later examination.

A preserved specimen connected to a documented occurrence or study, allowing later examination.

A preserved specimen with a record that permits later examination.

W

Watt when used as a power unit. In the glide equations W denotes weight, measured in newtons.

Watt, unit of power. A component's rated power requires its stated operating conditions.

WCA

World Cube Association, the organization whose notation and historical records are cited.

Wb

Weber, the SI unit of magnetic flux.

Wet basis

A result expressed relative to the sample mass including its water.

XPS

Extruded polystyrene, a type of rigid foam insulation.

ON THIS PAGE

VCC Positive supply label used on many circuit boards · WCA World Cube Association · SI Système international d'unités, the International System of Units · XPS Extruded polystyrene

Z

Complex impedance. Its real and imaginary parts describe the stated frequency response.

Zaguán

An entrance passage connecting the street entrance with the interior of a house.

ZeusC

The supplied creator or watermark label in the wider book image collection. It is not an institutional credit for the historical objects reproduced here.

alidade

A sighting rule used to establish a direction and draw its ray on a plane table.

atanh

Inverse hyperbolic tangent; atanh(e) = 0.5 ln((1+e)/(1-e)) for 0 < e < 1.

aw

Water activity, a measure related to the availability of water. It is not interchangeable with total water content.

azeotrope

A mixture composition at which vapour and liquid have the same composition under the stated conditions; ordinary boiling then does not provide the assumed enrichment.

bwa

Burrows-Wheeler Aligner, a sequence-alignment tool.

c

Speed of light in vacuum, exactly 299,792,458 metres per second in the SI definition.

cm

Centimetre, one hundredth of a metre.

cm^3

Cubic centimetre, a unit of volume equal to one millilitre.

cooler

Software and a data format used for genomic interaction matrices.

datum

A declared reference for positions or heights. Here a local drawing datum is distinguished from a national reference system.

eV

Electronvolt: the energy change of one elementary charge through one volt, exactly $1.602176634 \times 10^{-19}$ joule.

ON THIS PAGE

= equals · SI Système international d'unités, the International System of Units · × multiplied by

ephemeris

A dated calculation of an astronomical body's position or events, tied to a specified model and time convention.

exeligmos

Three Saros cycles, approximately restoring eclipse time of day while the detailed geometry continues to evolve.

exp

Exponential function with base e; exp(x) = e raised to x.

flowkit

Name of a flow-cytometry analysis toolkit.

g

Gram, one thousandth of a kilogram, in a material quantity. In the atlas equation g = GM/R², the symbol instead means gravitational acceleration; the displayed unit is m/s².

Gram, one thousandth of a kilogram; a unit of mass in this reader.

Gram when used as a mass unit; gravity has a separate meaning when used as a variable.

Gram, a unit of mass.

Gram, one thousandth of a kilogram.

g/m²

Grams per square metre, a measure of paper or card mass per unit area, not thickness.

gasometer

An apparatus for collecting or measuring gas volume; the reading needs stated conditions.

gnomAD

Genome Aggregation Database.

ha

Hectare, an area of 10,000 square metres. This reader does not expand its small sample into a hectare yield.

j

The imaginary unit in the electrical impedance expression; $j^2 = -1$.

k

Rate parameter in the declared illustrative exponential model; here its unit is inverse minutes.

Coverage factor in the uncertainty example. k = 2 is not automatically proof of an exact 95 percent interval.

kDa

Kilodalton, one thousand daltons; a unit of molecular mass.

Kilodalton, one thousand daltons of molecular mass. An apparent gel-derived value is method-dependent.

ON THIS PAGE
= equals · GM Gravitational parameter: gravitational constant G multiplied by body mass M · m/s² metres per second squared, acceleration · m² square metre, an area unit · kDa Kilodalton, a molecular-mass unit

kW

Kilowatt; one thousand watts.

kerf

Material width removed by a cut. State it separately from finished part dimensions and edge trimming.

kg

Kilogram, the SI base unit of mass.

Kilogram, the SI unit of mass.

Kilogram, the unit of mass.

Kilogram, equal to 1,000 grams. g means gram.

km

Kilometre, one thousand metres.

kΩ

Kiloohm, one thousand ohms.

Kilohm, one thousand ohms.

Kiloohm, 1,000 ohms. The prefix k means kilo.

libSBML

Software library supporting SBML, Systems Biology Markup Language.

libration

Changes in the apparent orientation of the Moon that reveal different areas near its edge over time.

ln

Natural logarithm, with base e.

Natural logarithm.

luopan

A Chinese geomantic compass whose directional indicator and inscribed rings belong to a particular historical and interpretive system.

m

Metre, the SI base unit of length.

Metre, the SI unit of length.

Metre, the unit of length.

m/s

Metres per second, a unit of speed.

mA

Milliampere, one thousandth of an ampere; a unit of electric current.

ON THIS PAGE
SI Système international d’unités, the International System of Units · kΩ kilohm, 1,000 ohms

Milliampere, 0.001 ampere. The lowercase prefix m means milli.

mAh

Milliampere-hour, a charge-capacity unit, not a direct statement of stored energy without a voltage.

mL

Millilitre, one thousandth of a litre.

mV

Millivolt, 0.001 volt.

macs2

Model-based Analysis of ChIP-Seq, version 2. ChIP-Seq means chromatin immunoprecipitation followed by sequencing.

measurand

The quantity intended to be measured, defined with enough conditions to avoid changing the question between trials.

meniscus

The curved free surface at the liquid edge. Use the same reading convention at both hose ends.

metastable

A state that can persist for a time before changing to a lower-energy state; here used for a specified nuclear state.

miRBase

MicroRNA sequence and annotation database.

mm

Millimetre, one thousandth of a metre.

Millimetre; one thousandth of a metre.

Millimetre, one thousandth of a metre. cm means centimetre and m means metre.

Millimetre.

mm²

Square millimetre, an area unit.

Square millimetre, a unit of area.

mm³

Cubic millimetre, a unit of volume.

mol

Mole, the SI unit of amount of substance, containing exactly $6.02214076 \times 10^{23}$ specified elementary entities.

ON THIS PAGE

mm² square millimetre · SI Système international d'unités, the International System of Units · × multiplied by

m^2

Square metre, a unit of area.

Square metre, a unit of area. Multiply two lengths expressed in metres to obtain it.

m^3/h

Cubic metres per hour, a unit of volume flow.

nm

Nanometre, one billionth of a metre.

Nanometre: one billionth of a metre.

occultation

One body hides a background source from the observer. Its timing can constrain a projected outline.

p

Purge fraction of the unconverted remainder in the synthetic recycle calculation.

pH

A logarithmic measure related to hydrogen-ion activity; not a general measure of whether any liquid is harmless.

pm

Picometre: one trillionth of a metre.

ppm

Parts per million, used here for relative unit-scale differences.

primer

A short nucleic-acid sequence used to initiate copying in the appropriate procedure.

px

Pixel, one discrete image sample. A pixel count becomes a length only through a stated calibration.

rpm

Revolutions per minute, a rotation rate.

s

Second, the SI unit of time in the circuit calculations.

sk-image

scikit-image, a Python image-processing library.

sqrt

Square root, the non-negative root in the stated geometric examples.

ON THIS PAGE
m^2 square metre, an area unit · m^3 cubic metre, a volume unit · nm nanometre, one billionth of a metre · pH A logarithmic measure of hydrogen-ion activity · SI Système international d'unités, the International System of Units

trilateration

Locating a point from measured distances. In the two-circle example, a side observation selects the mirror solution.

u

Standard uncertainty, stated with the quantity and assumptions to which it belongs.

x

Single-pass conversion fraction in the synthetic recycle calculation.

°C

Degree Celsius, a temperature unit.

µF

Microfarad, one millionth of a farad of capacitance.

Microfarad, one millionth of a farad; a unit of capacitance.

µT

Microtesla, one millionth of a tesla, a unit of magnetic flux density.

µV

Microvolt, 0.000001 volt. The prefix µ means micro.

µm

Micrometre, one millionth of a metre.

Ω

Ohm, the unit of electrical resistance.

γ

Gamma; the angle of steady descent below the horizontal.

θ

Theta, the collection half-angle in the numerical-aperture expression.

λ

Lambda, the wavelength in the optical resolution example.

µ

Mu, the mean of the natural logarithm of diameter relative to the stated reference diameter in the lognormal model.

Mu; dynamic viscosity in the Reynolds-number example.

µT

Microtesla: one millionth of a tesla.

ON THIS PAGE
°C degree Celsius, a temperature unit · Ω ohm, electrical resistance

μg

Microgram; one millionth of a gram.

π

Pi, approximately 3.14159.

ρ

Rho; air density in the worked aerodynamic examples.

σ

Sigma, the standard deviation of the natural logarithm in the lognormal model.

τ

Tau, the time constant. Its circuit definition must include any meter loading.

ω

Omega, angular frequency; ω = 2πf.

The book at a glance

Argentina · United States · European Union · Wider world

Eight books connect the household, the landscape and the workshop. Select an illustrated opening, or use the alphabetical index beginning on page 2.

Shelter

Rooms, roofs, weather, shared services and repair.

Water and Food

Water supply, cultivation, storage and the work of provision.

Locations and Infrastructure

Sites, routes, landscapes and connected services.

Tools and First Principles

Energy, mechanisms, materials, instruments and counted models.

Plants and Medicine

Plant identity, cultivation, records and the evidence behind a use.

The Complete BugIn Guide

Household continuity, supplies, communication and care.

Wisdom

Historical thought, cultural traditions and interpretation.

Page 4320

Argentina · United States · European Union · Wider world

ON THIS PAGE

= equals

Seven books connect the household, the landscape and the workshop. Use the alphabetical index beginning on page 2.

Why I write this book

I write this book because useful knowledge should travel further than the person who first learned it. A drawing becomes more valuable when another reader can name its materials, understand its measurements, find the source and repair the result. A civilisation depends on that continuity as much as on its celebrated inventions.

The journey begins in Argentina, continues through the United States and Europe, and then opens to the wider world. Local climate, available materials, workshop habits and costs change what a sound idea looks like in practice. A price or a building detail belongs to a place and a date.

History belongs beside the workbench. Notebooks, surviving objects, mistakes and arguments show how knowledge was earned. Symbolic traditions belong in their cultural setting. An appealing pattern is a

History belongs beside the workbench. Notebooks, surviving objects, mistakes and arguments show how knowledge was earned. Symbolic traditions belong in their cultural setting. An appealing pattern is a starting question; a physical claim needs observations that could support or challenge it.

Read the story, inspect the parts

A chapter opening introduces its person, place or mechanism. The illustrated title is a contemporary interpretation. The historical plate has a separate collection identity, date and credit.

The material panels show the item, count and dimensions. Costs distinguish consumed materials from shared tools. Working time and waiting time are recorded separately. Planning allowances remain labelled as estimates, not supplier quotations.

A counted model teaches a stated relationship. It is not automatically a design for a working machine or a lifesize structure. Its dimensions, untested limits and next checks stay beside it.

Select Index, Overview, Glossary, Contents or Finder at the foot of any page. Previous and Next follow the complete book. The Library opens the responsive readers, editable prices, calculations and personal records.

Some preserved source plates retain reference labels from earlier editions. They identify source material. The current earlier reading page is the number in the navigation strip. New index and contents entries use current earlier reading pages.

People and history: Names, historical accounts and their context.

Places: Geography, regional examples and local conditions.

Materials: Identity, condition and properties.

Measurements and prices: Dimensions, quantities, units and stated costs.

Living systems: Plants, growth, habitats and seasonal records.

Unresolved claims: An identification or interpretation still requiring evidence.

Colour supports the written label. It never replaces a material name or a safety instruction. Au means gold, Hg mercury and Fe iron. Steel is an alloy family; a wood record names species and condition. The colours aid navigation and make no therapeutic claim.

Source register · 1

Checked 6 November 2026. Source dates refer to the described object or publication, as stated.

AR1 · La historia de los juegos, printed page 94

Educ.ar; excerpt attributed to Instituto Histórico de la Ciudad de Buenos Aires, 1990, through Cuadernos para el Aula, 20

Recollection of cane frames, light paper, paste and cloth tails. It does not establish the date of invention or a single national design.

https:/ / backend.educ.ar/ refactor_ resource/ get-attachment/ 48566

Armada Argentina

Launched 31 August 1897; 37 instructional voyages between 1899 and 1938. This is the naval museum account, distinguishe conflicting shorthand in other tourism records.

https:/ / www.argentina.gob.ar/ node/ 170100

Ministerio de Defensa, Argentina

AR1 · open source AR2 · open source AR3 · open source US1 · open source

US2 · open source US3 · open source Chapter contents Continue reading

Martín Rivadavia proposal in 1893; flag raised 30 June 1898; museum established 22 May 1964.

https:/ / www.argentina.gob.ar/ defensa/ gestion-cultural/ museos/ buque-museo-fragata-ara-presidente-sarmiento

Smithsonian National Air and Space Museum

A 5foot span biplane kite built in July 1899. The displayed object is a reproduction; no photograph of the original survives according to this record.

https:/ / airandspace.si.edu/ collection-objects/ 1899-wright-kite-reproduction/ nasm_ I20031236002

Alexander Graham Bell, National Geographic Magazine, June 1903; Library of Congress

Primary 1903 publication. The saved PDF is the library text transcription, not a facsimile of its illustrated plates.

https:/ / www.loc.gov/ resource/ magbell.37700202/

Library of Congress, Prints and Photographs Division

Dated 7 July 1908; album plate, unknown photographer. Complete digital image retained.

https:/ / www.loc.gov/ pictures/ item/ 00650258/

TERMS AND SYMBOLS IN THIS READING

ARA - Armada de la República Argentina. Argentine Navy; the prefix identifies a naval vessel.

AR / US / EU / WO / P + number - Source-register keys. Argentina, United States, Europe, other world sources and image records. The number identifies a record in this reader.

US2 · open source US3 · open source Chapter contents Continue reading

REA

ON THIS PAGE

PDF Portable Document Format · **EU** European Union

FULL BOOK / PAGE 3226 / 4232

AR1 · open source AR2 · open source AR3 · open source US1 · open source

US2 · open source US3 · open source Chapter contents Continue reading

https:/ / www.argentina.gob.ar/ defensa/ gestion-cultural/ museos/ buque-museo-fragata-ara-presidente-sarmiento

Source register · 2

Checked 6 November 2026. Source dates refer to the described object or publication, as stated.

United States National Park Service

Opening in 1838; ropewalk processes; production and research. Caption and filename disagree on the Navy photograph number: 98180 versus 89180. Both are recorded.

https:/ / www.nps.gov/ articles/ 000/ charlestown-navy-yard-ropewalk.htm

United States Coast Guard; official Auxiliary District 7 distribution

Revision A. Downloaded full 312page handbook from the Drive file linked by this official Auxiliary page. Chapter 2 supplies the source diagrams. Historical source version, not a claim about the latest operational manual.

https:/ / helpdesk.uscga-district-7.org/ knowledgebase.php?article=341

NASA Glenn Research Center

Weight, aerodynamic force, line tension and force balance. NASA means National Aeronautics and Space Administration.

https:/ / www.grc.nasa.gov/ www/ k-12/ airplane/ kitefor.html

Distinguishes covering, structure and bridle. The diamond dimensions in this book are a teaching trial, not NASA specifications.

https:/ / www.grc.nasa.gov/ www/ k-12/ airplane/ kitepart.html

Open flying space, people and obstacles. No legal altitude limit is inferred from this educational page.

https:/ / www.grc.nasa.gov/ www/ k-12/ airplane/ kitesafe.html

Painted 17771778; delivered 26 January 1778. Tapestry cartoon for the dining room at El Pardo. The Prado direct link returned an access error during this check; the institutional foundation record was used.

EU1 · La cometa

Painted 17771778; delivered 26 January 1778. Tapestry cartoon for the dining room at El Pardo. The Prado direct link returned an access error during this check; the institutional foundation record was used.

US4 · open source US5 · open source US6 · open source US7 · open source

US8 · open source EU1 · open source Chapter contents Continue reading

Fundación Goya en Aragón; Museo Nacional del Prado, P00774

Painted 17771778; delivered 26 January 1778. Tapestry cartoon for the dining room at El Pardo. The Prado direct link returned an access error during this check; the institutional foundation record was used.

ON THIS PAGE

= equals · **NASA** National Aeronautics and Space Administration

https:/ / www.fundaciongoyaenaragon.org/ eng/ obra/ la-cometa/ 18

TERMS AND SYMBOLS IN THIS READING

BCH - Boat Crew Handbook. The document family; 16114.4A identifies this Seamanship Fundamentals revision.

NASA - National Aeronautics and Space Administration. The United States agency whose Glenn Research Center supplies the flight references.

US8 · open source EU1 · open source Chapter contents Continue reading

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FULL BOOK / PAGE 3227 / 4232

US4 · open source US5 · open source US6 · open source US7 · open source

US8 · open source EU1 · open source Chapter contents Continue reading

Painted 17771778; delivered 26 January 1778. Tapestry cartoon for the dining room at El Pardo. The Prado direct link returned an access error during this check; the institutional foundation record was used.

https:/ / www.fundaciongoyaenaragon.org/ eng/ obra/ la-cometa/ 18

Source register · 3

Checked 6 November 2026. Source dates refer to the described object or publication, as stated.

G. Daws, engraver; Richards & Co., London; Wellcome Collection 44027i

Public Domain Mark. Daws is recorded as active about 1800; the collection does not give an exact publication year for this prin

https:/ / wellcomecollection.org/ works/ nrneprdq

The Scout Association

Item FS315082, January 2013; copyright footer 2018/2019. Consulted as a crosscheck. No copyrighted Scout figures reprodu

https:/ / prod-cms.scouts.org.uk/ media/ 2709/ scout-adventures-simple-knots-guide.pdf

Josh Levy, Library of Congress Manuscript Division

Bell observed Māori kites in Auckland in September 1910. Journal sketches are an outside observer’s record. The first maker remains unnamed in this source.

https:/ / blogs.loc.gov/ manuscripts/ 2023/ 01/ of-note-a-maori-kite-and-alexander-graham-bells-albatross/

Bob Maysmor, Te Ara Encyclopedia of New Zealand

Māori terms and materials. Manu aute is a birdlike kite; manu taratahi has a different form. Do not substitute a European diamond for these traditions.

https:/ / teara.govt.nz/ en/ kites-and-manu-tukutuku/ page-2

Detroit Publishing Company; Library of Congress

Date [1909]; glass negative; digital reproduction det.4a19522. No known restrictions on publication.

https:/ / www.loc.gov/ pictures/ item/ 2016810841/

Markus Bärlocher

Bowline with the tail inside the eye; uploaded 9 March 2008. Photographer releases rights to the public domain.

https:/ / commons.wikimedia.org/ wiki/ File:Palstek_ innen.jpg

Source register · 3

EU2 · open source EU3 · open source WO1 · open source WO2 · open source

P1 · open source P2 · open source Chapter contents Continue reading

P1 · open source P2 · open source Chapter contents Continue reading

READER

Source register · 4

Checked 6 November 2026. Source dates refer to the described object or publication, as stated.

P3 · Clove Hitch ABoK 11 USCG

USCG PTC Developer

30 January 2020. Creative Commons Zero 1.0. Preserve the creator account exactly; individual photographer not supplied.

https:/ / commons.wikimedia.org/ wiki/ File:Clove_ Hitch_ -_ ABoK_ 11_ -_ USCG.jpg

P4 · Sheet Bend ABoK 1431 USCG

USCG PTC Developer

30 January 2020. Creative Commons Zero 1.0. Corrected lesson photograph.

https:/ / commons.wikimedia.org/ wiki/ File:Sheet_ Bend_ -_ ABoK_ 1431_ -_ USCG.jpg

P5 · Schotstek rechts

Markus Bärlocher

9 March 2008. Public domain. German description says falscher, rechter Schotstek; retained only as the earlier comparison, with tails on opposite sides identified.

https:/ / commons.wikimedia.org/ wiki/ File:Schotstek_ rechts.jpg

P6 · La cometa, digital reproduction

Francisco de Goya; Museo Nacional del Prado

Publicdomain painting reproduction, 3180 by 3051 pixels.

https:/ / commons.wikimedia.org/ wiki/ File:La_ cometa.jpg

P3 · open source P4 · open source P5 · open source P6 · open source

Chapter contents

30 January 2020. Creative Commons Zero 1.0. Preserve the creator account exactly; indivi

https:/ / commons.wikimedia.org/ wiki/ File:Clove_ Hitch_ -_ ABoK_ 11_ -_ USCG.jpg

ON THIS PAGE

USCG United States Coast Guard · **PTC** Performance Technology Center in the Coast Guard creator credit

30 January 2020. Creative Commons Zero 1.0. Corrected lesson photograph.

https:/ / commons.wikimedia.org/ wiki/ File:Sheet_ Bend_ -_ ABoK_ 1431_ -_ USCG.jpg

9 March 2008. Public domain. German description says falscher, rechter Schotstek; retain tails on opposite sides identified.

https:/ / commons.wikimedia.org/ wiki/ File:Schotstek_ rechts.jpg

Publicdomain painting reproduction, 3180 by 3051 pixels.

https:/ / commons.wikimedia.org/ wiki/ File:La_ cometa.jpg

TERMS AND SYMBOLS IN THIS READING

USCG - United States Coast Guard. The maritime service that publishes the handbook and appears in the

PTC - Performance Technology Center. Part of the creator-account name USCG PTC Developer; an indivi

ABoK - The Ashley Book of Knots. Clifford W. Ashley's 1944 reference book. The following number is an

AR / US / EU / WO / P + number - Source-register keys. Argentina, United States, Europe, other world so identifies a record in this reader.

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Checked 6 November 2026. Source dates refer to the described object or publication, as stated.

https:/ / commons.wikimedia.org/ wiki/ File:Clove_ Hitch_ -_ ABoK_ 11_ -_ USCG.jpg

Source register · 1

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

AR1 · Buenos Aires y todo su Municipio, 1867

Departamento Topográfico. Archivo General de la Nación, Mapoteca AR-AGN-MAP01-II76; digital image served by ACUMAR.

The complete 1867 plan is reproduced, including its marginal credits and scales. ACUMAR means Autoridad de Cuenca Matanza Riachuelo.

https:/ / centrodocumental.acumar.gob.ar/ items/ show/ 8247

Instituto Geográfico Nacional, Spain, Cartoteca.

Catalogue identifies Carlos Glade as constructor/draughtsman, Julio Vigier as engraver, and the Departamento Topográfico as publisher. It describes westup orientation, north to the right, metric and vara bars, and an original scale of 1:8,000. These are properties of the historical sheet, not this resized reproduction.

https:/ / www.ign.es/ web/ catalogo-cartoteca/ resources/ html/ 001508.html

AR3 · Algo de nuestra historia

Spanish chronology: Oficina Topográfica Militar, 5 December 1879; Instituto Geográfico Militar, 1904; Instituto Geográfico Nacional, 2009. Historical maps also record state institutions and their territorial purposes.

ON THIS PAGE

PTC Performance Technology Center in the Coast Guard creator credit · USCG United States Coast Guard · EU European Union · ACUMAR Autoridad de Cuenca Matanza Riachuelo

AR1 · open source AR2 · open source AR3 · open source AR4 · open source

US1 · open source US2 · open source Chapter contents Continue reading

Instituto Geográfico Nacional, Argentina.

Spanish chronology: Oficina Topográfica Militar, 5 December 1879; Instituto Geográfico Militar, 1904; Instituto Geográfico Nacional, 2009. Historical maps also record state institutions and their territorial purposes.

https:/ / www.ign.gob.ar/ AreaInstitucional/ ConozcaIGN/ AlgoDeHistoria

Posiciones Geodésicas Argentinas 2007 was adopted in May 2009. A named geodetic frame differs from an arbitrary garden coordinate origin.

https:/ / www.ign.gob.ar/ NuestrasActividades/ Geodesia/ Posgar07

United States General Land Office; Joseph Gorlinski. Library of Congress, 83691755.

The historical map documents the federal survey programme. It is evidence of administrative mapping; it is not a present boundary record or a complete account of Indigenous land relationships.

https:/ / www.loc.gov/ item/ 83691755/

US2 · Elements of Chart Making, Special Publication 38

E. Lester Jones; United States Coast and Geodetic Survey. Government Printing Office, Washington, 1916. NOAA digitization.

Primary historical publication. Figures 2, 6, 7, 8, 10, 15 and 16 supply the documentary plates. Individual photographers are not named. Publication date does not establish the exposure dates.

https:/ / geodesy.noaa.gov/ library/ pdfs/ Special_ Publication_ No_ 38.pdf

TERMS AND SYMBOLS IN THIS READING

POSGAR - Posiciones Geodésicas Argentinas. Argentine Geodetic Positions; 07 identifies the 2007 reference-frame designation.

ACUMAR - Autoridad de Cuenca Matanza Riachuelo. The Argentine basin authority serving the historical map record.

AGN - Archivo General de la Nación. Argentina's national archive. AR-AGN-MAP01-II76 identifies the cited map record.

NOAA - National Oceanic and Atmospheric Administration. The United States agency providing historical and magnetic-field sources.

x / y - Local coordinate axes. x follows A toward B; positive y is the left side when looking from A toward B.

AR / US / ME / EL / EU / Z + number - Source-register keys. Argentina, United States, measurement methods, electronics, Europe and supplied ZeusC originals. Numbers identify records.

US1 · open source US2 · open source Chapter contents Continue reading

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ON THIS PAGE

NOAA National Oceanic and Atmospheric Administration · **AGN** Archivo General de la Nación, Argentina · **EU** European Union

AR1 · open source AR2 · open source AR3 · open source AR4 · open source

US1 · open source US2 · open source Chapter contents Continue reading

Source register · 2

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

United States Geological Survey.

Explains the 1:24,000, 7.5minute quadrangle series. Mapseries scale does not establish suitability for a small construction layout.

https:/ / www.usgs.gov/ educational-resources/ topographic-mapping

Contour lines represent equal elevation relative to a reference level. Read the interval, units and map date.

https:/ / www.usgs.gov/ faqs/ what-a-topographic-map

Primary symbol reference. Different map series and dates can use different signs; consult the legend of the actual sheet.

https:/ / www.usgs.gov/ ngp-standards-and-specifications/ us-topo-map-symbol-guide

Explains true, magnetic and grid north. A historical declination diagram is dated evidence, not a current compass correction.

https:/ / www.usgs.gov/ faqs/ what-do-different-north-arrows-a-usgs-topographic-map-mean

Declination is eastpositive and westnegative in the convention used here. It depends on location and date. All numerical declination examples in this reader are hypothetical.

US7 · Magnetic Declination

Declination is eastpositive and westnegative in the convention used here. It depends on location and date. All numerical declination examples in this reader are hypothetical.

National Oceanic and Atmospheric Administration.

Declination is eastpositive and westnegative in the convention used here. It depends on location and date. All numerical declination examples in this reader are hypothetical.

US3 · open source US4 · open source US5 · open source US6 · open source

US7 · open source US8 · open source Chapter contents Continue reading

https:/ / www.ngdc.noaa.gov/ geomag/ declination.shtml

National Centers for Environmental Information, NOAA.

WMM2025 covers 2025-2030. Model values describe a largescale field; local metal and device effects need separate checks. No local declination has been invented for the reader's unspecified plot.

https:/ / www.ncei.noaa.gov/ products/ world-magnetic-model

ON THIS PAGE
NOAA National Oceanic and Atmospheric Administration

TERMS AND SYMBOLS IN THIS READING

USGS - United States Geological Survey. The agency publishing the cited topographic references.

WMM - World Magnetic Model. A dated model of Earth's large-scale magnetic field; WMM2025 covers 2025-2030.

US7 · open source US8 · open source Chapter contents Continue reading

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FULL BOOK / PAGE 3276 / 4232

US3 · open source US4 · open source US5 · open source US6 · open source

US7 · open source US8 · open source Chapter contents Continue reading

Declination is eastpositive and westnegative in the convention used here. It depends on location and date. All numerical declination examples in this reader are hypothetical.

https:/ / www.ngdc.noaa.gov/ geomag/ declination.shtml

Source register · 3

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

US9 · Datums and Transformations

National Geodetic Survey, NOAA.

Coordinates must be interpreted with their datum or reference frame. Do not relabel a local sketch as nationalgrid coordinates.

https:/ / geodesy.noaa.gov/ INFO/ datums-transformations.shtml

National Geodetic Survey, NOAA.

Coordinates must be interpreted with their datum or reference frame. Do not relabel a local sketch as nationalgrid coordinates.

https:/ / geodesy.noaa.gov/ INFO/ datums-transformations.shtml

Federal Geographic Data Committee.

The 100,000metre column scheme places zone 14 in set 2, with first letters J through R, omitting O. This is the basis for rejecting DD in the supplied 14S DD example under the modern grid convention. The locally saved September 2001 final draft corroborates the chart; it is explicitly labelled as a draft.

https:/ / www.fgdc.gov/ standards/ projects/ FGDC-standards-projects/ usng/ fgdc_ std_ 011_ 2001_ usng.pdf

Food and Agriculture Organization of the United Nations, Topography training manual.

Method reference for horizontal measurement, ranging, taping and pace calibration. Worked dimensions and error examples in this book are newly constructed.

https:/ / www.fao.org/ fishery/ static/ FAO_ Training/ FAO_ Training/ General/ x6707e/ x6707e02.htm

ON THIS PAGE

NOAA National Oceanic and Atmospheric Administration

Reference for offsets, rays and intersections. The book distinguishes distance intersection from anglebased triangulation.

https:/ / www.fao.org/ fishery/ docs/ CDrom/ FAO_ Training/ FAO_ Training/ General/ x6707e/ x6707e07.htm

Backsight, foresight, local datum and levelloop concepts. The twosetup numerical example is original to this reader.

https:/ / www.fao.org/ fishery/ static/ FAO_ Training/ FAO_ Training/ General/ x6707e/ x6707e08.htm

ME4 · Topography and freshwater fish culture, chapter 11

US9 · open source US10 · open source ME1 · open source ME2 · open source

Food and Agriculture Organization of the United Nations.

Shows why a mapping brief must relate terrain measurements to the intended task. This reader does not approve drainage works from a contour picture.

https:/ / www.fao.org/ fishery/ static/ FAO_ Training/ FAO_ Training/ General/ x6707e/ x6707e11.htm

TERMS AND SYMBOLS IN THIS READING

FGDC - Federal Geographic Data Committee. The United States interagency body publishing the grid standard.

FAO - Food and Agriculture Organization of the United Nations. Publisher of the cited topography training manual.

ME3 · open source ME4 · open source Chapter contents Continue reading

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FULL BOOK / PAGE 3277 / 4232

US9 · open source US10 · open source ME1 · open source ME2 · open source

ME3 · open source ME4 · open source Chapter contents Continue reading

Source register · 4

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

EL1 · HMC5883L: 3axis digital compass integrated circuit

Honeywell, manufacturer datasheet; archived copy served by Acme Systems.

Magnetic sensor and digital interface specification. Component heading claims do not establish assembleddevice accuracy. The sourcesheet wiring is not independently validated as a construction plan.

https:/ / www.acmesystems.it/ download/ datasheets/ HMC5883L.pdf

EL2 · AN4248: Implementing a TiltCompensated eCompass using Accelerometer and Magnetometer Sensors

Freescale Semiconductor, now NXP.

Primary manufacturer application note. Independent tilt information is used with magnetic measurements. The supplied compass poster does not identify such an attitude sensor.

https:/ / www.nxp.com/ docs/ en/ application-note/ AN4248.pdf

ME3 · open source ME4 · open source Chapter contents Continue reading

Honeywell, manufacturer datasheet; archived copy served by Acme Systems.

Magnetic sensor and digital interface specification. Component heading claims do not establish assembleddevice accuracy. The sourcesheet wiring is not independently validated as a construction plan.

https:/ / www.acmesystems.it/ download/ datasheets/ HMC5883L.pdf

Freescale Semiconductor, now NXP.

Primary manufacturer application note. Independent tilt information is used with magnetic measurements. The supplied compass poster does not identify such an attitude sensor.

https:/ / www.nxp.com/ docs/ en/ application-note/ AN4248.pdf

EU1 · Nouvelle carte: principal triangles of France

Jean Dominique Maraldi; César-François Cassini de Thury; Guillaume Dheulland; Aubin. Library of Congress, 2004629162.

Catalogue dates the map [1744?]. Paris is the prime meridian. Creator roles are read from the printed cartouche: survey by Maraldi and Cassini, engraving by Dheulland, lettering by Aubin. No modern survey network is reconstructed from the engraving.

https:/ / www.loc.gov/ item/ 2004629162/

Library of Congress reproduction, mirrored on Wikimedia Commons.

Publicdomain historical map reproduction. Complete supplied digital image retained; no place names have been redrawn.

https:/ / commons.wikimedia.org/ wiki/ File:Nouvelle_ carte_ qui_ comprend_ les_ principaux_ triangles_ qui_ servent_ de_ fondement_ % C3% A0_ la_ description_ g% C3% A9om% C3% A9trique_ de_ la_ France_ LOC_ 2004629162.jpg

ZeusC supplied archive, sheet 001. Underlying designer and first publisher unconfirmed.

Qualitative paired contour/landscape poster. No contour interval, measured elevations, locations or scale are supplied. Images are retained only in the labelled source gallery.

Printed source mark RDCTD.PRO; ZeusC supplied archive, sheet 088. Individual designer unconfirmed.

The original is retained as evidence. Its tactical text is not a field instruction for this civilian lesson. Scale examples are correct; the pace length is uncalibrated, the sample grid is inconsistent, and several direction heuristics are not dependable in Argentina.

EL1 · open source EL2 · open source EU1 · open source EU2 · open source

Chapter contents Continue reading

Source register · 5

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

Z3 · Digital Compass Using Magnetometer, Design Variant 5

Printed credit: Design By: Rizwan Khan. ZeusC supplied archive, sheet 093.

The named credit is preserved exactly; first publication and identity are not independently established. Claimed tilt compensation and accuracy are not treated as demonstrated performance. Component identifiers are not expanded into invented acronyms.

TERMS AND SYMBOLS IN THIS READING

AN4248 - Application note 4248. Manufacturer document identifier for the tilt-compensated compass example.

Chapter contents Continue reading

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EL1 · open source EL2 · open source EU1 · open source EU2 · open source

Chapter contents Continue reading

TERMS AND SYMBOLS IN THIS READING

The original is retained as evidence. Its tactical text is not a field instruction for this civilian lesson. Scale examples are correct; the pace length is uncalibrated, the sample grid is inconsistent, and several direction heuristics are not dependable in Argentina.

Source register / 1

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

Museo Ferroviario de Tafí Viejo and municipal archival initiative.

Fonds describes workshop documentation, 19102000, with regular functions described from 1912. An archive date range is not a photograph exposure date.

https:/ / atom.iniciativadearchivos.org/ index.php/ informationobject/ browse?collection=1509&sort=startDate&sortDir=asc&topLod=0

Municipalidad de Tafí Viejo, 3 May 2026.

Municipal account identifies the town foundation in 1900 and workshop inauguration in 1910. Different milestones must remain distinct.

https:/ / www.tafiviejo.gob.ar/ noticia/ interes-general/ 135219/ hoy-tafi-viejo-cumple-126-anos-desde-fundacion

Museo Ferroviario Ranchos; historical photographic collection.

The selected interior is captioned circa 1906. Photographer is not named. Staged construction and transfer of departments explain why a workshop has more than one opening date.

https:/ / museoferroviario.flavam.com/ galestremediosdeescalada-parte3.html

INPE imagery; educational publication by CONAE, Argentina.

CBERS2B HRC panchromatic image; stated spatial resolution 2.7 metres. The downloadable TIFF is retained. This is a dated territorial view, not proof of a particular workshop production rate.

ON THIS PAGE

= equals · **INPE** Instituto Nacional de Pesquisas Espaciais, Brazil · **CONAE** Comisión Nacional de Actividades Espaciales, Argentina · **TIFF** Tagged Image File Format

https:/ / www.argentina.gob.ar/ ciencia/ conae/ educacion-y-formacion-masiva/ materiales-educativos/ tafi-viejo-tucuman-cbers-2b-hrc-20-de-octubre-de-2008

Instituto Nacional de Tecnología Industrial, Organismo de Certificación; issued 20 September 2017.

Primary protocol identifies five Japanese terms and their Spanish operational meanings. This reader adapts the organizing ideas to an invented workshop; it does not grant certification.

https:/ / www.inti.gob.ar/ assets/ uploads/ files/ certificaciones/ metodologia-5s/ Protocolo5S.pdf

República Argentina; official plan, July 2025 file.

National framework for risk reduction, coordination and recovery. Local workshop choices must connect to actual service operators and public arrangements. No local emergency role is invented.

https:/ / www.argentina.gob.ar/ sites/ default/ files/ pnrrd_ 2025-2029_ julio_ 2025_ 1.pdf

TERMS AND SYMBOLS IN THIS READING

INPE - Instituto Nacional de Pesquisas Espaciais. Brazil's National Institute for Space Research; creator credit on the satellite image.

CBERS - China-Brazil Earth Resources Satellite. A China-Brazil satellite programme; 2B identifies the spacecraft used for the cited image.

HRC - High Resolution Camera. The CBERS-2B panchromatic imaging instrument.

AR / US / EL / EU / JP / Z + number - Source-register keys. Argentina, United States, electronics, Europe, Japan and supplied ZeusC originals. Numbers identify records.

https://atom.iniciativadearchivos.org/index.php/informationobject/browse?collection=1509&sort=startDate&sortDir=asc&topLod=0

https://www.tafiviejo.gob.ar/noticia/interes-general/135219/hoy-tafi-viejo-cumple-126-anos-desde-fundacion

https://museoferroviario.flavam.com/galestremediosdeescalada-parte3.html

https://www.argentina.gob.ar/ciencia/conae/educacion-y-formacion-masiva/materiales-educativos/tafi-viejo-tucuman-cbers-2b-hrc-20-de-octubre-de-2008

AR5 · open source AR6 · open source Chapter contents Continue reading

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https:/ / www.inti.gob.ar/ assets/ uploads/ files/ certificaciones/ metodologia-5s/ Protocolo5S.pdf

TERMS AND SYMBOLS IN THIS READING

AR / US / EL / EU / JP / Z + number - Source-register keys. Argentina, United States, electronics, Europe, Japan and supplied ZeusC originals. Numbers identify records.

ON THIS PAGE

s second, a time unit · **INPE** Instituto Nacional de Pesquisas Espaciais, Brazil · **HRC** High Resolution Camera, in the astronomy instrument name · **EU** European Union

Source register / 2

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

República Argentina.

Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil. The book uses the full institutional meaning; it does not present a private workshop plan as a national mandate.

https:/ / www.argentina.gob.ar/ sinagir

US1 · Thomas A. Edison Laboratories, Building No. 5: historical data

Historic American Engineering Record, NJ-70-C. Historical documentation: Edward Jay Pershey; historian Robert Buerglener, September 1988. Library of Congress.

Building erected in 1887; regular machinetool suppliers; steam drive replaced by two directcurrent motors in 1904. Later room alterations and museum storage prevent treating every photographed arrangement as original.

https:/ / tile.loc.gov/ storage-services/ master/ pnp/ habshaer/ nj/ nj1200/ nj1222/ data/ nj1222data.pdf

US2 · Thomas A. Edison Laboratories: index to photographs

Jet Lowe, Historic American Engineering Record staff photographer, March 1986; Library of Congress, NJ-70-C.

Photo 1: firstfloor interior; photo 53: associated stockroom. The negative borders corroborate the numbers. Exposure date is March 1986, not 1887. United States government documentary record.

https:/ / tile.loc.gov/ storage-services/ master/ pnp/ habshaer/ nj/ nj1200/ nj1222/ data/ nj1222cap.pdf

US3 · Caterpillar tractor repair shop, Colfax, Washington

Russell Lee, July 1941. Farm Security Administration / Office of War Information Collection, Library of Congress.

Digital identifier fsa.8c01965; reproduction LCUSF34039961D. Catalogue says these tractors were used on wheatlands. No known restrictions on publication.

https:/ / www.loc.gov/ pictures/ item/ 2017790250/

National Institute of Standards and Technology, Special Publication 1190, volume II.

Service dependencies and recovery planning reference. The workshop networks and all numerical scenarios in this reader are original teaching constructions, not a reproduced NIST assessment.

https:/ / www.nist.gov/ system/ files/ documents/ 2017/ 05/ 09/ NIST-SP-1190v2.pdf

US5 · Operations and Maintenance Best Practices: A Guide to Achieving Operational Efficiency, release 3.0

Reference for reactive, preventive and predictive maintenance distinctions. The invented asset register and decision examples are not manufacturer instructions.

G. P. Sullivan, R. Pugh, A. P. Melendez and W. D. Hunt; Pacific Northwest National Laboratory for the United States Department of Energy, August 2010.

https:/ / www.energy.gov/ sites/ default/ files/ 2020/ 04/ f74/ omguide_ complete_ w-eo-disclaimer.pdf

ON THIS PAGE

NIST National Institute of Standards and Technology

TERMS AND SYMBOLS IN THIS READING

NIST - National Institute of Standards and Technology. United States agency publishing the measurement and resilience references.

NJ - New Jersey. United States state abbreviation in the historical archive identifier.

LC - Library of Congress catalogue prefix. LC-USF34-039961-D is the reproduction identifier for Russell Lee's tractor-shop photograph, not a machine specification.

AR / US / EL / EU / JP / Z + number - Source-register keys. Argentina, United States, electronics, Europe, Japan and supplied ZeusC originals. Numbers identify records.

https://www.argentina.gob.ar/sinagir

https://tile.loc.gov/storage-services/master/pnp/habshaer/nj/nj1200/nj1222/data/nj1222data.pdf

https://tile.loc.gov/storage-services/master/pnp/habshaer/nj/nj1200/nj1222/data/nj1222cap.pdf

https://www.loc.gov/pictures/item/2017790250/

US4 · open source US5 · open source Chapter contents Continue reading

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US5 · Operations and Maintenance Best Practices: A Guide to Achieving Operational Efficiency, release 3.0

G. P. Sullivan, R. Pugh, A. P. Melendez and W. D. Hunt; Pacific Northwest National Laboratory for the United States Department of Energy, August 2010.

Reference for reactive, preventive and predictive maintenance distinctions. The invented asset register and decision examples are not manufacturer instructions.

https:/ / www.energy.gov/ sites/ default/ files/ 2020/ 04/ f74/ omguide_ complete_ w-eo-disclaimer.pdf

Source register / 3

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

National Institute of Standards and Technology.

Traceability concerns measurement results connected to a reference through a documented calibration chain, each step contributing uncertainty. Instrument display resolution alone does not establish accuracy.

https:/ / www.nist.gov/ metrology/ metrological-traceability

United States Occupational Safety and Health Administration.

United States regulatory source for hazardousenergy control. Consult applicable local rules, taskspecific procedures and qualified personnel; this reader does not supply a machinery isolation procedure.

https:/ / www.osha.gov/ laws-regs/ regulations/ standardnumber/ 1910/ 1910.147

ON THIS PAGE

EU European Union

TowerPro, manufacturer.

Published stall torque is 11 kg/cm at 6 volts; the conventional intended torque unit is kilogramforce centimetre. Stall torque is not a continuous working rating. Component data cannot validate the complete ZeusC robot concept.

https:/ / towerpro.com.tw/ product/ mg996R/

EU1 · Atelier de menuiserie, Encyclopédie, volume 24, plate 2

Jacques-Raymond Lucotte, drawing; A. J. Defehrt, engraving, 1769. Bibliothèque Mazarine, Paris, 2° 3442; catalogue: Utpictura18, Aix-Marseille Université, notice 21938.

Public web reproduction of a publicdomain historical engraving. Available image is 334 by 480 pixels; small lettering cannot support dimensional reconstruction. The protected highresolution version was not accessed.

https:/ / utpictura18.univ-amu.fr/ notice/ 21938-atelier-menuiserie-encyclopedie-t-24-menuiserie-en-batiment-pl-2-defehrt-dapres

Katsushika Hokusai, circa 1830-1832. The Metropolitan Museum of Art, JP2982.

Woodblock print. Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Museum marks the image Public Domain and supplies an Open Access reproduction. Artistic representation is distinguished from measured survey evidence.

https:/ / www.metmuseum.org/ art/ collection/ search/ 56386

Z1 · Aluminium profile pieces: positions 30 and 31

ZeusC Engineering & Design, visible source mark; supplied sheet 040. Individual designer and first publication unconfirmed.

Exact original preserved. The prior catalogue slotadjustment title does not describe this sheet. Section FF, angled cuts and Spanish stock labels are read from the image; missing material standard and tolerances are not invented.

TERMS AND SYMBOLS IN THIS READING

CFR - Code of Federal Regulations. United States federal regulatory compilation; 29 CFR 1910.147 is the cited hazardous-energy-control provision.

mm / cm / m - Millimetre / centimetre / metre. Length units; 1 metre equals 100 centimetres or 1,000 millimetres.

kg - Kilogram. Mass unit. It is distinct from kilogram-force, a force unit.

F-F - Section-view identifier. A pair of letters labels the cut plane and its view. It does not name a material.

° / Ø / θ - Degree / diameter / theta. Angle unit, diameter sign and Greek letter used for joint-angle labels.

JP2982 - Museum object number. The Metropolitan Museum of Art identifier for Hokusai’s Tatekawa print. It is not an engineering or date code.

JP1 · open source Chapter contents Continue reading

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kg kilogram, a mass unit · ° degree, an angle unit

Source register / 4

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

Z2 · Angled profile members: positions 32 and 33

ZeusC Engineering & Design, visible source mark; supplied sheet 041. Individual designer and first publication unconfirmed.

Exact original preserved. Printed designation lengths and dimension lines differ slightly. Rounding may explain the difference but is not confirmed; do not silently choose a controlling length.

Z3 · Brazo Robótico 6DOF, BR001

ZeusC Engineering & Design, visible source mark; supplied sheet 052. Drawing date printed 2025-06-21. Individual designer unconfirmed.

A concept with claimed payload, reach, materials and a parts list. No independent assembly, dutycycle or payload test is established. Historical publication date and drawing date are distinct.

Instituto Nacional de Pesquisas Espaciais, Brazil.

Primary instrument record: HRC means High Resolution Camera. Its panchromatic band covers visible and part of nearinfrared light; nominal spatial resolution is 2.7 metres.

https:/ / www.gov.br/ inpe/ pt-br/ programas/ cbers/ sobre-o-cbers-1/ cbers-1-2-e-2b/ cameras-imageadoras

Primary agency explanation of CBERS as ChinaBrazil Earth Resources Satellite.

https:/ / www.gov.br/ inpe/ pt-br/ acesso-a-informacao/ perguntas-frequentes/ cbers

TERMS AND SYMBOLS IN THIS READING

DOF - Degrees of freedom. Independent motions used to describe the mechanism. Six DOF is a source-sheet claim about the robot concept.

6DOF - Six degrees of freedom. The source writes the number and acronym together in the robot title.

AR / US / EL / EU / JP / Z + number - Source-register keys. Argentina, United States, electronics, Europe, Japan and supplied ZeusC originals. Numbers identify records.

https://www.gov.br/inpe/pt-br/programas/cbers/sobre-o-cbers-1/cbers-1-2-e-2b/cameras-imageadoras

https://www.gov.br/inpe/pt-br/acesso-a-informacao/perguntas-frequentes/cbers

EL2 · open source EL3 · open source Chapter contents

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Argentina.gob.ar, Ministry of Economy historical notice, 12 August 2026

The official biographical notice links Vieytes to the 1802 Semanario and a soap business with Nicolás Rodríguez Peña. It is a retrospective account, not a surviving factory formula or an eyewitness record of every meeting.

https:/ / www.argentina.gob.ar/ node/ 434603

ON THIS PAGE

HRC High Resolution Camera, in the astronomy instrument name · **CBERS** China-Brazil Earth Resources Satellite · **DOF** Degree of freedom, an independent possible motion or displacement · **EU** European Union

Museo Histórico Nacional, Colecciones catalogue, printed page 46 / digital page 48

The museum identifies the portrait as Simplicio Juan Rodríguez de Saá, circa 1815, watercolour on ivory. Artist, sitter, date, material and museum number are kept distinct.

https:/ / museohistoriconacional.cultura.gob.ar/ media/ uploads/ site-6/ Catalogos/ mhn_ catalogo_ 1_ final-web.pdf

Administración Nacional de Medicamentos, Alimentos y Tecnología Médica

Argentina: externalbody cleansing is within the cosmetic category described here. Use the current technical requirements and establishment records for an actual product; this chapter does not grant manufacturing or sale permission.

https:/ / www.argentina.gob.ar/ anmat/ regulados/ cosmeticos

Householduse classification, registration identifiers and interjurisdictional distribution are addressed in the official FAQ. A cleaning claim about a surface is different from a skincleansing use.

https:/ / www.argentina.gob.ar/ anmat/ regulados/ productos-de-uso-domestico/ preguntas-frecuentes-sobre-productos-domisanitarios

Bramble Berry; tutorial photography credited to Amanda Kerzman

Rechecked quantities: 16 ounces olive oil, 2.1 ounces sodium hydroxide, 4.7 ounces distilled water, all by mass. Sodium lactate is optional in the source. It specifies controlled mixing temperatures, moulding and roughly one year of cure for this castile project. No tutorial photograph is reproduced here.

https:/ / www.brambleberry.com/ projects/ soap-making/ cold-process/ classic-castile-soap-project/ PS000387.html

Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health

Corrosive exposure, immediate eye irrigation and skin flushing, and incompatibility with aluminium, tin and zinc. This source is not a soap formula or permission to use an unspecified container.

https:/ / www.cdc.gov/ niosh/ npg/ npgd0565.html

TERMS AND SYMBOLS IN THIS READING

NIOSH - National Institute for Occupational Safety and Health. The United States institute publishing the cited chemical-hazard guide.

https://www.argentina.gob.ar/node/434603

https://museohistoriconacional.cultura.gob.ar/media/uploads/site-6/Catalogos/mhn_catalogo_1_final-web.pdf

https://www.argentina.gob.ar/anmat/regulados/cosmeticos

https://www.argentina.gob.ar/anmat/regulados/productos-de-uso-domestico/preguntas-frecuentes-sobre-productos-domisanitarios

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

ON THIS PAGE

FAQ Frequently asked questions · **EU** European Union

https://www.brambleberry.com/projects/soap-making/cold-process/classic-castile-soap-project/PS000387.html

https://www.cdc.gov/niosh/npg/npgd0565.html

US1 · open source US2 · open source Chapter contents Continue reading

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TERMS AND SYMBOLS IN THIS READING

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

https://www.argentina.gob.ar/node/434603

https://museohistoriconacional.cultura.gob.ar/media/uploads/site-6/Catalogos/mhn_catalogo_1_final-web.pdf

https://www.argentina.gob.ar/anmat/regulados/cosmeticos

https://www.argentina.gob.ar/anmat/regulados/productos-de-uso-domestico/preguntas-frecuentes-sobre-productos-domisanitarios

https://www.brambleberry.com/projects/soap-making/cold-process/classic-castile-soap-project/PS000387.html

https://www.cdc.gov/niosh/npg/npgd0565.html

NIOSH - National Institute for Occupational Safety and Health. The United States institute publishing the cited chemical-hazard guide.

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

https://www.argentina.gob.ar/node/434603

https://museohistoriconacional.cultura.gob.ar/media/uploads/site-6/Catalogos/mhn_catalogo_1_final-web.pdf

https://www.argentina.gob.ar/anmat/regulados/cosmeticos

https://www.argentina.gob.ar/anmat/regulados/productos-de-uso-domestico/preguntas-frecuentes-sobre-productos-domisanitarios

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

United States Food and Drug Administration

The regulatory definition depends on composition, cleaning mechanism and intended claims. Qualifying true soap falls under the Consumer Product Safety Commission; cosmetic or drug claims change the route. Consult current productspecific requirements.

https:/ / www.fda.gov/ cosmetics/ cosmetic-products/ frequently-asked-questions-soap

Reference for orderly premises, equipment, rawmaterial identity and production records. The teaching forms are original examples, not an FDAapproved batch form or a complete legalcompliance system.

ON THIS PAGE

EU European Union

https:/ / www.fda.gov/ cosmetics/ cosmetics-guidance-documents/ good-manufacturing-practice-gmp-guidelinesinspection-checklist-cosmetics

National Institute of Standards and Technology, 2009 edition

Used solely for the stable avoirdupois ouncetomass conversion: 28.349523125 grams. This old edition is not used as the current legalmetrology rulebook.

https:/ / www.nist.gov/ system/ files/ documents/ 2017/ 05/ 09/ HB44-09-Combined.pdf

Alfred T. Palmer, Office of War Information; Library of Congress, 2017696583

February 1943. Digital identifier fsa.8b06088. The original caption describes reclaimed kitchen grease rendered into tallow and transport toward soap manufacture with glycerin as a byproduct. It does not certify any modern recovered oil for skin use.

https:/ / www.loc.gov/ item/ 2017696583

Carol M. Highsmith; Library of Congress, 2016632706

Photographed 19 October 2016. The catalogue dates the plant to 1886 and describes its earlier Procter & Gamble connection. The photograph is modern documentation of a historic building, not an 1886 exposure.

https:/ / www.loc.gov/ pictures/ item/ 2016632706/

CH1 · Soap: chemistry of saponification

Ed Vitz, John W. Moore, Justin Shorb, Xavier Prat-Resina, Tim Wendorff and Adam Hahn; Chemical Education Digital Library / LibreTexts

Primary teaching exposition of ester hydrolysis and fattyacid salts. Chemical drawings in this edition are newly drawn explanatory models, not reproductions of source figures.

https:/ / chem.libretexts.org/ Ancillary_ Materials/ Exemplars_ and_ Case_ Studies/ Exemplars/ Sports_ Physiology_ and_ Health/ Soap_ % 28Exemplar% 29

TERMS AND SYMBOLS IN THIS READING

FDA - Food and Drug Administration. United States agency explaining cosmetic and drug categories and the specific regulatory definition of soap.

https://www.fda.gov/cosmetics/cosmetic-products/frequently-asked-questions-soap

https://www.fda.gov/cosmetics/cosmetics-guidance-documents/good-manufacturing-practice-gmp-guidelinesinspection-checklist-cosmetics

https://www.nist.gov/system/files/documents/2017/05/09/HB44-09-Combined.pdf

https://www.loc.gov/item/2017696583

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

https://www.loc.gov/pictures/item/2016632706/

https://chem.libretexts.org/Ancillary_Materials/Exemplars_and_Case_Studies/Exemplars/Sports_Physiology_and_Health/Soap_%28Exemplar%29

ON THIS PAGE

FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **EU** European Union

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https:/ / www.fda.gov/ cosmetics/ cosmetic-products/ frequently-asked-questions-soap

TERMS AND SYMBOLS IN THIS READING

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

https://www.fda.gov/cosmetics/cosmetic-products/frequently-asked-questions-soap

https://www.fda.gov/cosmetics/cosmetics-guidance-documents/good-manufacturing-practice-gmp-guidelinesinspection-checklist-cosmetics

https://www.nist.gov/system/files/documents/2017/05/09/HB44-09-Combined.pdf

https://www.loc.gov/item/2017696583

https://www.loc.gov/pictures/item/2016632706/

https://chem.libretexts.org/Ancillary_Materials/Exemplars_and_Case_Studies/Exemplars/Sports_Physiology_and_Health/Soap_%28Exemplar%29

FDA - Food and Drug Administration. United States agency explaining cosmetic and drug categories and the specific regulatory definition of soap.

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

https://www.fda.gov/cosmetics/cosmetic-products/frequently-asked-questions-soap

https://www.fda.gov/cosmetics/cosmetics-guidance-documents/good-manufacturing-practice-gmp-guidelinesinspection-checklist-cosmetics

https://www.nist.gov/system/files/documents/2017/05/09/HB44-09-Combined.pdf

https://www.loc.gov/item/2017696583

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Reference for orderly premises, equipment, rawmaterial identity and production records. The teaching forms are original examples, not an FDAapproved batch form or a complete legalcompliance system.

https:/ / www.fda.gov/ cosmetics/ cosmetics-guidance-documents/ good-manufacturing-practice-gmp-guidelinesinspection-checklist-cosmetics

Food and Agriculture Organization of the United Nations, analytical methods

Defines saponification value in milligrams of potassium hydroxide per gram of oil. The unit must be read before converting to a sodiumhydroxide calculation. It is not a universal value for every oil.

https:/ / www.fao.org/ 4/ W6530E/ W6530E.pdf

United States Environmental Protection Agency

pH concerns hydrogenion activity. Inference used here: a single pH reading does not separately measure all free caustic alkali, establish material identity or validate the entire soap batch.

https:/ / www.epa.gov/ caddis/ ph

CH4 · ISO 456:1973, determination of free caustic alkali

Public abstract describes dedicated analytical methods for free caustic alkali. Confirmed in 2022 according to the catalogue. Full copyrighted standard is not reproduced; no laboratory titration procedure or acceptance limit is invented.

International Organization for Standardization

Public abstract describes dedicated analytical methods for free caustic alkali. Confirmed in 2022 according to the catalogue. Full copyrighted standard is not reproduced; no laboratory titration procedure or acceptance limit is invented.

https:/ / www.iso.org/ standard/ 4478.html

Muséum national d'Histoire naturelle, France

Museum history dates publication on fats and saponification to 1823. Soapmaking predated this research; the distinction is between an established craft and a more precise chemical explanation.

https:/ / www.mnhn.fr/ fr/ michel-eugene-chevreul-1786-1889

Michel-Eugène Chevreul, Paris, 1823; Wellcome Collection

Digitized original book, identifier b29299949. Titlepage image has the Public Domain Mark in the Wellcome catalogue. Historical vocabulary and typography are retained as evidence.

https:/ / wellcomecollection.org/ works/ u93ydsgv

European Parliament and Council; EUR-Lex

Articles 3, 8 and 10 concern safety, good manufacturing practice and safety assessment. Read the latest consolidated text and annexes before a real EU placingonmarket decision; this comparison is limited to those structural duties.

https:/ / eur-lex.europa.eu/ legal-content/ EN/ ALL/ ?uri=CELEX% 3A32009R1223

TERMS AND SYMBOLS IN THIS READING

pH - Logarithmic hydrogen-ion activity measure. pH is the negative base-ten logarithm of hydrogen-ion activity. It is not a mass of free alkali.

ISO - International Organization for Standardization. ISO is the organization's short name. ISO 456 identifies its free-caustic-alkali analytical standard.

EU - European Union. The jurisdiction discussed in the cosmetic-products comparison.

EC - European Community. Historical designation in the title Regulation (EC) No 1223/2009. On the water-monitor sheet, EC instead means electrical conductivity.

https://www.fao.org/4/W6530E/W6530E.pdf

ON THIS PAGE

pH A logarithmic measure of hydrogen-ion activity · **ISO** International Organization for Standardization; ISO is its internationally used short name · **EU** European Union · **EN** European Standard, followed by the particular standard number · **=** equals · **EC** European Community, in this legal citation

https://www.epa.gov/caddis/ph

https://www.iso.org/standard/4478.html

https://www.mnhn.fr/fr/michel-eugene-chevreul-1786-1889

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

https://www.fao.org/4/W6530E/W6530E.pdf

https://www.epa.gov/caddis/ph

https://www.iso.org/standard/4478.html

https://www.mnhn.fr/fr/michel-eugene-chevreul-1786-1889

https://wellcomecollection.org/works/u93ydsgv

https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009R1223

EU2 · open source EU3 · open source Chapter contents Continue reading

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TERMS AND SYMBOLS IN THIS READING

EC - European Community. Historical designation in the title Regulation (EC) No 1223/2009. On the water-monitor sheet, EC instead means electrical conductivity.

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

https://www.fao.org/4/W6530E/W6530E.pdf

https://www.epa.gov/caddis/ph

https://www.iso.org/standard/4478.html

https://www.mnhn.fr/fr/michel-eugene-chevreul-1786-1889

CH2 · open source CH3 · open source CH4 · open source EU1 · open source

https://wellcomecollection.org/works/u93ydsgv

https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009R1223

Public abstract describes dedicated analytical methods for free caustic alkali. Confirmed in 2022 according to the catalogue. Full copyrighted standard is not reproduced; no laboratory titration procedure or acceptance limit is invented.

https:/ / www.iso.org/ standard/ 4478.html

EU2 · open source EU3 · open source Chapter contents Continue reading

https://wellcomecollection.org/works/u93ydsgv

https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009R1223

https:/ / www.iso.org/ standard/ 4478.html

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EU European Union · **EC** European Community, in this legal citation

International Labour Organization / World Health Organization

Hygroscopic solid, heat on dissolution, material incompatibilities and dry, closed storage separated from food. The card distinguishes controlled preparation from accidental water contact with stored solid.

https:/ / chemicalsafety.ilo.org/ dyn/ icsc/ showcard.display?p_ card_ id=0360&p_ lang=en&p_ version=2

Matson Photo Service; Library of Congress, 2019711144

12 June 1940, matpc.20376. Date and title derive from the photographer's logbook. A record of labour and movement, not evidence of safe presentday handling.

https:/ / www.loc.gov/ pictures/ item/ 2019711144/

Matson Photo Service; Library of Congress, 2019711145

12 June 1940, matpc.20377. The archival caption identifies the operation; chemical composition, temperatures and finishedproduct tests cannot be read from the image.

https:/ / www.loc.gov/ pictures/ item/ 2019711145/

Inscribed on the Representative List in 2024. Heritage recognition concerns living knowledge and transmission; it is not a chemical product certificate or approval of every historic handling practice.

United Nations Educational, Scientific and Cultural Organization

Inscribed on the Representative List in 2024. Heritage recognition concerns living knowledge and transmission; it is not a chemical product certificate or approval of every historic handling practice.

https:/ / ich.unesco.org/ en/ RL/ tradition-of-nabulsi-soap-making-in-palestine-02112

Visible designer credit: Rizwan Khan. Supplied archive mark: ZeusC Engineering & Design.

Exact supplied sheet 094. Electronic part numbers, wiring and claimed functions are retained as source claims. A current sensor alone does not establish real power or a chemically complete batch record; this chapter does not approve the mains wiring.

TERMS AND SYMBOLS IN THIS READING

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

https://chemicalsafety.ilo.org/dyn/icsc/showcard.display?p_card_id=0360&p_lang=en&p_version=2

https://www.loc.gov/pictures/item/2019711144/

https://www.loc.gov/pictures/item/2019711145/

https://ich.unesco.org/en/RL/tradition-of-nabulsi-soap-making-in-palestine-02112

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Inscribed on the Representative List in 2024. Heritage recognition concerns living knowledge and transmission; it is not a chemical product certificate or approval of every historic handling practice.

https:/ / ich.unesco.org/ en/ RL/ tradition-of-nabulsi-soap-making-in-palestine-02112

ON THIS PAGE

= equals · **EU** European Union

Source register / 5

Checked 7 November 2026. A publication date is distinguished from an exposure date. Unverified source-sheet claims remain identified.

Malene Thyssen; simplified by HLHJ

Original photograph 13 July 2005, Randers, Denmark; simplified derivative in 2020. It depicts nettleextract soap. It is not a photograph of the book's oliveoil batch. Retained from earlier page 645 in the source gallery with both creator credits.

https:/ / commons.wikimedia.org/ wiki/ File:Handmade_ soap_ cropped_ and_ simplified.jpg

TERMS AND SYMBOLS IN THIS READING

HLHJ - Contributor name used by the image editor. The source credits this account with the simplified derivative; no personal-name expansion is invented.

AR / US / CH / EU / WO / Z / IM + number - Source-register keys. Argentina, United States, chemistry, Europe, world, supplied ZeusC sheets and retained image. Numbers identify records.

IM1 · open source Chapter contents

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Observatorio Astronómico de Córdoba, Universidad Nacional de Córdoba

Institutional history: inauguration on 24 October 1871, Benjamin A. Gould as first director, and later transmission of official time by telegraph. No universal sundial design follows from this institutional history.

https:/ / oac.unc.edu.ar/ institucional/ historia/

AR2 · Córdoba Estelar: clocks and meridian instruments

Edgardo Minniti Morgan and Santiago Paolantonio; 2013 digital edition hosted by the Córdoba observatory

Printed page 267 / PDF page 266 identifies Fénon pendulum clock No. 195 and cites Caras y Caretas, 30 November 1912. Printed page 362 / PDF page 361 supplies two meridianinstrument photographs, one dated 30 July 1909 and an observing scene dated 1912. Only the historical image objects are reproduced; the modern book is linked.

https:/ / oac.unc.edu.ar/ files/ Descargas/ Cordoba_ Estelar2013.pdf

Servicio de Hidrografía Naval, Observatorio Naval Buenos Aires

The official table states UTC3 continues from 15 March 2009. Verified 7 November 2026. Check the rule for the actual date and place before applying a civilclock correction. A proposed bill is not treated as a change in force.

https:/ / www.hidro.gov.ar/ observatorio/ LaHora.asp?op=3

Instituto Nacional de Tecnología Industrial

Explains the institute's atomicclock time scale, contribution to Coordinated Universal Time and internet distribution. Its page identifies the naval observatory as the body determining Argentine official time.

https:/ / www.inti.gob.ar/ hora-inti

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EU European Union · **PDF** Portable Document Format · **=** equals

Facultad de Ciencias Astronómicas y Geofísicas, Universidad Nacional de La Plata

Describes a meridian instrument and a humanshadow analemmatic dial. The published overall dimensions are descriptive, not a verified construction template. Our separate ellipse illustration is calculated for a stated latitude.

https:/ / www.fcaglp.unlp.edu.ar/ index.php/ fue_ inaugurado_ el_ complejo_ planetario_ de_ malargue/

David P. Stern; archived NASA Goddard teaching resource

Used for polarstyle geometry and the distinction between a vertical stick and a latitudespecific dial. The page is archived; its old geographic and civiltime generalizations are not copied. Northern instructions must be adapted for southern use.

https:/ / spdf.gsfc.nasa.gov/ pub/ documents/ archived_ websites/ pwg.gsfc.nasa.gov/ stargaze/ Sundial.htm

TERMS AND SYMBOLS IN THIS READING

UTC - Coordinated Universal Time. The shared reference time scale. A civil offset of -3 means three hours behind UTC.

INTI - Instituto Nacional de Tecnología Industrial. Argentina's National Institute of Industrial Technology; its time service is identified separately from official civil-time rules.

NASA - National Aeronautics and Space Administration. United States agency hosting the cited archived lesson and current solar-viewing guidance.

PDF - Portable Document Format. The paginated digital publication; printed page numbers and PDF positions can differ in source books.

No. / N° - Number. An object or instrument identifier, not an observation time.

https://oac.unc.edu.ar/institucional/historia/

https://oac.unc.edu.ar/files/Descargas/Cordoba_Estelar2013.pdf

https://www.hidro.gov.ar/observatorio/LaHora.asp?op=3

AR / US / EU / WO / Z / M + number - Source-register keys. Argentina, United States, Europe, world, supplied ZeusC sheets and original mathematical examples. Numbers identify records.

https://oac.unc.edu.ar/institucional/historia/

https://oac.unc.edu.ar/files/Descargas/Cordoba_Estelar2013.pdf

https://www.hidro.gov.ar/observatorio/LaHora.asp?op=3

https://www.inti.gob.ar/hora-inti

https://www.fcaglp.unlp.edu.ar/index.php/fue_inaugurado_el_complejo_planetario_de_malargue/

https://spdf.gsfc.nasa.gov/pub/documents/archived_websites/pwg.gsfc.nasa.gov/stargaze/Sundial.htm

AR5 · open source US1 · open source Chapter contents Continue reading

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NASA National Aeronautics and Space Administration · **UTC** Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event · **EU** European Union

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Edgardo Minniti Morgan and Santiago Paolantonio; 2013 digital edition hosted by the Córdoba observatory

Printed page 267 / PDF page 266 identifies Fénon pendulum clock No. 195 and cites Caras y Caretas, 30 November 1912. Printed page 362 / PDF page 361 supplies two meridianinstrument photographs, one dated 30 July 1909 and an observing scene dated 1912. Only the historical image objects are reproduced; the modern book is linked.

https:/ / oac.unc.edu.ar/ files/ Descargas/ Cordoba_ Estelar2013.pdf

TERMS AND SYMBOLS IN THIS READING

No. / N° - Number. An object or instrument identifier, not an observation time.

AR / US / EU / WO / Z / M + number - Source-register keys. Argentina, United States, Europe, world, supplied ZeusC sheets and original mathematical examples. Numbers identify records.

https://oac.unc.edu.ar/institucional/historia/

https://oac.unc.edu.ar/files/Descargas/Cordoba_Estelar2013.pdf

https://www.hidro.gov.ar/observatorio/LaHora.asp?op=3

https://www.inti.gob.ar/hora-inti

AR1 · open source AR2 · open source AR3 · open source AR4 · open source

https://www.fcaglp.unlp.edu.ar/index.php/fue_inaugurado_el_complejo_planetario_de_malargue/

https://spdf.gsfc.nasa.gov/pub/documents/archived_websites/pwg.gsfc.nasa.gov/stargaze/Sundial.htm

Printed page 267 / PDF page 266 identifies Fénon pendulum clock No. 195 and cites Caras y Caretas, 30 November 1912. Printed page 362 / PDF page 361 supplies two meridianinstrument photographs, one dated 30 July 1909 and an observing scene dated 1912. Only the historical image objects are reproduced; the modern book is linked.

https:/ / oac.unc.edu.ar/ files/ Descargas/ Cordoba_ Estelar2013.pdf

TERMS AND SYMBOLS IN THIS READING

AR / US / EU / WO / Z / M + number - Source-register keys. Argentina, United States, Europe, world, supplied ZeusC sheets and original mathematical examples. Numbers identify records.

United States Naval Observatory, Astronomical Applications Department

Sign convention used here: apparent solar time minus mean solar time. Civil clock time additionally depends on longitude and legal offset. The worked city values are independently calculated examples, not observations.

https:/ / aa.usno.navy.mil/ faq/ eqtime

US3 · General solar position calculations

Supplies the approximate annual equationoftime series and eastpositive longitude convention. Original vector graphs are calculated from the series for a 365day year, not traced from a source image.

ON THIS PAGE

PDF Portable Document Format · **EU** European Union

National Oceanic and Atmospheric Administration, Global Monitoring Laboratory

Supplies the approximate annual equationoftime series and eastpositive longitude convention. Original vector graphs are calculated from the series for a 365day year, not traced from a source image.

https:/ / gml.noaa.gov/ grad/ solcalc/ solareqns.PDF

The old solar calculator is no longer actively supported. Atmospheric conditions and terrain can affect observed rise/set times. The book uses explicit idealized examples, with no claim of navigationgrade prediction.

https:/ / gml.noaa.gov/ grad/ solcalc/ calcdetails.html

National Institute of Standards and Technology

For 2026 the page gives 8 March to 1 November for participating United States locations. It explains exceptions, including Hawaii and most of Arizona. The example compares declared offsets, not a rule for every US location.

https:/ / www.nist.gov/ pml/ time-and-frequency-division/ popular-links/ daylight-saving-time-dst

National Oceanic and Atmospheric Administration, National Centers for Environmental Information

WMM2025 models the changing main magnetic field and includes uncertainty and limitations. A location/datespecific magnetic declination is different from solar declination. Nearby metal and instrument error still require attention.

https:/ / www.ncei.noaa.gov/ products/ world-magnetic-model

United States Naval Observatory, Astronomical Applications Department

Conventional sunset uses the Sun’s upper limb at an ideal horizon. Civil, nautical and astronomical twilight use solarcentre depressions of 6, 12 and 18 degrees. These definitions do not guarantee safe working light at a particular site.

https:/ / aa.usno.navy.mil/ faq/ RST_ defs

TERMS AND SYMBOLS IN THIS READING

US / USA - United States / United States of America. Country labels; the worked northern site does not represent every local time rule.

WMM2025 - World Magnetic Model, 2025 release. A dated magnetic-field model, not a timeless local magnetic-declination value.

US6 · open source US7 · open source Chapter contents Continue reading

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FULL BOOK / PAGE 3406 / 4232

Supplies the approximate annual equationoftime series and eastpositive longitude convention. Original vector graphs are calculated from the series for a 365day year, not traced from a source image.

https:/ / gml.noaa.gov/ grad/ solcalc/ solareqns.PDF

National Aeronautics and Space Administration

Indirect projection is distinguished from looking through a hole or optical instrument. These shadow activities require no direct viewing of the Sun.

https:/ / science.nasa.gov/ eclipses/ safety/

Harris & Ewing; Library of Congress, digital identifier hec.33970

Commons mirror of Library of Congress catalogue 2016878673. Original image bytes downloaded from the Library of Congress image service. Catalogue endpoint was unavailable during this check; mirror metadata identifies photographer, 1936 date and no known publication restrictions. The photograph is evidence of the recorded appearance, not current condition.

https:/ / commons.wikimedia.org/ wiki/ File:Sun_ dial_ at_ Meridian_ Park,_ 16th_ St._ (Washington,_ D.C.)_ LCCN2016878673.jpg

United States Naval Observatory, Astronomical Applications Department

Reference for solar declination and the use of a twoargument arctangent to retain the correct quadrant. The book's rayplane checks use elementary vector geometry independently of the approximate annual series.

https:/ / aa.usno.navy.mil/ faq/ sun_ approx

Jacques Lucas; The Metropolitan Museum of Art, Gift of Mrs. Stephen D. Tucker, 1903

Silver dial, French, La Rochelle, probably before 1681. The record describes three latitude scales and an adjustable gnomon. Publicdomain image and object data checked through the museum API. An internally inconsistent Butterfield date in the prose is not reproduced.

https:/ / www.metmuseum.org/ art/ collection/ search/ 188861

Museo Galileo, Florence

Museum account of varied portable and fixed sundial forms. A pocket dial, an equatorial dial and a vertical dial have different geometry; the horizontal plan here is not a universal template.

https:/ / catalogue.museogalileo.it/ section/ MeasuringTimeByDaySundials.html

City of Melbourne Art and Heritage Collection

Maker unknown; bronze and sandstone. The city dates the initial construction to the nineteenth century and records reconstruction of the base in 1947. The photograph's date is a separate fact.

https:/ / citycollection.melbourne.vic.gov.au/ sundial/

TERMS AND SYMBOLS IN THIS READING

D.C. - District of Columbia. The United States federal district in the Washington photograph's catalogue title.

hec.33970 / ppmsca.41461 - Library of Congress digital image identifiers. Codes identifying the Washington and Jaipur source images, not instrument specifications.

https://science.nasa.gov/eclipses/safety/

https://commons.wikimedia.org/wiki/File:Sun_dial_at_Meridian_Park,_16th_St._(Washington,_D.C.)_LCCN2016878673.jpg

https://aa.usno.navy.mil/faq/sun_approx

https://www.metmuseum.org/art/collection/search/188861

AR / US / EU / WO / Z / M + number - Source-register keys. Argentina, United States, Europe, world, supplied ZeusC sheets and original mathematical examples. Numbers identify records.

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API Application programming interface · **EU** European Union

https://science.nasa.gov/eclipses/safety/

https://commons.wikimedia.org/wiki/File:Sun_dial_at_Meridian_Park,_16th_St._(Washington,_D.C.)_LCCN2016878673.jpg

https://aa.usno.navy.mil/faq/sun_approx

https://www.metmuseum.org/art/collection/search/188861

https://catalogue.museogalileo.it/section/MeasuringTimeByDaySundials.html

https://citycollection.melbourne.vic.gov.au/sundial/

EU2 · open source WO1 · open source Chapter contents Continue reading

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https:/ / aa.usno.navy.mil/ faq/ sun_ approx

TERMS AND SYMBOLS IN THIS READING

hec.33970 / ppmsca.41461 - Library of Congress digital image identifiers. Codes identifying the Washington and Jaipur source images, not instrument specifications.

AR / US / EU / WO / Z / M + number - Source-register keys. Argentina, United States, Europe, world, supplied ZeusC sheets and original mathematical examples. Numbers identify records.

https://science.nasa.gov/eclipses/safety/

https://commons.wikimedia.org/wiki/File:Sun_dial_at_Meridian_Park,_16th_St._(Washington,_D.C.)_LCCN2016878673.jpg

https://aa.usno.navy.mil/faq/sun_approx

https://www.metmuseum.org/art/collection/search/188861

Jeepika, own photograph, 4 January 2014

Creative Commons AttributionShareAlike 3.0 Unported. The existing book image is retained without new retouching; source repository has a larger original. The teaching diagram is independently drawn and is not a measured survey of the monument.

https:/ / commons.wikimedia.org/ wiki/ File:Melbourne_ sundial_ at_ Flagstaff_ Gardens.JPG

UNESCO World Heritage Centre

Early eighteenthcentury astronomical site with roughly twenty major fixed instruments. Its masonry instruments are historical evidence of organized observation and craft. Their forms are not interchangeable with a flat horizontal dial.

https:/ / whc.unesco.org/ en/ list/ 1338/

Photoglob Co., publisher; Library of Congress, ppmsca.41461

Commons mirror of Library of Congress catalogue 2017657616, historical photochrom dated 1890 in the mirror. Photochrom colour is a printing process, not a claim of contemporary naturalcolour photography. Original service image obtained from the Library of Congress; exact exposure day is unconfirmed.

ON THIS PAGE

EU European Union · **UNESCO** United Nations Educational, Scientific and Cultural Organization

https:/ / commons.wikimedia.org/ wiki/ File:Jeypore._ Jey_ Sings_ Observatory_ LCCN2017657616.jpg

Z1 · Digital Compass Using Magnetometer, Design Variant 5: original and label check

Visible design credit: Rizwan Khan; supplied ZeusC sheet 093. Sensor data sheet: Honeywell Solid State Electronics Center.

Exact supplied original matched to the original ZIP and earlier recovery. The linked manufacturer data sheet, Table 1 on page 3, identifies DRDY (data ready) as the interrupt pin; it does not establish a second INT (interrupt) pin on this chip. The sheet prints both labels. Wiring, accuracy, tilt compensation and battery claims remain unvalidated. Date and first publication of the supplied sheet remain unconfirmed.

https:/ / cdn.sparkfun.com/ datasheets/ Sensors/ Magneto/ HMC5883L-FDS.pdf

Supplied ZeusC archive, sheet 367; underlying maker not established

Exact supplied image retained. No readable underlying maker credit is present. The seasons and northern pole diagram are not a clock calibration, and Polaris is not visible above an Argentine horizon. Unknown credit is not assigned to ZeusC as original authorship.

Original calculations and illustrations for Carlos “Charlie” Verbelen

Rayplane intersections independently check hourline signs in both hemispheres at several declinations. Coordinates are rounded teaching sites; equationoftime +10 minutes is a deliberately stated scenario, not a particular observation date. All dimensions refer to the stated teaching design.

TERMS AND SYMBOLS IN THIS READING

AR / US / EU / WO / Z / M + number - Source-register keys. Argentina, United States, Europe, world, supplied ZeusC sheets and original mathematical examples. Numbers identify records.

https://commons.wikimedia.org/wiki/File:Melbourne_sundial_at_Flagstaff_Gardens.JPG

https://whc.unesco.org/en/list/1338/

https://commons.wikimedia.org/wiki/File:Jeypore._Jey_Sings_Observatory_LCCN2017657616.jpg

https://cdn.sparkfun.com/datasheets/Sensors/Magneto/HMC5883L-FDS.pdf

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Visible design credit: Rizwan Khan; supplied ZeusC sheet 093. Sensor data sheet: Honeywell Solid State Electronics Center.

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https:/ / cdn.sparkfun.com/ datasheets/ Sensors/ Magneto/ HMC5883L-FDS.pdf

ON THIS PAGE

DRDY Data ready, a signal indicating a new sensor measurement is available · **INT** Interrupt, an electronic signal used to request processor attention; exact function depends on the part · **EU** European Union

Sources, image credits and reading notes

Sources checked 2026-11-07. Interpretations and workshop examples are identified in the readings.

AGGO · Observatorio Argentino Alemán de Geodesia: eclipse observations, 2020

Station meteorology and local times, not a Patagonia totality station.

https://www.aggo-conicet.gob.ar/eclipse2020.php

ARPRICE · Selplast: Ibico 770100, 30 cm stainless-steel ruler

Displayed ARS 2784. Conditional payment discounts excluded.

https://www.selplast.com.ar/productos/regla-metal-acero-30-cm-ibico-770100-cr-46237/

EUPRICE · Casa Piera: Ami stainless-steel ruler, 30 cm

30 cm variant displayed EUR 5.88 including value-added tax, discounted from EUR 6.00.

https://casapiera.com/es/accesorios/8346-regla-metalica-ami.html

IGN · Instituto Geográfico Nacional: 14 December 2020 eclipse in Argentina

Town table identifies its time column as maximum eclipse. Times are rounded town-level predictions.

https://www.ign.gob.ar/content/eclipse-solar-del-14-de-diciembre-de-2020-en-la-rep%C3%BAblica-argentina

IMCCE · Government-hosted eclipse outreach booklet, 2020

Map credited to Patrick Rocher, IMCCE, Observatoire de Paris. Table distinguishes start and end of totality.

https://www.argentina.gob.ar/sites/default/files/eclipse_total_solar.pdf

NASAIMAGE · NASA Earth Observatory: Shadows from a Solar Eclipse, 16 December 2020

Image by Joshua Stevens, using GOES-16 imagery courtesy of NOAA/NESDIS and NASA/GSFC shadow calculations.

https://science.nasa.gov/earth/earth-observatory/shadows-from-a-solar-eclipse-147659/

PATH · Fred Espenak, NASA Goddard Space Flight Center: path of the 2020 eclipse

Central-line coordinates and Universal Time are distinct from town forecasts.

https://eclipse.gsfc.nasa.gov/SEpath/SEpath2001/SE2020Dec14Tpath.html

RUMRIGHTS · David Rumsey Map Collection: copyright and permissions

Credited use within publications permitted; separate rules apply to standalone facsimile sales.

https://www.davidrumsey.com/about/copyright-and-permissions

RUMSEY · Urbano Monte: Eclisse del sole. Libro Quarto, 1587, list 10130.073

David Rumsey Map Collection, David Rumsey Map Center, Stanford University Libraries.

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AGGO Argentine-German Geodetic Observatory · **cm** centimetre, 0.01 metre · **ARS** Argentine peso · **EUR** Euro · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **IMCCE** Institut de mécanique céleste et de calcul des éphémérides · **NASA** National Aeronautics and Space Administration

https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~303628~90074252:Eclisse-del-sole--Libro-Quarto-

SAFE · NASA: Eclipse safety

Indirect pinhole viewing and proper solar-viewing protection.

https://science.nasa.gov/eclipses/safety/

USPRICE · Volition vendor listing: Pittsburgh 66199, 12-inch stainless-steel ruler

Opened page displayed USD 1.99; search index displayed USD 2.49. Budget uses opened-page value. Vendor listed as Harbor Freight; lead time unknown.

https://www.govolition.com/product/V124-66199

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PATH · Fred Espenak, NASA Goddard Space Flight Center: path of the 2020 eclipse

Central-line coordinates and Universal Time are distinct from town forecasts.

https://eclipse.gsfc.nasa.gov/SEpath/SEpath2001/SE2020Dec14Tpath.html

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Credited use within publications permitted; separate rules apply to standalone facsimile sales.

https://www.davidrumsey.com/about/copyright-and-permissions

RUMSEY · Urbano Monte: Eclisse del sole. Libro Quarto, 1587, list 10130.073

David Rumsey Map Collection, David Rumsey Map Center, Stanford University Libraries.

https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~303628~90074252:Eclisse-del-sole--Libro-Quarto-

SAFE · NASA: Eclipse safety

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https://science.nasa.gov/eclipses/safety/

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NASA National Aeronautics and Space Administration · **USD** United States dollar

creator's credit. The workshop examples are documented designs and calculations; they have not been physically built and tested for this edition.

Sources, image credits and reading notes

BERNOULLI · OpenStax, Rice University: Bernoulli's equation

Reference for the ideal energy equation and its assumptions. New worked examples are independently derived.

https://openstax.org/books/university-physics-volume-1/pages/14-6-bernoullis-equation

BROGLIE · Louis de Broglie: The wave nature of the electron, Nobel lecture, 12 December 1929

https://www.nobelprize.org/uploads/2016/04/broglie-lecture.pdf

BROOKS · McGill University Rutherford Museum: emanation experiments

Harriet Brooks assisted experiments investigating the gaseous nature of emanation.

https://www.physics.mcgill.ca/museum/rutherforddisplay.html

CAUCHOIS · E. A. Stern: The EXAFS family tree, Journal of Synchrotron Radiation 6 (1999)

First-person historical research article describes the 1932 bent-crystal transmission spectrometer.

https://journals.iucr.org/s/issues/1999/03/00/hi4592/

CURIE · Marie Curie: Nobel lecture in chemistry, 1911

First-person account of separation, identification and the 1898 polonium and radium research.

https://www.nobelprize.org/prizes/chemistry/1911/marie-curie/lecture/?print=1

DAWN · Lawrence Livermore National Laboratory: Dawn Shaughnessy, 2019

Names elements 114 through 118; do not repeat the poster range as an unqualified individual discovery claim.

https://lasers.llnl.gov/news/dawn-shaughnessy-stellar-reactions-galaxy-not-so-far-far-away

HOFFMAN · Lawrence Berkeley National Laboratory: Darleane Hoffman, 1999 record

Natural plutonium-244 and confirmation of seaborgium are separate contributions.

https://www2.lbl.gov/Publications/Currents/Archive/Apr-23-1999.html

HYDRO · Daniel Bernoulli: Hydrodynamica, 1738, title-page image record

Public-domain title page, original source Kanazawa Institute of Technology. File metadata preserved with the image.

https://commons.wikimedia.org/wiki/File:HYDRODYNAMICA,_Danielis_Bernoulli.png

MEITNER · Lise Meitner and Otto R. Frisch: Disintegration of Uranium by Neutrons, Nature 143 (1939), 239-240

Original explanation of nuclear fission; distinct from the earlier protactinium work.

https://www.nature.com/articles/143239a0

ON THIS PAGE

EXAFS Extended X-ray absorption fine structure · = equals

NODDACK · Royal Society of Chemistry: rhenium history

1925 identification associated with Ida and Walter Noddack and Otto Berg; the masurium claim is distinct.

https://periodic-table.rsc.org/podcast/75/rhenium

PEREY · Musée Curie: institutional history exhibition

Timeline records Perey's discovery of francium in 1939.

https://musee.curie.fr/.uploads/2022-10/5257_curie-expo-10-ans_ok_ok-rvb-ce9c3f83.pdf

PHELPS · Oak Ridge National Laboratory: Clarice E. Phelps

Berkelium-249 purification as part of the team supporting confirmation of element 117.

https://www.ornl.gov/staff/clarice-e-phelps/

SI · National Institute of Standards and Technology: SI units

SI is the International System of Units.

https://www.nist.gov/pml/owm/metric-si/si-units

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HYDRO · Daniel Bernoulli: Hydrodynamica, 1738, title-page image record

Public-domain title page, original source Kanazawa Institute of Technology. File metadata preserved with the image.

https://commons.wikimedia.org/wiki/File:HYDRODYNAMICA,_Danielis_Bernoulli.png

MEITNER · Lise Meitner and Otto R. Frisch: Disintegration of Uranium by Neutrons, Nature 143 (1939), 239-240

Original explanation of nuclear fission; distinct from the earlier protactinium work.

https://www.nature.com/articles/143239a0

NODDACK · Royal Society of Chemistry: rhenium history

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https://periodic-table.rsc.org/podcast/75/rhenium

PEREY · Musée Curie: institutional history exhibition

Timeline records Perey's discovery of francium in 1939.

https://musee.curie.fr/.uploads/2022-10/5257_curie-expo-10-ans_ok_ok-rvb-ce9c3f83.pdf

PHELPS · Oak Ridge National Laboratory: Clarice E. Phelps

Berkelium-249 purification as part of the team supporting confirmation of element 117.

https://www.ornl.gov/staff/clarice-e-phelps/

SI · National Institute of Standards and Technology: SI units

ON THIS PAGE

SI Système international d'unités, the International System of Units

SI is the International System of Units.

https://www.nist.gov/pml/owm/metric-si/si-units

USPRICE · Volition vendor listing: Pittsburgh 66199, 12-inch stainless-steel ruler

Opened page displayed USD 1.99; search index displayed USD 2.49. Budget uses opened-page value. Vendor listed as Harbor Freight; lead time unknown.

https://www.govolition.com/product/V124-66199

New diagrams are explanatory drawings with stated dimensions or assumptions. Historical images and supplied originals keep their own credits. The supplied archive mark does not replace the underlying creator's credit. The workshop examples are documented designs and calculations; they have not been physically built and tested for this edition.

SOURCES FOR THIS READING

TSUJIMURA: Ochanomizu University Library: Michiyo Tsujimura

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Same preparation, one changed variable

Visible colour is not proof of chemical purity, catechin content, drinking-water quality or a health effect.

Change only one factor in the next trial, such as extraction time. If several factors change at once, the result cannot identify which change mattered. Keep the leaf source and batch information. The scientific value of a common material increases when its preparation becomes describable rather than merely familiar.

TSUJIMURA · source

BOOK IV / 92BI / 18

Sources, image credits and reading notes

ASTON · W. Ramsay and Emily Aston: The atomic weight of boron, 1893

Journal of the Chemical Society, Transactions 63, 207-217. Publisher record verifies authorship and date.

https://pubs.rsc.org/en/content/articlelanding/1893/ct/ct8936300207

BORRELL · María Jesús Santesmases: Género, afición y mérito, a biography of Sara Borrell Ruiz

Spanish National Research Council record of original historical research.

https://cchs.csic.es/es/article/investigadoras-ana-romero-pablos-maria-jesus-santesmases-ifs-coordinadoras-coautoras

GAO · Chinese Academy of Sciences: Gao Xiaoxia

Institutional record identifies analytical chemistry and election in 1980.

https://english.casad.cas.cn/members/pm/202404/t20240422_660728.html

GAOPAPER · Qiao Qingdong and Gao Xiaoxia: electrochemical study of chlorophyll derivatives, 1995

Peking University journal record, volume 31, issue 2, page 205.

https://xbna.pku.edu.cn/CN/Y1995/V31/I2/205

ON THIS PAGE

SI Système international d'unités, the International System of Units · **USD** United States dollar

GOLDBERG · I. Goldberg: Ueber Phenylirungen bei Gegenwart von Kupfer als Katalysator, 1906

Berichte 39, 1691-1692. The present publisher metadata spells the given name “Iram”; the supplied poster and historical literature use Irma. Do not infer a death date from its question mark.

https://chemistry-europe.onlinelibrary.wiley.com/doi/10.1002/cber.19060390298

GORDON · Grand Rapids History Center: Michigan women and the whooping cough vaccine collection, 328

Finding aid includes Loney Clinton Gordon and oral-history material. Historical contribution, not a vaccine-production method.

https://grplweb.grpl.org/history/findingaids/328.pdf

HARDY · Arthur C. Cope and Elizabeth M. Hardy: allyl-group rearrangement, 1940

Journal of the American Chemical Society 62, 441-444. Publisher record supplies original issue date; the later online date is not the discovery date.

https://pubs.acs.org/doi/10.1021/ja01859a055

KELLEY · Sinah E. Kelley and collaborators: Production of Itaconic Acid by Aspergillus terreus in 20-Liter Fermentors, 1952

Publisher-indexed authorship and title checked; no fermentation recipe is reproduced.

https://pubs.acs.org/doi/10.1021/ie50509a062

LAWSON · Katheryn E. Lawson: Infrared Absorption of Inorganic Substances, 1961, contemporary book record

Contemporary bibliographic evidence for the book; does not establish every biographical claim on the poster.

https://www.cambridge.org/core/journals/mineralogical-magazine-and-journal-of-the-mineralogical-society/article/abs/katheryn-e-lawson-infrared-absorption-of-inor

PENNINGTON · United States Food and Drug Administration: Mary Engle Pennington and the cold chain

Institutional account of refrigeration research and laboratory leadership.

https://www.fda.gov/about-fda/fda-history-exhibits/mary-engle-pennington-cold-chain-food-safety

PENPHOTO · Science History Institute: Mary Engle Pennington, historical image and biography

Railcar photograph around 1910; photographer not identified. Image record retained.

https://www.sciencehistory.org/education/scientific-biographies/mary-engle-pennington/

RANGANATHAN · Indian National Science Academy: Darshan Ranganathan, biographical memoir

First-person scientific memoir discusses molecular design, self-assembly and collaboration with Isabella Karle.

https://insaindia.res.in/BM/BM34_0807.pdf

RANGPAPERS · Indian Academy of Sciences: Darshan Ranganathan publication archive

Primary research bibliography for supramolecular and peptide work.

https://repository.ias.ac.in/view/fellows/Ranganathan%3D3ADarshan_%3D3A%3D3A.html

ROCK · Science History Institute: oral history interview with Marvin L. Vestal

Transcript identifies Sibyl M. Rock and industrial mass-spectrometry work. The poster prints “Sybil”; the archival transcript uses “Sibyl.”

https://digital.sciencehistory.org/works/6d56zx87n

TSUJIMURA · Ochanomizu University Library: Michiyo Tsujimura

Institutional archive records tea research, the 1929 catechin isolation and 1932 agriculture doctorate.

https://www.lib.ocha.ac.jp/en/06/tsujimura_michiyo.html

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READER PAGE 27 / 27 FULL BOOK / PAGE 3532 / 4232

https://grplweb.grpl.org/history/findingaids/328.pdf

HARDY · Arthur C. Cope and Elizabeth M. Hardy: allyl-group rearrangement, 1940

Journal of the American Chemical Society 62, 441-444. Publisher record supplies original issue date; the later online date is not the discovery date.

https://pubs.acs.org/doi/10.1021/ja01859a055

KELLEY · Sinah E. Kelley and collaborators: Production of Itaconic Acid by Aspergillus terreus in 20-Liter Fermentors, 1952

Publisher-indexed authorship and title checked; no fermentation recipe is reproduced.

https://pubs.acs.org/doi/10.1021/ie50509a062

LAWSON · Katheryn E. Lawson: Infrared Absorption of Inorganic Substances, 1961, contemporary book record

Contemporary bibliographic evidence for the book; does not establish every biographical claim on the poster.

https://www.cambridge.org/core/journals/mineralogical-magazine-and-journal-of-the-mineralogical-society/article/abs/katheryn-e-lawson-infrared-absorption-of-inor

PENNINGTON · United States Food and Drug Administration: Mary Engle Pennington and the cold chain

Institutional account of refrigeration research and laboratory leadership.

https://www.fda.gov/about-fda/fda-history-exhibits/mary-engle-pennington-cold-chain-food-safety

PENPHOTO · Science History Institute: Mary Engle Pennington, historical image and biography

Railcar photograph around 1910; photographer not identified. Image record retained.

https://www.sciencehistory.org/education/scientific-biographies/mary-engle-pennington/

RANGANATHAN · Indian National Science Academy: Darshan Ranganathan, biographical memoir

First-person scientific memoir discusses molecular design, self-assembly and collaboration with Isabella Karle.

https://insaindia.res.in/BM/BM34_0807.pdf

RANGPAPERS · Indian Academy of Sciences: Darshan Ranganathan publication archive

Primary research bibliography for supramolecular and peptide work.

https://repository.ias.ac.in/view/fellows/Ranganathan%3D3ADarshan_%3D3A%3D3A.html

ROCK · Science History Institute: oral history interview with Marvin L. Vestal

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https://digital.sciencehistory.org/works/6d56zx87n

SI · National Institute of Standards and Technology: SI units

SI is the International System of Units.

https://www.nist.gov/pml/owm/metric-si/si-units

TSUJIMURA · Ochanomizu University Library: Michiyo Tsujimura

Institutional archive records tea research, the 1929 catechin isolation and 1932 agriculture doctorate.

https://www.lib.ocha.ac.jp/en/06/tsujimura_michiyo.html

USPRICE · Volition vendor listing: Pittsburgh 66199, 12-inch stainless-steel ruler

Opened page displayed USD 1.99; search index displayed USD 2.49. Budget uses opened-page value. Vendor listed as Harbor Freight; lead time unknown.

https://www.govolition.com/product/V124-66199

New diagrams are explanatory drawings with stated dimensions or assumptions. Historical images and supplied originals keep their own credits. The supplied archive mark does not replace the underlying creator’s credit. The workshop examples are documented designs and calculations; they have not been physically built and tested for this edition.

Words, symbols and abbreviations

Definitions refer to their use in this reader.

2D: Twodimensional, described in a plane.

3D: Threedimensional, having spatial extent in three independent directions.

ARS: Argentine peso.

BY: Attribution required under the stated Creative Commons licence.

CC: Creative Commons, the licence system named in a source credit.

EU: European Union.

EUR: Euro.

Hz: Hertz, one cycle per second, used for frequency.

NC: NonCommercial, restricting use under the stated licence to noncommercial purposes.

ND: NoDerivatives, restricting distribution of adapted material under the stated licence.

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SI Système international d’unités, the International System of Units · **USD** United States dollar · **BY** Attribution condition in a Creative Commons licence · **NC** NonCommercial, a licence restriction · **ND** NoDerivatives, a licence restriction

PDF: Portable Document Format, the fixedlayout reading format.

Q.E.D.: Quod erat demonstrandum, Latin for “which was to be demonstrated”, a traditional endofproof phrase.

SA: ShareAlike, requiring qualifying adaptations to use the same or a compatible licence.

SI: Système international d’unités, the International System of Units.

SVG: Scalable Vector Graphics, the editable vectordrawing format.

US: United States.

USD: United States dollar.

VAT: Valueadded tax.

a: The edge length in the geometric examples; its unit must be stated.

cm: Centimetre, one hundredth of a metre.

in: Inch, equal to exactly 25.4 millimetres.

k: A dimensionless linear scale factor.

kg: Kilogram, the SI unit of mass. The capitalized Kg on the source sheet is not the standard symbol.

m: Metre, the SI unit of length.

mL: Millilitre, one thousandth of a litre.

mm: Millimetre, one thousandth of a metre.

√: Squareroot sign; √2 multiplied by itself equals 2.

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BOOK IV / 92BK / 27

Q.E.D.: Quod erat demonstrandum, Latin for “which was to be demonstrated”, a traditional endofproof phrase.

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SA ShareAlike, a licence condition for adaptations · **VAT** Value-added tax · **SI** Système international d’unités, the International System of Units

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Sources, image credits and reading notes

BYRNE · Oliver Byrne, The First Six Books of the Elements of Euclid, 1847; digital arrangement record

The displayed proof is a 2010 vertical arrangement by Dr Mirko Junge of Byrne's historical material.

https://commons.wikimedia.org/wiki/File:Byrne_1847_Satz_des_Pythagoras_Hochformat.jpg

EUCLID · Euclid, Elements, Book I, Proposition 47; David Joyce's edition at Clark University

Right-triangle theorem and proof. New construction examples are independently derived.

https://mathcs.clarku.edu/~djoyce/elements/bookI/propI47.html

LENGTH · National Institute of Standards and Technology: SI units, length

Metre and length units; exact inch conversion is 25.4 millimetres.

https://www.nist.gov/pml/owm/si-units-length

BOOK IV / 92BK / 28

Words, symbols and abbreviations

A: Ampere, the unit of electric current. Node letters A and B are identifiers, not units.

AA: A standardized cylindrical battery size designation, not an acronym.

ABS: Antilock braking system.

AC: Alternating current in electrical discussions. On the vehicle label "AC compressor", AC means air conditioning; context determines the meaning.

BCM: Body control module, serving bodyrelated electrical functions.

CKP: Crankshaft position, used for the labelled crankshaftposition sensor.

CMP: Camshaft position, used for the labelled camshaftposition sensor.

COM: Common, the usual label for the meter's commonreference lead socket.

DC: Direct current; current has one direction in the steady operating condition used here.

DMM: Digital multimeter, an instrument with selectable electrical measurement functions.

E: Electric field in the field equations; not energy in those expressions.

ON THIS PAGE

SI Système international d'unités, the International System of Units · **BCM** Body control module, serving body-related electrical functions · **CKP** Crankshaft position, used for the labelled crankshaft-position sensor · **CMP** Camshaft position, used for the labelled camshaft-position sensor · **COM** Common, the usual label for the meter's common-reference lead socket

ECM: Engine control module.

ECT: Engine coolant temperature, used for the labelled temperature sensor.

ECU: Electronic control unit; the vehicle sheet uses Engine ECU for the engine controller.

ESC: Electronic stability control.

ETC: Electronic throttle control.

I: Electric current in the circuit equations.

J: Current density on the original Ohm sheet; J is also the unit symbol for joule elsewhere.

KCL: Kirchhoff's current law: current accounting at a junction under the stated circuit assumptions.

KVL: Kirchhoff's voltage law: signed potential changes around the stated circuit loop sum to zero.

LED: Lightemitting diode, a semiconductor light source whose behaviour is not that of a fixed resistor.

MAF: Mass air flow, the quantity sensed by the labelled intake sensor.

MAP: Manifold absolute pressure, the quantity sensed by the labelled engine sensor.

O2: Oxygen, written O_2 as a molecular formula; the sheet uses it for an oxygen sensor.

P: Power in the circuit equations.

Q: Net electric charge enclosed by the chosen closed surface.

R: Resistance in the circuit equations.

S: Conductor crosssectional area in the original sheet's notation, not necessarily the SI unit siemens in that formula.

SRS: Supplemental restraint system, including airbagrelated functions; not a beginner repair subject.

TCM: Transmission control module.

V: Volt, the unit of electric potential difference; V can also denote the voltage quantity in a formula.

W: Watt, one joule per second, the unit of power.

l: Lowercase ell, conductor length in the original Ohm sheet.

mA: Milliampere, one thousandth of an ampere.

Φ: Phi, electric flux in the Gauss chapter; this uppercase symbol is different from the golden ratio φ.

Ω: Ohm, the unit of electrical resistance.

ε0: Epsilon nought, vacuum permittivity.

σ: Sigma, electrical conductivity in the original Ohm sheet.

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ON THIS PAGE

ECU Electronic control unit; the vehicle sheet uses Engine ECU for the engine controller · **LED** Light-emitting diode · **O_2** Molecular oxygen · **SI** Système international d'unités, the International System of Units · **SRS** Supplemental restraint system, including airbag-related functions; not a beginner repair subject · **Ω** ohm, electrical resistance · **ND** NoDerivatives, a licence restriction

O2: Oxygen, written O_2 as a molecular formula; the sheet uses it for an oxygen sensor.

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SVG: Scalable Vector Graphics, the editable vectordrawing format.

TCM: Transmission control module.

US: United States.

USD: United States dollar.

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Contents Continue reading Previous reading Main book lesson

Sources, image credits and reading notes

GAUSS · OpenStax, Rice University: explaining Gauss's law

Closed-surface electric flux and enclosed charge.

https://openstax.org/books/university-physics-volume-2/pages/6-2-explaining-gausss-law

ON THIS PAGE

O_2 Molecular oxygen · **SI** Système international d'unités, the International System of Units · **SA** ShareAlike, a licence condition for adaptations · **SRS** Supplemental restraint system, including airbag-related functions; not a beginner repair subject · **VAT** Value-added tax · **Ω** ohm, electrical resistance

HOLDER_US · Adafruit product 770: switched two-AA battery holder

Displayed USD 3.95 on 7 November 2026. Holder only; cells, shipping and tax not included.

https://www.adafruit.com/product/770

KIRCHHOFF · OpenStax, Rice University: Kirchhoff's rules

https://openstax.org/books/university-physics-volume-2/pages/10-3-kirchhoffs-rules

METER_R · Adafruit: multimeters, resistance

Resistance measurement with the component disconnected from power.

https://learn.adafruit.com/multimeters/resistance

METER_US · Adafruit product 850: pocket autoranging digital multimeter

Displayed USD 24.95 on 7 November 2026. DC voltage and resistance functions listed; leads are integrated on this model. Follow its own manual. Shipping and tax excluded.

https://www.adafruit.com/product/850

METER_V · Adafruit: multimeters, voltage

Voltage measurement across two points. Follow the manual for the actual meter and use this reader only with the stated small battery circuit.

https://learn.adafruit.com/multimeters/voltage

OHM · OpenStax, Rice University: Ohm's law

Ohmic relation and its limits. Independently calculated low-voltage examples are used here.

https://openstax.org/books/university-physics-volume-2/pages/9-4-ohms-law

OHM1827 · Georg Simon Ohm: Die galvanische Kette, 1827, Smithsonian Libraries scan

Public-domain source. Full scan pages 5 and 255 supply the title page and mathematical figure plate.

https://commons.wikimedia.org/wiki/File:Die_galvanische_Kette_(IA_diegalvanischeke00ohmg).pdf

OHMCAT · Hong Kong University of Science and Technology Library: Ohm, 1827 catalogue record

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https://doi.org/10.14711/spcol/b458365

RESISTOR_AR · Guebyte, Argentina: 330-ohm 1/4-watt 5-percent metal-film resistor listing

Displayed ARS 199 per listed resistor on 7 November 2026. Mendoza pickup indicated by store. Confirm stock, quantity and final shipping.

https://guebyte.mitiendanube.com/productos/resistencia-330-1-4w-5-metal-film/

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ON THIS PAGE

USD United States dollar · **DC** Direct current · **ARS** Argentine peso

https://www.adafruit.com/product/770

KIRCHHOFF · OpenStax, Rice University: Kirchhoff's rules

https://openstax.org/books/university-physics-volume-2/pages/10-3-kirchhoffs-rules

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METER_US · Adafruit product 850: pocket autoranging digital multimeter

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https://www.adafruit.com/product/850

METER_V · Adafruit: multimeters, voltage

Voltage measurement across two points. Follow the manual for the actual meter and use this reader only with the stated small battery circuit.

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OHM1827 · Georg Simon Ohm: Die galvanische Kette, 1827, Smithsonian Libraries scan

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https://commons.wikimedia.org/wiki/File:Die_galvanische_Kette_(IA_diegalvanischeke00ohmg).pdf

OHMCAT · Hong Kong University of Science and Technology Library: Ohm, 1827 catalogue record

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https://guebyte.mitiendanube.com/productos/resistencia-330-1-4w-5-metal-film/

USPRICE · Volition vendor listing: Pittsburgh 66199, 12-inch stainless-steel ruler

Opened page displayed USD 1.99; search index displayed USD 2.49. Budget uses opened-page value. Vendor listed as Harbor Freight; lead time unknown.

https://www.govolition.com/product/V124-66199

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USD United States dollar · **DC** Direct current · **ARS** Argentine peso

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Words, symbols and abbreviations

3D: Threedimensional.

A: Ampere in an electrical rating; a drawing view letter is only a label.

AC: Alternating current.

ACI: American Concrete Institute.

AISI: American Iron and Steel Institute; often part of a steel grade designation.

ANSYS: A proprietary engineeringanalysis software name. A picture of its model does not verify the inputs or results.

ASTM: ASTM International, a standards organisation; a standard number is part of a material specification, not proof that a supplied part complies.

BIG: Bjarke Ingels Group, the architectural practice.

BIM: Building information modelling: a coordinated digital representation of a building and its information.

BOM: Bill of materials, the counted purchase and cut list.

CAD: Computeraided design, the drawing or modelling process.

CIP: Castinplace, usually describing concrete placed in its final position.

psi: Poundsforce per square inch, a pressure unit.

rpm: Revolutions per minute, a rotation rate.

CO: Carbon monoxide, a toxic combustion gas.

CO2: Carbon dioxide.

DC: Direct current, electric current in one direction.

DL: Dead load, the permanent weight assumed in a structural load case.

DOF: Degree of freedom, an independent possible motion or displacement.

DOT: Department of Transportation, used in the United States tyre identification marking.

EN: European Standard, followed by the particular standard number.

ENARGAS: Ente Nacional Regulador del Gas, Argentina's gas regulator named in the cited guidance.

FDM: Fused deposition modelling, a process for making plastic parts by depositing heated filament.

HDPE: Highdensity polyethylene, a tough plastic used for certain frames, bins and cutting surfaces.

HSS: Hollow structural section.

ON THIS PAGE

AISI American Iron and Steel Institute; often part of a steel grade designation · **ASTM** ASTM International, a standards organisation; a standard number is part of a material specification, not proof that a supplied part complies · **CAD** Computer-aided design · **CIP** Cast-in-place concrete · **HDPE** High-density polyethylene

ICA: Institute of Contemporary Art, Boston.

INTA: Instituto Nacional de Tecnología Agropecuaria, Argentina's National Institute of Agricultural Technology.

L: Litre, a unit of volume.

LED: Lightemitting diode.

LL: Live load, the imposed variable load assumed in a structural load case.

M4: Metric thread with nominal 4 mm diameter; pitch and fastener length still need specification.

M6: Metric thread with nominal 6 mm diameter; pitch and fastener length still need specification.

MEP: Mechanical, electrical and plumbing building services.

MPa: Megapascal, one million pascals.

N: Newton, the force accelerating one kilogram by one metre per second squared.

NHTSA: National Highway Traffic Safety Administration, the United States roadvehicle safety agency.

PET: Polyethylene terephthalate, the plastic of many drink bottles.

PVA: Polyvinyl acetate, the polymer in the specified white card or wood adhesive.

PVC: Polyvinyl chloride, a plastic used here only where its service conditions permit.

Pa: Pascal, one newton per square metre.

RC: Reinforced concrete.

ROV: Remotely operated vehicle; underwater versions typically use a tether for control or recovery.

RSP: RSP Architects Planners & Engineers, the company named in the cited project credits.

S235: A European structuralsteel grade designation; verify the complete product standard and certificate.

S235JR: A structuralsteel grade designation; require the applicable product standard and supplier certificate before claiming compliance.

S275: A European structuralsteel grade designation; verify the complete product standard and certificate.

S355: A European structuralsteel grade designation; verify the complete product standard and certificate.

SLS: Serviceability limit state, a defined check such as deflection or vibration.

TEG: Thermoelectric generator, a device converting part of heat flow into electrical energy.

TIN: Tire Identification Number, the manufacturer and production identification on the sidewall.

TPMS: Tyre Pressure Monitoring System.

ULS: Ultimate limit state, a defined structural safety check.

USB: Universal Serial Bus; here the complete lowvoltage power connection supplied with the fan.

ON THIS PAGE

LED Light-emitting diode · **mm** millimetre, 0.001 metre · **NHTSA** National Highway Traffic Safety Administration, the United States road-vehicle safety agency · **PET** Polyethylene terephthalate, a plastic used here as a room-temperature transparent overlay · **ROV** Remotely operated vehicle; underwater versions typically use a tether for control or recovery · **USB** Universal Serial Bus, the wired interface used for data and device power

UTQG: Uniform Tire Quality Grading, a United States tyre comparison system.

UV: Ultraviolet radiation.

V: Volt in an electrical measurement; in tyre code 87V, V is the speedcategory letter instead.

W: Watt, one joule per second.

WL: Wind load.

Wh: Watthour, an energy unit.

XL: Extra Load, a tyre loadcapacity designation.

ft: Foot or feet; one foot is 0.3048 metre.

g: Gram, one thousandth of a kilogram.

kN: Kilonewton, one thousand newtons.

kPa: Kilopascal, one thousand pascals.

kW: Kilowatt, one thousand watts.

kg: Kilogram, the unit of mass.

ksi: Thousand poundsforce per square inch.

m: Metre, the unit of length.

mV: Millivolt, one thousandth of a volt.

mm^2: Square millimetre, a unit of area.

m^2: Square metre, a unit of area.

m^3: Cubic metre, equal to 1,000 litres.

psf: Poundsforce per square foot, a load per area.

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BOOK IV / 92BP / 29

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Definitions refer to their use in this reader.

3D: Threedimensional.

A: Ampere in an electrical rating; a drawing view letter is only a label.

psi: Poundsforce per square inch, a pressure unit.

rpm: Revolutions per minute, a rotation rate.

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UV Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light · **V** volt, electrical potential difference · **mm^2** square millimetre · **m^2** square metre, an area unit · **m^3** cubic metre, a volume unit

Sources, image credits and reading notes

ARPRICE · Selplast: 30 cm Ibico ruler

7 November 2026 inherited anchor: ARS 2,784.

BURNER · Science History Institute: Bunsen burner

Catalogue credits Peter Desaga and discusses 1854.

https://digital.sciencehistory.org/works/5138jd91b

DESAGA · Peter Desaga, Polytechnisches Journal, 1857

Primary historical discussion refers to the May 1855 price list.

https://dingler.bbaw.de/articles/ar143082.html

EUPRICE · Casa Piera: 30 cm Ami ruler

7 November 2026 inherited anchor: EUR 5.88 with value-added tax.

FAN · Adafruit 6099: guarded USB fan

USD 4.95; 50 x 50 x 11 mm; 5 V, 0.2 A; two guards and four screw/nut sets.

https://www.adafruit.com/product/6099

GAS_AR · ENARGAS: safe domestic gas use

Gas installation and repair require a registered gas installer.

https://www.enargas.gov.ar/secciones/conectate-con-la-energia/uso-seguro-del-gas/uso-seguro-del-gas.php

KING · Science Museum Group: Alfred King gas cooker, 1859

Object 1959-152; iron and brass, Liverpool, for 148 Piccadilly, London. Removable side panel catalogued separately.

https://collection.sciencemuseumgroup.org.uk/objects/co48615

STEEL_AR · Materiales Aldana: steel tubing

Checked 7 November 2026: 20 x 20 x 1.6 mm, 6 m, ARS 17,950; 30 x 30 x 1.6 mm, 6 m, ARS 27,750. Confirm grade, tax and freight.

https://www.materialesaldanasrl.com.ar/tubos-estructurales

STEEL_EU · Leroy Merlin Spain / Comment Fer: steel tube

EUR 5.90 for 1 m, 20 x 20 x 2 mm. Wall differs from Argentine 1.6 mm listing; confirm final delivered price.

https://www.leroymerlin.es/productos/tubo-cuadrado-acero-20x20-mm-ep-2-mm-longitud-1-metro-88105949.html

USPRICE · Volition: Pittsburgh 66199 ruler

7 November 2026 opened anchor: USD 1.99; search price differed.

ON THIS PAGE

cm centimetre, 0.01 metre · **ARS** Argentine peso · **EUR** Euro · **USB** Universal Serial Bus, the wired interface used for data and device power · **USD** United States dollar · **mm** millimetre, 0.001 metre · **V** volt, electrical potential difference · **ENARGAS** Ente Nacional Regulador del Gas · **m** metre, a length unit

READER PAGE 30 / 30 FULL BOOK / PAGE 3722 / 4232

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BOOK IV / 92BP / 30

Sources checked 2026-11-07. Interpretations and workshop examples are identified in the readings.

ARPRICE · Selplast: 30 cm Ibico ruler

7 November 2026 inherited anchor: ARS 2,784.

https://www.selplast.com.ar/productos/regla-metal-acero-30-cm-ibico-770100-cr-46237/

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https://casapiera.com/es/accesorios/8346-regla-metalica-ami.html

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STEEL_AR · Materiales Aldana: steel tubing

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https://www.materialesaldanasrl.com.ar/tubos-estructurales

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https://www.leroymerlin.es/productos/tubo-cuadrado-acero-20x20-mm-ep-2-mm-longitud-1-metro-88105949.html

USPRICE · Volition: Pittsburgh 66199 ruler

7 November 2026 opened anchor: USD 1.99; search price differed.

https://www.govolition.com/product/V124-66199

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Definitions refer to their use in this reader.

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A: Ampere in an electrical rating; a drawing view letter is only a label.

AC: Alternating current.

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AISI: American Iron and Steel Institute; often part of a steel grade designation.

ANSYS: A proprietary engineeringanalysis software name. A picture of its model does not verify the inputs or results.

ARS: Argentine peso.

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BIG: Bjarke Ingels Group, the architectural practice.

BIM: Building information modelling: a coordinated digital representation of a building and its information.

BOM: Bill of materials, the counted purchase and cut list.

BY: Attribution required under the stated Creative Commons licence.

ON THIS PAGE

ARS Argentine peso · **mm** millimetre, 0.001 metre · **m** metre, a length unit · **EUR** Euro · **USD** United States dollar · **AISI** American Iron and Steel Institute; often part of a steel grade designation · **ASTM** ASTM International, a standards organisation; a standard number is part of a material specification, not proof that a supplied part complies · **BY** Attribution condition in a Creative Commons licence

CAD: Computeraided design, the drawing or modelling process.

CC: Creative Commons, the licence system named in a source credit.

CIP: Castinplace, usually describing concrete placed in its final position.

CO: Carbon monoxide, a toxic combustion gas.

CO2: Carbon dioxide.

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DOF: Degree of freedom, an independent possible motion or displacement.

DOT: Department of Transportation, used in the United States tyre identification marking.

EN: European Standard, followed by the particular standard number.

ENARGAS: Ente Nacional Regulador del Gas, Argentina's gas regulator named in the cited guidance.

EU: European Union.

EUR: Euro.

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HDPE: Highdensity polyethylene, a tough plastic used for certain frames, bins and cutting surfaces.

HSS: Hollow structural section.

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INTA: Instituto Nacional de Tecnología Agropecuaria, Argentina's National Institute of Agricultural Technology.

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LL: Live load, the imposed variable load assumed in a structural load case.

M4: Metric thread with nominal 4 mm diameter; pitch and fastener length still need specification.

M6: Metric thread with nominal 6 mm diameter; pitch and fastener length still need specification.

MEP: Mechanical, electrical and plumbing building services.

MPa: Megapascal, one million pascals.

N: Newton, the force accelerating one kilogram by one metre per second squared.

NC: NonCommercial, restricting use under the stated licence to noncommercial purposes.

ND: NoDerivatives, restricting distribution of adapted material under the stated licence.

NHTSA: National Highway Traffic Safety Administration, the United States roadvehicle safety agency.

ON THIS PAGE

CAD Computer-aided design · **CIP** Cast-in-place concrete · **HDPE** High-density polyethylene · **LED** Light-emitting diode · **mm** millimetre, 0.001 metre · **NC** NonCommercial, a licence restriction · **ND** NoDerivatives, a licence restriction · **NHTSA** National Highway Traffic Safety Administration, the United States road-vehicle safety agency

PDF: Portable Document Format, the fixedlayout reading format.

PET: Polyethylene terephthalate, the plastic of many drink bottles.

PVA: Polyvinyl acetate, the polymer in the specified white card or wood adhesive.

PVC: Polyvinyl chloride, a plastic used here only where its service conditions permit.

Pa: Pascal, one newton per square metre.

RC: Reinforced concrete.

ROV: Remotely operated vehicle; underwater versions typically use a tether for control or recovery.

RSP: RSP Architects Planners & Engineers, the company named in the cited project credits.

S235: A European structuralsteel grade designation; verify the complete product standard and certificate.

S235JR: A structuralsteel grade designation; require the applicable product standard and supplier certificate before claiming compliance.

S275: A European structuralsteel grade designation; verify the complete product standard and certificate.

S355: A European structuralsteel grade designation; verify the complete product standard and certificate.

SA: ShareAlike, requiring qualifying adaptations to use the same or a compatible licence.

SLS: Serviceability limit state, a defined check such as deflection or vibration.

SVG: Scalable Vector Graphics, the editable vectordrawing format.

TEG: Thermoelectric generator, a device converting part of heat flow into electrical energy.

TIN: Tire Identification Number, the manufacturer and production identification on the sidewall.

TPMS: Tyre Pressure Monitoring System.

ULS: Ultimate limit state, a defined structural safety check.

US: United States.

USB: Universal Serial Bus; here the complete lowvoltage power connection supplied with the fan.

USD: United States dollar.

UTQG: Uniform Tire Quality Grading, a United States tyre comparison system.

UV: Ultraviolet radiation.

V: Volt in an electrical measurement; in tyre code 87V, V is the speedcategory letter instead.

VAT: Valueadded tax.

W: Watt, one joule per second.

WL: Wind load.

Wh: Watthour, an energy unit.

ON THIS PAGE

PET Polyethylene terephthalate, a plastic used here as a room-temperature transparent overlay · **ROV** Remotely operated vehicle; underwater versions typically use a tether for control or recovery · **SA** ShareAlike, a licence condition for adaptations · **USB** Universal Serial Bus, the wired interface used for data and device power · **UV** Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light · **V** volt, electrical potential difference · **VAT** Value-added tax

XL: Extra Load, a tyre loadcapacity designation.

cm: Centimetre, one hundredth of a metre.

ft: Foot or feet; one foot is 0.3048 metre.

g: Gram, one thousandth of a kilogram.

kN: Kilonewton, one thousand newtons.

kPa: Kilopascal, one thousand pascals.

kW: Kilowatt, one thousand watts.

kg: Kilogram, the unit of mass.

ksi: Thousand poundsforce per square inch.

m: Metre, the unit of length.

mL: Millilitre, one thousandth of a litre.

mV: Millivolt, one thousandth of a volt.

mm: Millimetre, one thousandth of a metre.

mm^2: Square millimetre, a unit of area.

m^2: Square metre, a unit of area.

m^3: Cubic metre, equal to 1,000 litres.

psf: Poundsforce per square foot, a load per area.

psi: Poundsforce per square inch, a pressure unit.

rpm: Revolutions per minute, a rotation rate.

Sources, image credits and reading notes

HUERTA · INTA: garden, poultry and appropriate tools

Instituto Nacional de Tecnología Agropecuaria. Argentine starting references for crops and workshop tools.

https://www.argentina.gob.ar/inta/servicio-de-atencion-ciudadana/huertas

HYDRO · National Center for Appropriate Technology: micro-hydro design

Flow, head, losses and site restrictions.

https://attra.ncat.org/wp-content/uploads/2022/06/microhydrodesign.pdf

MAGLEV · Science Museum Group: magnetic river demonstration

Eric Laithwaite, Imperial College, 1968-1972.

https://collection.sciencemuseumgroup.org.uk/objects/co522232/magnetic-river-demonstration

MILLS · National Park Service: origins of hydroelectric power

Waterwheels, Lowell canals and shaft power.

ON THIS PAGE

mm^2 square millimetre · **m^2** square metre, an area unit · **m^3** cubic metre, a volume unit · **INTA** Instituto Nacional de Tecnología Agropecuaria

https://www.nps.gov/articles/5-the-origins-of-hydroelectric-power.htm

ROAD · Federal Highway Administration: pavement maintenance

Includes pothole repair manuals. A model does not diagnose a road base.

https://www.fhwa.dot.gov/maintenance/pavement.cfm

ROTOR · American Society of Mechanical Engineers: Sikorsky VS-300

First flight 14 September 1939. History, not a rotor construction specification.

https://www.asme.org/about-asme/engineering-history/landmarks/95-sikorsky-vs-300-helicopter

BOOK IV / 92BQ / 51

DRILL · Science Museum Group: model of Tull's seed drill

A museum model is distinct from an original working machine.

https://collection.sciencemuseumgroup.org.uk/objects/co39077/1-4-scale-model-of-jethro-tulls-seed-drill

POULTRY · National Agricultural Library: Poultry House Construction, 1918

Alfred R. Lee, Farmers' Bulletin 574. Historical housing context.

https://www.nal.usda.gov/exhibits/ipd/frostonchickens/items/show/94

SEEDLAB · Iowa State University: standard germination test

Minimum 400 seeds in the stated standard testing context.

https://seedlab.iastate.edu/project/standard-germination-test

SEEDS · University of Maine: small-grain germination

Steven B. Johnson, Bulletin 1013. Eight replicates of fifty in the described official test context.

https://extension.umaine.edu/publications/1013e/

SLOPE · United States Geological Survey: landslide monitoring

Rain, water content, pore-water pressure and movement are distinct observations.

https://www.usgs.gov/programs/landslide-hazards/science/real-time-monitoring-potential-landslides

BOOK IV / 92BR / 50

READER PAGE 50 / 50 FULL BOOK / PAGE 3823 / 4232

Sources checked 2026-11-07. Interpretations and workshop examples are identified in the readings.

ARPRICE · Selplast: 30 cm Ibico ruler

7 November 2026 inherited anchor: ARS 2,784.

https://www.selplast.com.ar/productos/regla-metal-acero-30-cm-ibico-770100-cr-46237/

DRILL · Science Museum Group: model of Tull's seed drill

A museum model is distinct from an original working machine.

ON THIS PAGE

cm centimetre, 0.01 metre · **ARS** Argentine peso

https://collection.sciencemuseumgroup.org.uk/objects/co39077/1-4-scale-model-of-jethro-tulls-seed-drill

EUPRICE · Casa Piera: 30 cm Ami ruler

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https://casapiera.com/es/accesorios/8346-regla-metalica-ami.html

FAN · Adafruit 6099: guarded USB fan

USD 4.95; 50 x 50 x 11 mm; 5 V, 0.2 A; two guards and four screw/nut sets.

https://www.adafruit.com/product/6099

HUERTA · INTA: garden, poultry and appropriate tools

Instituto Nacional de Tecnología Agropecuaria. Argentine starting references for crops and workshop tools.

https://www.argentina.gob.ar/inta/servicio-de-atencion-ciudadana/huertas

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https://www.usgs.gov/programs/landslide-hazards/science/real-time-monitoring-potential-landslides

STEEL_AR · Materiales Aldana: steel tubing

Checked 7 November 2026: 20 x 20 x 1.6 mm, 6 m, ARS 17,950; 30 x 30 x 1.6 mm, 6 m, ARS 27,750. Confirm grade, tax and freight.

https://www.materialesaldanasrl.com.ar/tubos-estructurales

STEEL_EU · Leroy Merlin Spain / Comment Fer: steel tube

EUR 5.90 for 1 m, 20 x 20 x 2 mm. Wall differs from Argentine 1.6 mm listing; confirm final delivered price.

https://www.leroymerlin.es/productos/tubo-cuadrado-acero-20x20-mm-ep-2-mm-longitud-1-metro-88105949.html

USPRICE · Volition: Pittsburgh 66199 ruler

ON THIS PAGE

cm centimetre, 0.01 metre · **EUR** Euro · **USB** Universal Serial Bus, the wired interface used for data and device power · **USD** United States dollar · **mm** millimetre, 0.001 metre · **V** volt, electrical potential difference · **INTA** Instituto Nacional de Tecnología Agropecuaria · **ARS** Argentine peso · **m** metre, a length unit

7 November 2026 opened anchor: USD 1.99; search price differed.

https://www.govolition.com/product/V124-66199

New diagrams are explanatory drawings with stated dimensions or assumptions. Historical images and supplied originals keep their own credits. The supplied archive mark does not replace the underlying creator's credit. The workshop examples are documented designs and calculations; they have not been physically built and tested for this edition.

Sources, image credits and reading notes

MODULE · Adafruit 1330: thermoelectric module

Cooling supply ratings are not generating output. Budget uses an allowance.

https://www.adafruit.com/product/1330

NASA_TEG · NASA: Seebeck effect

Heat source and electrical conversion are separate. No radioactive material is used in the lesson.

https://science.nasa.gov/resource/how-does-a-radioisotope-thermoelectric-generator-rtg-work-the-seebeck-effect/

ROV · NOAA: submersibles and remotely operated vehicles

National Oceanic and Atmospheric Administration. Occupied and remotely operated vehicles differ.

https://oceanexplorer.noaa.gov/technology/subs-rovs/

ROV_PRICE · Blue Robotics: BlueROV2

Listing starts at USD 4,900. Configuration, battery, controller, tether, freight and import charges require separate checks.

https://bluerobotics.com/store/rov/bluerov2/

SOIL · Rothamsted e-RA: soil chemical properties

Long-term records require a defined plot, sample and analytical method.

https://www.era.rothamsted.ac.uk/info/rbk1/soilchem

TEG · University of Utah: thermoelectric human power

Temperature difference, thermoelectric module and meter.

https://www.che.utah.edu/teaching_module/thermoelectric-human-power/

BOOK IV / 92BS / 50

AQUA_AR · INTA Valle Inferior: carp and Morado INTA garlic in an aquaponic module

Institutional report, 9 December 2024. A specific experiment, not a universal stocking recipe.

https://www.argentina.gob.ar/noticias/sistema-combinado-de-acuaponia-para-integrar-la-produccion-de-peces-y-vegetales-0

ON THIS PAGE

USD United States dollar · **NASA** National Aeronautics and Space Administration · **ROV** Remotely operated vehicle; underwater versions typically use a tether for control or recovery · **NOAA** National Oceanic and Atmospheric Administration · **TEG** Thermoelectric generator, a device converting part of heat flow into electrical energy · **INTA** Instituto Nacional de Tecnología Agropecuaria

AQUA_LAYOUT · Clemson University: aquaponics system layout and components

Mechanical filtration, biofiltration and oxygen are distinct functions.

https://lgpress.clemson.edu/publication/aquaponics-system-layout-and-components/

AQUA_US · Oklahoma State University: nitrification and maintenance in media-bed aquaponics

Biological conversion, water-quality measurements and maintenance.

https://extension.okstate.edu/fact-sheets/nitrification-and-maintenance-in-media-bed-aquaponics

BIG · BIG: CopenHill project

Architectural project reference.

https://js.big.dk/projects/copenhill-2391

COMPOST_AR · Argentina: household composting manual

Aerobic composting, distinct from fuel-gas production.

https://www.argentina.gob.ar/sites/default/files/2021/12/anexo_22._manual_de_compost_domiciliario_opds.pdf

COMPOST_US · Environmental Protection Agency: composting at home

Feedstocks, air and moisture. No pathogen-kill claim is made here.

https://www.epa.gov/recycle/composting-home

COPEN · CopenHill: opening and visitor information

Operator records the official opening on 4 October 2019.

https://www.copenhill.dk/en/kontakt/faqs

DIGEST · Environmental Protection Agency: anaerobic digestion

Biogas is a separate controlled process.

https://www.epa.gov/agstar/how-does-anaerobic-digestion-work

ICA · Diller Scofidio + Renfro: Institute of Contemporary Art, Boston

Architectural project account; separates the building design from unverified authorship of supplied analytical sheets.

https://dsrny.com/project/institute-of-contemporary-art

JEWEL · Safdie Architects: Jewel Changi Airport

Project, 2019, and collaborators.

https://www.safdiearchitects.com/projects/jewel-changi-airport

MARINA · Safdie Architects: Marina Bay Sands

Project record and design-team credits. Catalogue date is 2011, distinct from operating milestones.

https://www.safdiearchitects.com/projects/marina-bay-sands-integrated-resort

ON THIS PAGE

BIG Bjarke Ingels Group, the architectural practice

RENOVATE_EU · European Commission: energy renovation of buildings

Building fabric, windows, efficient services and shading in renovation.

https://energy.ec.europa.eu/topics/energy-efficiency/energy-performance-buildings/energy-performance-buildings-directive/energy-renovation-buildings_en

SOLAR_SOUTH · New Zealand Ministry for the Environment: passive solar design guidance

Southern-hemisphere solar orientation and site shading.

https://environment.govt.nz/publications/passive-solar-design-guidance/3-guidance-on-passive-solar-design/

SOLAR_US · United States Department of Energy: Guide to Passive Solar Home Design

Northern-hemisphere design guidance; solar orientation must be interpreted for the actual site.

https://www.energy.gov/sites/prod/files/guide_to_passive_solar_home_design.pdf

VACUUM · Science Museum Group: early vacuum cleaner

Historical suction, filtration and service access.

https://collection.sciencemuseumgroup.org.uk/objects/co48604/original-vacuum-cleaner-from-to-royal-naval-college

BOOK IV / 92BT / 115

READER PAGE 115 / 115 FULL BOOK / PAGE 3988 / 4232

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BIG · BIG: CopenHill project

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **cm** centimetre, 0.01 metre · **ARS** Argentine peso · **BIG** Bjarke Ingels Group, the architectural practice

Architectural project reference.

https://js.big.dk/projects/copenhill-2391

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Project record and design-team credits. Catalogue date is 2011, distinct from operating milestones.

https://www.safdiearchitects.com/projects/marina-bay-sands-integrated-resort

RENOVATE_EU · European Commission: energy renovation of buildings

Building fabric, windows, efficient services and shading in renovation.

https://energy.ec.europa.eu/topics/energy-efficiency/energy-performance-buildings/energy-performance-buildings-directive/energy-renovation-buildings_en

SOLAR_SOUTH · New Zealand Ministry for the Environment: passive solar design guidance

Southern-hemisphere solar orientation and site shading.

https://environment.govt.nz/publications/passive-solar-design-guidance/3-guidance-on-passive-solar-design/

SOLAR_US · United States Department of Energy: Guide to Passive Solar Home Design

Northern-hemisphere design guidance; solar orientation must be interpreted for the actual site.

https://www.energy.gov/sites/prod/files/guide_to_passive_solar_home_design.pdf

STEEL_AR · Materiales Aldana: steel tubing

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https://www.materialesaldanasrl.com.ar/tubos-estructurales

STEEL_EU · Leroy Merlin Spain / Comment Fer: steel tube

EUR 5.90 for 1 m, 20 x 20 x 2 mm. Wall differs from Argentine 1.6 mm listing; confirm final delivered price.

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USPRICE · Volition: Pittsburgh 66199 ruler

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https://www.govolition.com/product/V124-66199

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ON THIS PAGE

ARS Argentine peso · **mm** millimetre, 0.001 metre · **m** metre, a length unit · **EUR** Euro · **USD** United States dollar

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Words, symbols and acronyms

Terms used across these seven readers. Metric thread codes name a nominal diameter; pitch, fit and material still matter.

08B: Europeanseries rollerchain designation with 12.7 mm pitch; a suffix identifies strand count.

6061: An aluminium alloy designation, not a complete material specification without temper and product form.

ANMAT: Administración Nacional de Medicamentos, Alimentos y Tecnología Médica, Argentina’s regulator for medicines, food and medical technology.

ARS: Argentine peso; local price currency.

BCE: Before Common Era, a historical date notation.

BOM: Bill of materials, a counted list of parts and purchased items.

CAA: Código Alimentario Argentino, the Argentine Food Code.

CAD: Computeraided design; drawing or modelling with computer software.

CC0: Creative Commons Zero, a publicdomain dedication tool.

CE: Common Era, a historical date notation.

CNC: Computer numerical control; machine motion directed by a program.

DIN: Deutsches Institut für Normung, the German Institute for Standardization.

EU: European Union.

EUR: Euro; the currency used for the Spain price example.

HTML: HyperText Markup Language, the browser reader format.

ID: Inside diameter, measured across the bore.

IGN: Instituto Geográfico Nacional, Argentina’s National Geographic Institute.

INTI: Instituto Nacional de Tecnología Industrial, Argentina’s National Institute of Industrial Technology.

ISO: International Organization for Standardization; ISO is its internationally used short name.

M10: Metric screw thread with nominal 10 mm major diameter.

M12: Metric screw thread with nominal 12 mm major diameter.

M14: Metric screw thread with nominal 14 mm major diameter.

ON THIS PAGE

mm millimetre, 0.001 metre · **BCE** Before the Common Era · **BOM** Bill of materials, the counted purchase and cut list · **CAD** Computer-aided design · **CC0** Creative Commons Zero, a public-domain dedication tool · **CE** Common Era, historical year notation · **CNC** Computer numerical control; machine motion directed by a program · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **ISO** International Organization for Standardization; ISO is its internationally used short name

M6: Metric screw thread with nominal 6 mm major diameter; pitch and fit must also be specified.

M8: Metric screw thread with nominal 8 mm major diameter.

N: Newton, the unit of force.

NASA: National Aeronautics and Space Administration, United States.

NIST: National Institute of Standards and Technology, United States.

N·m: Newton metre, the unit of torque or turning moment.

OD: Outside diameter, measured across the outer surface.

PDF: Portable Document Format, the fixedlayout reading file.

POSGAR: Posiciones Geodésicas Argentinas, the Argentine geodetic reference framework.

SI: Système international d'unités, the International System of Units. In the SKF product name SI 10 C, SI is a catalogue code, not the units system.

SKF: Svenska Kullagerfabriken, the Swedish bearing company; a manufacturer name in sheet 049.

SVG: Scalable Vector Graphics, an editable drawing that remains sharp when enlarged.

US: United States.

USD: United States dollar; local price currency.

cm: Centimetre, one hundredth of a metre.

g: Gram, one thousandth of a kilogram.

kg: Kilogram, the unit of mass.

m: Metre, the unit of length.

mL: Millilitre, one thousandth of a litre.

mm: Millimetre, one thousandth of a metre.

rpm: Revolutions per minute, a rotation rate.

Sources and consolidated image credits

Source checks dated 2026-11-07. The following register keeps the supplied archive identity and the underlying collection credits distinct.

z027 / A pedal vehicle in three views. User-supplied ZeusC archive, sheet 027. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z028 / The frame beneath a three-wheeled kart. User-supplied ZeusC archive, sheet 028. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z029 / Two diagonals tell a frame's story. User-supplied ZeusC archive, sheet 029. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

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ON THIS PAGE
mm millimetre, 0.001 metre · **SKF** Svenska Kullagerfabriken, the historical Swedish bearing-company name

Argentina: Instituto Nacional de Tecnología Industrial, institutional history

Founded 27 December 1957; national measurement standards and industrial traceability. Not a claim about exclusive powers.

https://www.argentina.gob.ar/inti/conoces-el-inti

Library of Congress: bicycles and cycling, digital collections

The Wright bicycle business supported their aeronautical work. No inference that a modern drawing is a Wright desig

https://guides.loc.gov/bicycles-cycling-history/digital

Science Museum Group: Rover safety bicycle, 1885

Historical text reference only. Museum photographs were not added because their stated noncommercial licence is un automatic clearance for a sales edition.

https://collection.sciencemuseumgroup.org.uk/objects/co25833/rover-safety-bicycle-1885

Selplast: Ibico 30 cm steel ruler

Dated listing anchor. Project material prices are separate planning allowances.

https://www.selplast.com.ar/productos/regla-metal-acero-30-cm-ibico-770100-cr-46237/

Volition: Pittsburgh 66199 ruler

Supplier listing anchor, not a delivery quotation.

https://www.govolition.com/product/V124-66199

Casa Piera, Spain: Ami metal ruler

Spanish listing is one EU example, not a price throughout the European Union.

https://casapiera.com/es/accesorios/8346-regla-metalica-ami.html

dunlop / Early pneumatic-tyre reference photograph. Unknown photographer. Supplied through the linked Wikimedia Com cited image source is Sportmotor. The source catalogue applies the Public Domain Mark. Its United States status field is inc additional rights determination is made here.

forge_defrance / The Forge. Léonard Defrance. The Metropolitan Museum of Art, 71.93. Purchase, 1871 Public Domain. The

carpenter_photo / [Carpenter with Ladder, Hammer, Level, and Toolbox]. Unknown. The Metropolitan Museum of Art, 2015 Herbert Mitchell, 2008 Public Domain. The Met Open Access.

z027 / A pedal vehicle in three views. User-supplied ZeusC archive, sheet 027. Original mark preserved. User-supplied refere not establish the underlying designer, publisher or licence.

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cm centimetre, 0.01 metre

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Front Contents Previous Full

Source checks dated 2026-11-07. The following register keeps the supplied archive identity and the underlying collection credits distinct.

z027 / A pedal vehicle in three views. User-supplied ZeusC archive, sheet 027. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z028 / The frame beneath a three-wheeled kart. User-supplied ZeusC archive, sheet 028. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z029 / Two diagonals tell a frame's story. User-supplied ZeusC archive, sheet 029. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

Sources and consolidated image credits

Renold: Chain standards

08B identifies a 12.7 mm pitch family. DIN 8187 alone does not identify one pitch.

https://www.renold.com/support/chain-info-index/chain-standards/

Renold: chain identification catalogue

Product family dimensions must be matched as a set; tensile strength is not allowable operating load.

https://chainid.renold.com/

SKF: Spherical plain bearings and rod ends

SI 10 C table lists M10 thread. The supplied steering assembly has a conflicting M12 label; obtain the manufacturer drawing for the purchased part.

https://www.skf.com/binaries/pub12/Images/0901d19680154a05-06116_1-EN_tcm_12-122020.pdf

dunlop / Early pneumatic-tyre reference photograph. Unknown photographer. Supplied through the linked Wikimedia Commons catalogue; its cited image source is Sportmotor. The source catalogue applies the Public Domain Mark. Its United States status field is incomplete; no additional rights determination is made here.

carpenter_photo / [Carpenter with Ladder, Hammer, Level, and Toolbox]. Unknown. The Metropolitan Museum of Art, 2015.400.181. Bequest of Herbert Mitchell, 2008 Public Domain. The Met Open Access.

z044 / Twenty teeth on the smaller chainwheel. User-supplied ZeusC archive, sheet 044. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

ON THIS PAGE

DIN Deutsches Institut für Normung, the German Institute for Standardization · **mm** millimetre, 0.001 metre · **SKF** Svenska Kullagerfabriken, the historical Swedish bearing-company name · **SI** Système international d'unités, the International System of Units

z045 / Thirty-two teeth on the larger chainwheel. User-supplied ZeusC archive, sheet 045. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z046 / How the rider steers by hand. User-supplied ZeusC archive, sheet 046. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z047 / A wheel’s nominal size and its actual travel. User-supplied ZeusC archive, sheet 047. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z048 / Following the left front axle. User-supplied ZeusC archive, sheet 048. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z049 / What the steering links do in a turn. User-supplied ZeusC archive, sheet 049. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z050 / Adjusting the length of a threaded link. User-supplied ZeusC archive, sheet 050. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z051 / The right axle completes the steering pair. User-supplied ZeusC archive, sheet 051. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

Front Contents Previous Full book lesson

BOOK IV / 92BX / 30

Sources and consolidated image credits

Argentina: safe food-handling manual, 2025

Cleaning and disinfection are different operations. Follow the actual product label and local food-business requirements.

https://www.argentina.gob.ar/sites/default/files/anmat_manual_ma_2025.pdf

NIST: Metric Kitchen, measurement equivalencies

Recipe convention uses 5 mL teaspoon and 15 mL tablespoon; not every household spoon has these capacities.

https://www.nist.gov/pml/owm/metric-si/metric-kitchen/metric-kitchen-cooking-measurement-equivalencies

NIST: approximate United States customary conversions

Customary teaspoon approximately 4.93 mL and tablespoon 14.79 mL; distinguish these from rounded recipe conventions.

https://www.nist.gov/pml/owm/metric-si/unit-conversion/approximate-conversions-us-customary-measures-metric

European Union: Regulation 1935/2004 on food-contact materials

Framework requirements do not make an unidentified salvaged material suitable for food contact.

ON THIS PAGE

NIST National Institute of Standards and Technology · **mL** millilitre, 0.001 litre

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32004R1935

Argentina: Código Alimentario Argentino

Chapter IV concerns food-contact utensils, containers and related articles; consult current consolidated text for a product placed on the market.

https://www.argentina.gob.ar/anmat/codigoalimentario

kitchen_sorgh / A Kitchen. Hendrick Sorgh. The Metropolitan Museum of Art, 89.15.7. Marquand Collection, Gift of Henry G. Marquand, 1889 Public Domain. The Met Open Access.

spoon_roman / Spoon. Roman or Byzantine. The Metropolitan Museum of Art, 55.135.10. Bequest of Ada Small Moore, 1955 Public Domain. The Met Open Access.

kitchen_japan / Kitchen Scene. Kitagawa Utamaro. The Metropolitan Museum of Art, JP1369a, b. Rogers Fund, 1922 Public Domain. The Met Open Access.

z160 / Kitchen Implements · Shape, Task and Care. User-supplied ZeusC archive, sheet 160. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z163 / Kitchen Knives · Blade Form and Intended Task. User-supplied ZeusC archive, sheet 163. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z165 / Kitchen Spoons · Capacity Must Be Measured. User-supplied ZeusC archive, sheet 165. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

z161 / Preparation and Sharpening Tools for the Kitchen. User-supplied ZeusC archive, sheet 161. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

Front Contents Previous Full book lesson

z161 / Preparation and Sharpening Tools for the Kitchen. User-supplied ZeusC archive, sheet 161. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

BOOK IV / 92BZ / 28

READER PAGE 28 / 28

z161 / Preparation and Sharpening Tools for the Kitchen. User-supplied ZeusC archive, sheet 161. Original mark preserved. User-supplied reference. The mark does not establish the underlying designer, publisher or licence.

About the author

His childhood ambition was to learn everything in the galaxy. That ambition has become a continuing inquiry into the connections between an idea, its history and its material consequences. A shelter needs a plan and a repair route. A measurement needs a reference. An inherited claim needs a source. A community needs knowledge that can be shared beyond one person’s memory.

ON THIS PAGE

= equals

A Billionaire Guide Book to Rebuilding Civilization From Scratch brings those questions into one illustrated reference. It follows shelter, water, food, infrastructure, tools, plants, health, household continuity, historical thought and the body. The book combines original supplied artwork, historical collection images, new explanatory diagrams, counted models and editable workshop records.

Verbelen's interest in esoteric traditions is part of the book's curiosity, alongside a clear distinction between documented history, symbolic interpretation and tested physical evidence. He invites readers to annotate the work, compare sources and leave corrections that make the next edition more useful.

Authorsupplied engraved portrait. The author's original photograph is preserved with the source gallery.

The Beginning

When I was a child, I made myself a promise: I wanted to learn everything there was in the galaxy. I began with our Terra, the world beneath my feet, and imagined travelling outward until I reached the farthest star. I wanted to understand the small things as deeply as the immense ones: a seed opening, a stone taking shape, a roof holding against the weather, a light crossing the dark.

At night I told myself stories. In my mind I crossed distances that no lifetime could contain. I travelled beyond my own time, building worlds from questions and returning with more questions than I had taken. The farther I went, the larger the unknown became. Every answer opened a door into another room.

I could never hold all consciousness, all history or all civilisation in one thought. Yet the impossibility did not extinguish the desire. It gave it direction. I began to see that learning everything might not mean possessing every answer. It might mean refusing to lose the habit of asking, and learning how to leave a reliable path for the next person.

This book grows from that childhood promise. Its pages move between the sky and the workbench, between the story of an idea and the materials needed to give it form. A drawing of a house, a record of a measurement and a question about the heavens belong to the same journey when each teaches us to look more carefully.

The Quest

I wanted to follow knowledge from its first surviving traces into the present: from the hand that shaped a tool to the workshop that reproduced it, from an observation beside a fire to the instruments that changed how people understood matter and life. I wanted to find what remained useful, what had been misunderstood and what still waited to be tested.

The quest did not end when I found an explanation. It became more demanding. Who first recorded it? What did they actually observe? Which materials were available to them? What was added by later storytellers? Could another person repeat the work, repair the object or recognise the point at which the explanation failed?

Argentina is the first ground beneath this book. From there the route continues through the United States, Europe and the wider world. This is a route of attention, not a ranking of peoples. A technique has a place: a climate, a cost, a supply of materials, a language and a community that keeps it alive. The same purpose may require different work in different places.

The era of knowing is not an era in which uncertainty disappears. It is an era in which we learn to carry uncertainty honestly. We name what we know, show how we know it and preserve the questions that remain. Knowledge becomes a shared inheritance when it can survive beyond the person who first understood it.

The Insight

Ask a historian what defines humanity's greatest invention. Fire, the wheel, the sword, the written word? My answer is a provocation rather than a verdict: history itself. Not the past, which has already happened, but the human work of selecting, preserving and arranging what later generations are able to see.

A record is made by someone, kept by someone and interpreted by someone. A ruler's monument, a worker's account, a traveller's sketch and a defeated community's memory may describe the same event from different positions. Under a skilful pen, a villain can be remembered as a hero. Under another, a person's courage can disappear behind the interests of the storyteller.

That does not make every account equally true. Evidence still resists us. Dates can contradict a legend. Materials can expose an anachronism. A surviving notebook can reveal a contribution that a later summary omitted. The answer to a manipulated story is patient comparison: seek the witness, inspect the object, read the disagreement and notice whose voice is absent.

I want the reader of this book to inherit that freedom of attention. Admire an invention without surrendering judgment to its inventor. Explore an esoteric tradition without mistaking symbolism for a measured physical result. Respect a beautiful image while asking where it came from. The story should awaken curiosity, and the record should give curiosity somewhere solid to stand.

If these pages have a final purpose, it is this: leave the next person more capable. Give them the name of the material, the count of the parts, the reason for the measurement, the source of the story and the courage to revise a conclusion. The greatest gift of a book is not the feeling that everything is settled. It is the ability to continue the work.

A companion for learning how the world is made

A Billionaire Guide Book to Rebuilding Civilization From Scratch is an illustrated journey through the knowledge behind everyday life: how people shelter, find and store water, grow food, organise a workshop, measure the world and pass useful knowledge to the next generation.

Written by Carlos "Charlie" Verbelen, the book connects practical explanation with the people, experiments and traditions that shaped it. Historical photographs, original source artwork, large diagrams and custom illustrated chapter titles bring the stories into view. Material panels show what the parts look like, how many are needed, what tools do the work and how costs and time are estimated.

Nine subject groups organise the reading volume: shelter and infrastructure; water and farming; wood and textiles; electrical systems; mechanisms and tools; measurements and the sky; materials and chemistry; history and belief; and markets and technology.

The alphabetical index, glossary and contents provide routes through the material. The accompanying local library searches subject and source records and links to the two PDFs. Readers can enlarge diagrams in their PDF viewer. The editable manuscript and its referenced assets are included in the recovery package.

For readers drawn to deep history and esoteric traditions, the book follows unusual questions back towards their sources while keeping cultural interpretation distinct from demonstrated physical evidence. For makers, it asks the concrete questions: what is this made from, how much is needed, what can the model actually show and what must be checked before proceeding?

This reference brings together historical accounts, practical methods and their source records.

ON THIS PAGE
PDF Portable Document Format

Credits, originals and the workshop library

The source register follows this opening. Collection names, item numbers, dates and rights statements remain attached to historical images. The three corrected dome images supplied by the author are credited to ZeusC. Earlier superseded copies remain in the recovery history, outside the current dome gallery.

Contemporary illustrated titles and explanatory diagrams are credited separately. A portraitsignature is original lettering for Carlos “Charlie” Verbelen, not an historical autograph. Names and dates identify the represented person; uncertain dates remain qualified.

The Interactive Library gathers the seven current readers, the dome workshop, the image study companion, original files, research records and scalable drawings. Editable cost sheets retain local currencies and stated assumptions. Blank prices remain unquoted. The older wholebook image and editorial audit is still in

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The illustrated title artworks in this reading edition are digital masters. Larger print masters and the final fixedtrim print volumes undergo a separate resolution, margin, spine and proof check.

Open the Interactive Library

COMPLETE PLANT LESSONS

The page ranges below are physical positions in this edition. Original reference labels remain printed on each page. The linked entries open the beginning of each complete topic.

Minor cuts and first aid

Refs 202-205 + 1258-1259

Rhubarb anatomy and freezing

Refs 206-209 + 1260-1262

Quinoa anatomy and preparation

Refs 210-213 + 1263-1265

Regional botanical atlas

Refs 214-217 + 1266-1268

Foraging records and weighing

Refs 218-222 + 1269-1271

Taro anatomy and preparation

Refs 223-226 + 1272-1274

Trees and seasonal records

Refs 227-230 + 1275-1277

White and black algarrobo

Refs 231-234 + 1278-1280

Plant identity, food preparation and first aid have separate evidence requirements. Relocation keeps the instructions beside their plates; it does not authenticate an unidentified specimen.

Contents Glossary Index Author TG1

Physical 197-201

Physical 202-207

Physical 208-213

Physical 214-219

Physical 220-226

Physical 227-232

Physical 233-238

Physical 239-244

Read the overview, method and diagrams together; source lists are in the closing reference section

COMPLETE WISDOM LESSONS

Wisdom and archival evidence

Refs 235-237 + 1281-1283

Amish context and sewing

Refs 238-239 + 1284-1287

Solstices and shadow observation

Refs 240-241 + 1288-1291

Earth measurement

Refs 242-244 + 1292-1296

Community learning

Refs 245-246 + 1297-1301

Descartes and the pineal

Refs 247-248 + 1302-1307

Durable community notebooks

Refs 249-250 + 1308-1314

Food traditions

Refs 251-252 + 1315-1321

Hermetic textual history

Refs 253-254 + 1322-1328

Workshop history and measurement

Refs 255-256 + 1329-1335

Local calendar and phenology

Refs 257-258 + 1336-1342

Calendar systems and festivals

Refs 240-241 + 1343-1354

Solstices and calendars share 240-241. The exchange manual follows shared stores at 1397-1404; the Knowledge Base and language introduction follow teaching at 1405-1406.

Contents Glossary Index Author TG2

Physical 246-250

Physical 251-255

Physical 256-260

Physical 272-278

Physical 279-284

Physical 285-290

Physical 291-297

Physical 298-304

Physical 305-311

Physical 312-318

Physical 319-326

Physical 256-271

FIFTEEN ESTATES, FIFTEEN COMPLETE CASES

Each overview stays with its components, interiors and dated cost scenarios

Choose one alternative estate. Read its complete case before comparing it with another. USD and Argentine-peso figures remain dated scenarios; they are not current quotations or a combined budget.

01 Forest-edge estate

09 Sunset estate

1026-1033

1084-1090

02 Formal courtyard estate

10 Shared courtyard estate

1034-1040

1091-1097

03 Axial estate and growing grid

ON THIS PAGE

USD United States dollar

04 Lakeside mixed-use estate

05 Long lakeside service estate

06 Terraced landscape estate

07 Waterfront and garden compound

08 Dock and pavilion estate

11 Runway-adjacent estate

12 Pond-centred estate

13 Agricultural service estate

14 Mountain-waterfront estate

15 Guest-house and water estate

Physical pages in this edition; source reference labels remain unchanged.

Expanded contents

Contents Glossary Index Author E1

1041-1047

1048-1054

1055-1062

1063-1069

1070-1076

1077-1083

1098-1107

1108-1114

1115-1122

1123-1130

1131-1137

TERMS ON THIS PAGE USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

COMMUNICATION SOURCES AND AN OPTIONAL READING TRAIL

Catalogued objects, a published code and a recorded message each answer a different question

1 EVIDENCE 2 MECHANISM 3 PRACTICE 4 CHECK

D394 Morse-Vail key · EM.181411 · 1844 · Smithsonian; image CC0.

D395 Souvenir tape · 25 May 1844 · Smithsonian; image CC0.

D396 24 May message · LOC, MSS33670, box 71, folder 009.

ON THIS PAGE

CC0 Creative Commons Zero, a public-domain dedication tool · **LOC** Library of Congress

D397 ITU-R M.1677-1 · Annex 1, sections 1-2 · code and timing.

D398 FEMA ICS 213, version 3 · message, reply, role, date, time.

D401 Smithsonian register EM.181670 · coil, lever and paper drive.

D392 American Red Cross · Make a Plan · contacts and practice.

BETWEEN THE LINES · 01

Optional author-devised puzzle. Take the first letter of each line. The answer is a verb already practised in this lesson.

Record the sender.

Establish the time.

Ask for a repeat.

Distinguish receipt from action.

Keep the answer. A second clue appears in the teaching lesson. Solutions are at PZ1.

The key photograph and souvenir tape are historical objects. Circuit and timing plates are original explanations. M-017 and the drill result are invented examples. Neither puzzle clues nor decorative geometry serve as historical evidence.

Contents Glossary Index Author 1386

TERMS ON THIS PAGE EM: Smithsonian electrical collection identifier In the telegraph-key record, EM.181411 is the museum catalogue identifier for the object.

CC0: Creative Commons Zero A public-domain dedication by which a rights holder waives rights to the extent legally possible.

LOC: Library of Congress The United States national library, which holds the cited photograph or manuscript.

ITU-R: International Telecommunication Union Radiocommunication Sector The body responsible for the cited radio-frequency and propagation recommendations.

FEMA: Federal Emergency Management Agency The United States agency that provides the cited emergency-preparedness guidance.

ICS: Incident Command System A standard way of assigning responsibilities and coordinating an incident response.

D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

D396 24 May message · LOC, MSS33670, box 71, folder 009.

https://www.americanhistory.si.edu/collections/object/nmah_713485

https://www.loc.gov/item/mmorse000107/

D397 ITU-R M.1677-1 · Annex 1, sections 1-2 · code and timing.

https://www.loc.gov/item/mmorse000107/

ON THIS PAGE

FEMA Federal Emergency Management Agency · **ICS** Incident Command System · **CC0** Creative Commons Zero, a public-domain dedication tool · **LOC** Library of Congress

https://www.itu.int/rec/R-REC-M.1677-1-200910-I/

D398 FEMA ICS 213, version 3 · message, reply, role, date, time.

https://www.itu.int/rec/R-REC-M.1677-1-200910-I/

https://training.fema.gov/EMIWeb/IS/ICSResource/assets/ICS%20Forms//ICS%20Form%20213,%20General%20Message%20(v3).pdf

D401 Smithsonian register EM.181670 · coil, lever and paper drive.

https://training.fema.gov/EMIWeb/IS/ICSResource/assets/ICS%20Forms//ICS%20Form%20213,%20General%20Message%20(v3).pdf

https://www.si.edu/object/nmah_706635

D392 American Red Cross · Make a Plan · contacts and practice.

FIRST-DAY SOURCES, LIMITS AND AN OPTIONAL CLUE

D403 USGS: Facing the Great Disaster, 2006

Historical infrastructure failures, not a present-day route plan.

D407 FEMA P-1019: Emergency Power Systems, 2014

Shared vulnerabilities; this diagram is not a system design.

D404 George Lawrence: San Francisco after the earthquake

Aftermath photograph, about five weeks later; public domain.

D405 CDC: How to Create an Emergency Water Supply

Storage baseline with personal and environmental additions.

D406 FEMA: Incident Objectives, ICS 202 v3.1

Time-bounded objectives; the estate board is author-created.

D408 OSHA: Emergency Preparedness, Getting Started

Hazard-specific evacuation, sheltering and assistance.

D409 EIA: Measuring Electricity

Watts describe power; watt-hours describe energy.

D410 SAM: Battery Storage model documentation

Nameplate capacity differs from delivered energy.

OPTIONAL READING TRAIL · FIVE INITIALS

Copy the source and time.

Hold unresolved stock apart.

Establish who owns the task.

ON THIS PAGE

FEMA Federal Emergency Management Agency · **ICS** Incident Command System · **USGS** United States Geological Survey · **SAM** System Advisor Model

Confirm the returned result.

Keep the record for the next person.

Author-devised clue. The answer is at PZ1. No instruction depends on solving it.

Contents Glossary Index Author 1393

TERMS ON THIS PAGE USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

FEMA, Federal Emergency Management Agency The United States agency that provides the cited emergency-preparedness guidance. ICS, Incident Command System A standard way of assigning responsibilities and coordinating an incident response.

OSHA: Occupational Safety and Health Administration The United States workplace-safety agency.

EIA, Energy Information Administration The United States agency publishing energy statistics and explaining energy units. SAM, System Advisor Model The energy modelling software whose documentation describes battery storage.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D403 USGS: Facing the Great Disaster, 2006

Historical infrastructure failures, not a present-day route plan.

D404 George Lawrence: San Francisco after the earthquake

Aftermath photograph, about five weeks later; public domain.

D405 CDC: How to Create an Emergency Water Supply

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USGS United States Geological Survey · **FEMA** Federal Emergency Management Agency · **ICS** Incident Command System · **SAM** System Advisor Model

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MINOR CUTS: METHOD AND FIGURE SOURCES

Primary first-aid guidance and botanical evidence limits | Checked 21 October 2026

D195 | Initial care and escalation NHS. Cuts and grazes. Reviewed 2 April 2026. Bleeding before washing; cleaning; dressing care; urgent signs. Read primary source

D196 | Pressure and circulation American Red Cross. Wounds: Symptoms, Types, and First Aid. Preserving the original pad, avoiding a stack, and distal colour, temperature and feeling. Read primary source

D197 | Cleaning around a small wound St John Ambulance. Cuts and grazes. Reviewed 28 April 2025. Gentle cleaning, fresh swab strokes directed outwards and reasons for medical review. Read primary source

D198 | Contact face and tape placement St John Ambulance. How to apply a dressing. Reviewed 28 April 2025. Use the sterile-pad section: edge handling, coverage beyond the wound and no complete tape loop. Read primary source

D199 | Rinsing and contamination limits Health Service Executive, Ireland. Cleaning a wound. Reviewed 15 July 2026. Named 5-10 minute rinse interval, non-stick pad, unsuitable materials and reasons for assessment. Read primary source

D200 | Daily care of a minor cut American Academy of Dermatology. How to treat minor cuts. Updated 11 February 2022. Daily bandage changes and plain petroleum jelly for a cleaned minor cut. No drug regimen is prescribed here. Read primary source

D201 | Tetanus assessment CDC. Clinical Guidance for Wound Management to Prevent Tetanus. Updated 8 September 2026. Wound type and vaccination history govern clinician assessment. US guidance is not an Argentina immunisation prescription. Read primary source

ON THIS PAGE

US United States

D202 | Botanical evidence and cautions NCCIH. Herbs at a Glance. Evidence and caution index. It does not establish any individual herb treatment. Read primary source

Source choice: the St John bandage-attached subsection gives different soaked-dressing advice. This unit follows NHS and Red Cross for that situation and uses St John for the separate-pad technique. No universal rinse volume, dressing size, herb dose or safe wound-size threshold is inferred.

Overview 202 Procedure plate 1258 1259

TERMS ON THIS PAGE NHS: National Health Service The public health service named as the source of the guidance in the United Kingdom.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. NCCIH, National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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RHUBARB: ANATOMY AND PREPARATION SOURCES

Primary university-extension and food-preservation references | Checked 22 October 2026

ON THIS PAGE

NCCIH National Center for Complementary and Integrative Health · **US** United States

D203 | Leaf form and crop terminology Susan Mahr / UW-Madison Extension: Rhubarb, Rheum rhabarbarum. Revised 17 April 2025. Basal heart-shaped blades, coloured petioles, buds and rhizome. Morphology only; broad historical anecdotes were not adopted. Read primary source

D204 | Crown, rhizome and roots Oregon State University Extension: Grow your own rhubarb, EC 797. Crown buds near the soil surface, underground rhizome and fibrous roots. Regional cultivation quantities are not universal specifications. Read primary source

D203 | Leaf form and crop terminology Susan Mahr / UW-Madison Extension: Rhubarb, Rheum rhabarbarum. Revised 17 April 2025. Basal heart-shaped blades, coloured petioles, buds and rhizome. Morphology only; broad historical anecdotes were not adopted. Read primary source

D204 | Crown, rhizome and roots Oregon State University Extension: Grow your own rhubarb, EC 797. Crown buds near the soil surface, underground rhizome and fibrous roots. Regional cultivation quantities are not universal specifications. Read primary source

D205 | Petiole versus leaf blade Jill MacKenzie / University of Minnesota Extension: Growing rhubarb in home gardens. Reviewed 2026. Edible part, toxic blades, removal after harvest and cultivar colour variation. No medical dose or Argentine harvest calendar inferred. Read primary source

D206 | Rhubarb freezing procedure National Center for Home Food Preservation: Freezing Rhubarb. Based on So Easy to Preserve, 6th ed., 2014. Selection, washing, trimming, package-sized pieces, raw dry pack and optional one-minute preheat with prompt cooling. Read primary source D207 | Headspace by pack type NCHFP / University of Georgia: Headspace to Allow. Dry-pack row: 1/2 inch for listed pint and quart containers. Converted to 12.7 mm. Liquid-pack rows are not substituted. Read primary source

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/growing-rhubarb

https://nchfp.uga.edu/how/freeze/fruits/freezing-rhubarb/

https://nchfp.uga.edu/how/freeze/freeze-general-information/headspace-to-allow/

https://nchfp.uga.edu/how/freeze/freeze-general-information/packaging-and-labeling-foods/

D208 | Closure and batch label NCHFP / University of Georgia: Packaging and Labeling Foods. Cooling before packing, sealing edge, closure, contents, added ingredients, date, amount and physical form. Read primary source

D209 | Temperature and freezer loading NCHFP / University of Georgia: Freezing Pointers. 0°F or below; prompt freezing; circulation space; limit the load to what freezes within 24 hours. No invented freezer capacity. Read primary source

D210 | Container suitability NCHFP / University of Georgia: Containers for Freezing. Moisture resistance, low-temperature durability and sound closures. Diagram dimensions are illustrative, not product specifications. Read primary source

The two detailed plates explain garden-rhubarb structure and one raw dry-pack route. They are unscaled original drawings, not specimen identifications. The existing photograph remains unauthenticated. Food preparation is specific to stalks from a known food crop; other parts and processes require their own evidence.

Overview 206 Anatomy 1260 Freezing plate 1261 1262

ON THIS PAGE

mm millimetre, 0.001 metre · **NCHFP** National Center for Home Food Preservation

TERMS ON THIS PAGE UW: University of Wisconsin The university system credited here through its Madison campus or extension.

EC, Extension Circular The publication-series prefix used by Oregon State University Extension for this growing guide. NCHFP, National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

mm: Millimetre A unit of length equal to one thousandth of a metre.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D203 | Leaf form and crop terminology Susan Mahr / UW-Madison Extension: Rhubarb, Rheum rhabarbarum. Revised 17 April 2025. Basal heart-shaped blades, coloured petioles, buds and rhizome. Morphology only; broad historical anecdotes were not adopted. Read primary source

D204 | Crown, rhizome and roots Oregon State University Extension: Grow your own rhubarb, EC 797. Crown buds near the soil surface, underground rhizome and fibrous roots. Regional cultivation quantities are not universal specifications. Read primary source

D205 | Petiole versus leaf blade Jill MacKenzie / University of Minnesota Extension: Growing rhubarb in home gardens. Reviewed 2026. Edible part, toxic blades, removal after harvest and cultivar colour variation. No medical dose or Argentine harvest calendar inferred. Read primary source

https://hort.extension.wisc.edu/articles/rhubarb-rheum-rhabarbarum/

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/growing-rhubarb

D206 | Rhubarb freezing procedure National Center for Home Food Preservation: Freezing Rhubarb. Based on So Easy to Preserve, 6th ed., 2014. Selection, washing, trimming, package-sized pieces, raw dry pack and optional one-minute preheat with prompt cooling. Read primary source D207 | Headspace by pack type NCHFP / University of Georgia: Headspace to Allow. Dry-pack row: 1/2 inch for listed pint and quart containers. Converted to 12.7 mm. Liquid-pack rows are not substituted. Read primary source

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https://nchfp.uga.edu/how/freeze/freeze-general-information/headspace-to-allow/

https://nchfp.uga.edu/how/freeze/freeze-general-information/packaging-and-labeling-foods/

D208 | Closure and batch label NCHFP / University of Georgia: Packaging and Labeling Foods. Cooling before packing, sealing edge, closure, contents, added ingredients, date, amount and physical form. Read primary source

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D209 | Temperature and freezer loading NCHFP / University of Georgia: Freezing Pointers. 0°F or below; prompt freezing; circulation space; limit the load to what freezes within 24 hours. No invented freezer capacity. Read primary source

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D210 | Container suitability NCHFP / University of Georgia: Containers for Freezing. Moisture resistance, low-temperature durability and sound closures. Diagram dimensions are illustrative, not product specifications. Read primary source

The two detailed plates explain garden-rhubarb structure and one raw dry-pack route. They are unscaled original drawings, not specimen identifications. The existing photograph remains unauthenticated. Food preparation is specific to stalks from a known food crop; other parts and processes require their own evidence.

Overview 206 Anatomy 1260 Freezing plate 1261 1262

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D205 | Petiole versus leaf blade Jill MacKenzie / University of Minnesota Extension: Growing rhubarb in home gardens. Reviewed 2026. Edible part, toxic blades, removal after harvest and cultivar colour variation. No medical dose or Argentine harvest calendar inferred. Read primary source

D206 | Rhubarb freezing procedure National Center for Home Food Preservation: Freezing Rhubarb. Based on So Easy to Preserve, 6th ed., 2014. Selection, washing, trimming, package-sized pieces, raw dry pack and optional one-minute preheat with prompt cooling. Read primary source D207 | Headspace by pack type NCHFP / University of Georgia: Headspace to Allow. Dry-pack row: 1/2 inch for listed pint and quart containers. Converted to 12.7 mm. Liquid-pack rows are not substituted. Read primary source

https://hort.extension.wisc.edu/articles/rhubarb-rheum-rhabarbarum/

https://extension.oregonstate.edu/catalog/ec-797-grow-your-own-rhubarb

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https://nchfp.uga.edu/how/freeze/freeze-general-information/containers-for-freezing/

QUINOA: ANATOMY, METHOD AND SOURCES

Primary botany, crop, recipe and household food-safety references | Checked 22 October 2026

D170 | ACCEPTED NAME Royal Botanic Gardens, Kew. Plants of the World Online: Chenopodium quinoa Willd. Existing Batch 65 source reused. Accepted species and Amaranthaceae; no pictured-specimen authentication. Read primary source

D211 | ANDEAN STEWARDSHIP FAO. Quinoa: crop history, traditional knowledge and food uses. Andean context and Indigenous stewardship. Historical overview is not a local growing prescription. Read primary source

D212 | SHOOT AND PANICLE Canadian Food Inspection Agency. SWI 142.1.2-7, Appendix III: Quinoa (2024). Alternate leaves, variable blades and branching flower clusters. No Canadian rule is applied to Argentina. Read primary source

D213 | GRAIN EXTERIOR USDA APHIS / IDtools. SeedImages: Chenopodium quinoa. Lens shape, retained pericarp, texture and a 2 × 2 × 1 mm reference example. Not a species-wide size limit. Read primary source

D214 | INTERNAL STRUCTURE Prego, Maldonado & Otegui (1998). Seed structure and localization of reserves. Annals of Botany 82:481-488. Figures 1-7 and results. DOI: 10.1006/anbo.1998.0704. Original paper held by Universidad Nacional de La Plata. Read primary source

D215 | STOVETOP METHOD Oregon State University, Food Hero. Stovetop Quinoa. One recipe: 1 cup grain, 2 cups water, covered low simmer 12 min, then rest 5-10 min. Not a universal ratio. Read primary source

ON THIS PAGE

NCHFP National Center for Home Food Preservation · **FAO** Food and Agriculture Organization of the United Nations · **USDA** United States Department of Agriculture · **APHIS** Animal and Plant Health Inspection Service · **mm** millimetre, 0.001 metre · **×** multiplied by · **DOI** Digital object identifier · **min** minute, 60 seconds

D216 | VOLUME CONVERSIONS NIST. Metric Kitchen: Cooking Measurement Equivalencies. Approximate home-cooking equivalents: 1 US cup = 240 mL; 2 cups = 480 mL. Volume is not dry-grain mass. Read primary source

D217 | COOKED-FOOD HANDLING FoodSafety.gov. 4 Steps to Food Safety. USDA FSIS. Keep Food Safe! Food Safety Basics. Prompt shallow-container cooling; 2-hour / hot-weather 1-hour rule; cold storage and reheating. Read primary source USDA leftover guidance

https://www.foodsafety.gov/keep-food-safe/4-steps-to-food-safety

https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/steps-keep-food-safe

Original teaching drawings, not copied source figures. Dimensions in the seed reference describe an example; cooking volumes are approximate conversions. The photo on 210 remains unauthenticated. Checked 22 October 2026.

Overview 210 Anatomy 1263 Cooking plate 1264 1265

TERMS ON THIS PAGE FAO: Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference.

SWI: Specific work instruction A Canadian Food Inspection Agency procedure identifier. The number locates the cited crop-inspection instructions.

USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

APHIS: Animal and Plant Health Inspection Service The United States agriculture service responsible for animal and plant health.

DOI, Digital object identifier A stable identifier used to find a publication or other registered work. NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. mL, Millilitre One thousandth of a litre, a unit of volume.

D170 | ACCEPTED NAME Royal Botanic Gardens, Kew. Plants of the World Online: Chenopodium quinoa Willd. Existing Batch 65 source reused. Accepted species and Amaranthaceae; no pictured-specimen authentication. Read primary source

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NIST National Institute of Standards and Technology · **US** United States · **mL** millilitre, 0.001 litre · **=** equals · **USDA** United States Department of Agriculture · **FSIS** Food Safety and Inspection Service · **FAO** Food and Agriculture Organization of the United Nations · **APHIS** Animal and Plant Health Inspection Service · **mm** millimetre, 0.001 metre · **×** multiplied by

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https://sedici.unlp.edu.ar/bitstream/handle/10915/131396/Documento_completo.pdf-PDFA.pdf?isAllowed=y&sequence=1

https://www.nist.gov/pml/owm/metric-si/metric-kitchen/metric-kitchen-cooking-measurement-equivalencies

D214 | INTERNAL STRUCTURE Prego, Maldonado & Otegui (1998). Seed structure and localization of reserves. Annals of Botany 82:481-488. Figures 1-7 and results. DOI: 10.1006/anbo.1998.0704. Original paper held by Universidad Nacional de La Plata. Read primary source

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D217 | COOKED-FOOD HANDLING FoodSafety.gov. 4 Steps to Food Safety. USDA FSIS. Keep Food Safe! Food Safety Basics. Prompt shallow-container cooling; 2-hour / hot-weather 1-hour rule; cold storage and reheating. Read primary source USDA leftover guidance

Original teaching drawings, not copied source figures. Dimensions in the seed reference describe an example; cooking volumes are approximate conversions. The photo on 210 remains unauthenticated. Checked 22 October 2026.

FSIS: Food Safety and Inspection Service The United States Department of Agriculture service responsible for the food-safety guidance cited here.

REGIONAL ATLAS: METHODS AND SOURCES

Primary botanical, photographic and biodiversity-data references | Checked 22 October 2026

D218 | RECORD FIELDS TDWG. Darwin Core Quick Reference Guide. Current terms, checked 22 October 2026. Definitions for coordinates, datum, uncertainty and record provenance. This page combines normative definitions with explanatory notes. Read primary source

D219 | GEOREFERENCING Chapman AD & Wieczorek JR (2020). Georeferencing Best Practices. GBIF Secretariat. Location extent, point-radius representation, uncertainty and preservation of original records. The 40 × 30 m example is an original worked illustration. Read primary source

D220 | ARGENTINE FLORA Instituto de Botánica Darwinion, CONICET-ANCEFN. Proyectos institucionales: Flora Vascular de la República Argentina. Regional keys, descriptions, images, distribution and herbarium references. Does not authenticate this book's photographs. Read primary source

D221 | NAMES AND USE CLAIMS Royal Botanic Gardens, Kew. Medicinal Plant Names Services: frequently asked questions. Name and synonym lookup. Inclusion records a cited use; it is not an endorsement of medicinal efficacy. Read primary source

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NIST National Institute of Standards and Technology · **US** United States · **mL** millilitre, 0.001 litre · **=** equals · **DOI** Digital object identifier · **min** minute, 60 seconds · **USDA** United States Department of Agriculture · **FSIS** Food Safety and Inspection Service · **TDWG** Biodiversity Information Standards, historically the Taxonomic Databases Working Group · **GBIF** Global Biodiversity Information Facility · **m** metre, a length unit · **×** multiplied by

D222 | SENSITIVE LOCALITIES Chapman AD (2020). Current Best Practices for Generalizing Sensitive Species Occurrence Data. GBIF Secretariat. Document restrictions and generalization; retain the original record securely. Geographic randomization can misrepresent evidence. Read primary source

D223 | PHOTOGRAPHIC EVIDENCE New York Botanical Garden, LuEsther T. Mertz Library. Photographing Plants for Identification: Home. Clear site, habit and detail views; scale, locality and observation timing. Updated 17 February 2026. Read primary source D224 | DIAGNOSTIC VIEWS New York Botanical Garden. Photographing Plants for Identification: What Should I Photograph? Leaf attachment, both leaf faces, flowers, fruit, twigs and habit. The drawn plant is a schematic subject, not an identified taxon. Read primary source

https://docs.gbif.org/sensitive-species-best-practices/master/en/index.en.html

https://libguides.nybg.org/plantidphoto

https://libguides.nybg.org/c.php?g=655135&p=4597679

https://www.extension.umd.edu/resource/tips-submitting-photos-ask-extension

D225 | IMAGE QUALITY University of Maryland Extension. Tips for Submitting Photos to Ask Extension. Updated 15 September 2026. Focus, multiple angles, a sizing reference and unfiltered photographs. Does not supply an identification from these diagrams. Read primary source

The original photograph on 214 is retained without a new identity, locality or rights claim. Plate 1266 illustrates recordkeeping; plate 1267 is explicitly hypothetical. Neither is a distribution map, edible-plant certificate or measured survey.

Overview 214 Field plate 1266 Location plate 1267 1268

TERMS ON THIS PAGE TDWG: Biodiversity Information Standards, originally Taxonomic Databases Working Group The international body developing standards for biodiversity data.

GBIF: Global Biodiversity Information Facility An international network that publishes species-occurrence and collection data.

CONICET, Consejo Nacional de Investigaciones Científicas y Técnicas Argentina's national scientific and technical research council. ANCEFN, Academia Nacional de Ciencias Exactas, Físicas y Naturales Argentina's National Academy of Exact, Physical and Natural Sciences. m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D218 | RECORD FIELDS TDWG. Darwin Core Quick Reference Guide. Current terms, checked 22 October 2026. Definitions for coordinates, datum, uncertainty and record provenance. This page combines normative definitions with explanatory notes. Read primary source

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https://mpns.science.kew.org/mpns-portal/faq

https://docs.gbif.org/sensitive-species-best-practices/master/en/index.en.html

https://libguides.nybg.org/plantidphoto

FORAGING: METHODS AND SOURCES

Primary toxicology, ecology and food-handling references | Checked 23 October 2026

D226 | Plant-part hazards National Capital Poison Center: Poisonous and non-poisonous plants Part-specific toxicity and the need for reliable identity. An illustrated list is guidance, not clearance of a specimen. Read primary source

ON THIS PAGE

GBIF Global Biodiversity Information Facility

D227 | Misleading resemblance National Capital Poison Center: Can poison hemlock be deadly? Look-alike confusion and changing characters through the life cycle. No identification is inferred from the retained photo. Read primary source

D228 | Ecological consequences US Forest Service: Wildflower Ethics and Native Plants Reproduction and wildlife dependence. US examples do not establish collection rights in Argentina or another jurisdiction. Read primary source

D229 | Produce hygiene US FDA: Selecting and Serving Produce Safely Handwashing, running water, separation and limits of washing. This guidance does not make unknown wild plants edible. Read primary source

D230 | Poison first aid National Capital Poison Center: First aid guidelines Urgent expert help, emergency signs, information for triage and no induced vomiting. Use local emergency services. Read primary source

D231 | Argentina contact Hospital Posadas: Centro Nacional de Intoxicaciones Official national contact and 24-hour service. Telephone 0800-333-0160, checked 23 October 2026. Read primary source

D232 | Delayed symptoms NHS: Poisoning; reviewed 12 June 2025 Symptoms may take hours or days; seek prompt advice. Do not induce vomiting or give food or drink while awaiting help.

D230 | Poison first aid National Capital Poison Center: First aid guidelines Urgent expert help, emergency signs, information for triage and no induced vomiting. Use local emergency services. Read primary source

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The lot record and weighing figures are original teaching examples. The assumed masses are not measured harvest data, portions or medical thresholds. No source authenticates the plant in the retained overview photograph.

Overview 218 Field kit 1269 Mass record 1270 1271

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

FDA, Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here. NHS, National Health Service The public health service named as the source of the guidance in the United Kingdom.

D232 | Delayed symptoms NHS: Poisoning; reviewed 12 June 2025 Symptoms may take hours or days; seek prompt advice. Do not induce vomiting or give food or drink while awaiting help. Read primary source

https://www.poison.org/first-aid-for-poisonings

https://www.nhs.uk/conditions/poisoning/

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US United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source

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TARO: SOURCES AND METHOD BOUNDARIES

Botanical references, a regional recipe and food-handling controls | Checked 23 October 2026

D233 | Species and leaf form NC State Extension: Colocasia esculenta, Plant Toolbox. Peltate foliage, cultivar variation and raw-plant irritation. Not used as a universal cooking protocol. Read primary source

D234 | Plant-part relationships UH CTAHR: Parts of a taro plant, from Taro Mauka to Makai (2008). Leaf junction, petiole, corm and feeder roots. New drawings use original geometry; source artwork is not reproduced. Read primary source

D235 | Corm and root structure Bishop Museum (2013): Hawaiian Kalo, Corm descriptors. Stem identity, leaf scars, fibrous roots and internal vascular bundles. No cultivar is inferred from colour. Read primary source

D236 | Rourou recipe Pacific Community (2017): Taro in Pacific cooking, p. 11. Published leaf dish; ingredient amounts and cooking sequence. It does not specify a corm process or an oxalate assay. Read primary source

D237 | Corm selection and acridity Paull and Chen, UH CTAHR (2015): Taro, VC-5. Postharvest condition, cultivar differences and cooking requirement. Commercial storage figures are not applied to cooked leftovers. Read primary source

D238 | Produce preparation US FDA: Selecting and Serving Produce Safely. Clean hands, running-water rinsing and separation from raw meat. Washing is not a plant-toxin treatment. Read primary source

D239 | Cooling and clean utensils FoodSafety.gov: 4 Steps to Food Safety. Prompt refrigeration, shallow containers, 4 °C cold storage and separate raw/cooked utensils. Read primary source

D240 | Reheating leftovers US CDC (2025): Preventing Food Poisoning. 165 °F leftover reheating and thermometer checks. Not a first-cook target for taro irritants. Read primary source

Botanical drawings are original, schematic and not to scale. The existing photograph is not newly authenticated. Recipe quantities belong to the cited dish; no safe wild-plant identification, medical benefit or universal detoxification time is asserted.

Overview 223 Anatomy 1272 Leaf workbench 1273 1274

TERMS ON THIS PAGE NC State: North Carolina State University The United States university credited with horticultural or extension information.

UH: University of Hawai‘i The university named in the cited agricultural context.

CTAHR, College of Tropical Agriculture and Human Resources The University of Hawai‘i college credited with the agricultural reference. US, United States of America Identifies the country or jurisdiction of the source, price or institution. FDA: Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here.

CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

ON THIS PAGE

UH University of Hawai‘i · **US** United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **°C** degree Celsius, a temperature unit

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TARO: SOURCES AND METHOD BOUNDARIES

Botanical references, a regional recipe and food-handling controls | Checked 23 October 2026

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D236 | Rourou recipe Pacific Community (2017): Taro in Pacific cooking, p. 11. Published leaf dish; ingredient amounts and cooking sequence. It does not specify a corm process or an oxalate assay. Read primary source

D237 | Corm selection and acridity Paull and Chen, UH CTAHR (2015): Taro, VC-5. Postharvest condition, cultivar differences and cooking requirement. Commercial storage figures are not applied to cooked leftovers. Read primary source

D238 | Produce preparation US FDA: Selecting and Serving Produce Safely. Clean hands, running-water rinsing and separation from raw meat. Washing is not a plant-toxin treatment. Read primary source

D239 | Cooling and clean utensils FoodSafety.gov: 4 Steps to Food Safety. Prompt refrigeration, shallow containers, 4 °C cold storage and separate raw/cooked utensils. Read primary source

D240 | Reheating leftovers US CDC (2025): Preventing Food Poisoning. 165 °F leftover reheating and thermometer checks. Not a first-cook target for taro irritants. Read primary source

Botanical drawings are original, schematic and not to scale. The existing photograph is not newly authenticated. Recipe quantities belong to the cited dish; no safe wild-plant identification, medical benefit or universal detoxification time is asserted.

Overview 223 Anatomy 1272 Leaf workbench 1273 1274

TERMS ON THIS PAGE NC State: North Carolina State University The United States university credited with horticultural or extension information.

D233 | Species and leaf form NC State Extension: Colocasia esculenta, Plant Toolbox. Peltate foliage, cultivar variation and raw-plant irritation. Not used as a universal cooking protocol. Read primary source

D234 | Plant-part relationships UH CTAHR: Parts of a taro plant, from Taro Mauka to Makai (2008). Leaf junction, petiole, corm and feeder roots. New drawings use original geometry; source artwork is not reproduced. Read primary source

D235 | Corm and root structure Bishop Museum (2013): Hawaiian Kalo, Corm descriptors. Stem identity, leaf scars, fibrous roots and internal vascular bundles. No cultivar is inferred from colour. Read primary source

D236 | Rourou recipe Pacific Community (2017): Taro in Pacific cooking, p. 11. Published leaf dish; ingredient amounts and cooking sequence. It does not specify a corm process or an oxalate assay. Read primary source

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UH University of Hawai'i · **US** United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **°C** degree Celsius, a temperature unit

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https://www.foodsafety.gov/keep-food-safe/4-steps-to-food-safety

https://www.cdc.gov/food-safety/prevention/index.html

TREES: SOURCES AND OBSERVATION LIMITS

Field protocols, an identified botanical example and regional knowledge | Checked 23 October 2026

D241 | Status and individual records USA National Phenology Network: Nature's Notebook Documentation (2025). Individual plants, date records and Y / N / ? / unchecked statuses. Preserve the definition used at the time. Read primary source

D242 | Field equipment and marking University of Maine Extension: Signs of the Seasons, How to Observe. Access, field materials, repeat visits and non-disruptive markers. No universal site size is imported here. Read primary source

D243 | Visit intervals and replacement USA-NPN: Nature's Notebook Frequently Asked Questions. Weekly or more frequent visits during change; a replacement plant receives its own identity. Read primary source

D244 | Apple structures NC State Extension Plant Toolbox: Malus domestica. Alternate simple leaves, flowers on short shoots and pome fruit. No cultivar, size or local ripening date is inferred. Read primary source

D245 | Whole-plant interpretation Patty Guertin, USA-NPN: Focus on Flowers and Fruits (updated 2023). Evaluate the defined structures across the plant and score overlapping phases separately. Read primary source

D246 | Quality and uncertainty USA-NPN: Data Quality, observational data products. Identity, phase and entry checks; temporal precision matters. The three-day bracket is our explicit hypothetical example.

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D247 | Regional plant-use context Australian National Botanic Gardens: A Bush Food Garden for your school or community. NSW Southern Tablelands and ACT context only. Its plant list is not reproduced as food-preparation advice. Read primary source

D248 | Knowledge and consent AIATSIS (2020): Code of Ethics for Aboriginal and Torres Strait Islander Research, sections 1 and 2. Engagement, consent, attribution and control of knowledge. This Australian code does not document other peoples' practices. Read primary source

The original photograph remains unauthenticated. Apple drawings are original schematics, not to scale or a food-identification key. The observation log is an invented teaching example, clearly labelled; it supplies no measured harvest date, yield, medical benefit or universal recipe.

Overview 227 Field plate 1275 Visit record 1276 1277

TERMS ON THIS PAGE USA: United States of America Identifies the country or jurisdiction of the source, price or institution.

USA-NPN, USA National Phenology Network The United States network tracking seasonal biological events such as leaf-out and flowering. NC State, North Carolina State University The United States university credited with horticultural or extension information. NSW, New South Wales The Australian state in which the cited collection or site is located. AIATSIS, Australian Institute of Aboriginal and Torres Strait Islander Studies The Australian institution responsible for the cited cultural record.

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ALGARROBO: SOURCES AND PROCESS LIMITS

ON THIS PAGE

USA-NPN USA National Phenology Network · **NSW** New South Wales, Australia · **AIATSIS** Australian Institute of Aboriginal and Torres Strait Islander Studies · **USA** United States of America

Botanical descriptions, Argentine processing guidance and food standards | Checked 23-24 October 2026

D249 | White algarrobo name Royal Botanic Gardens, Kew: Plants of the World Online, Neltuma alba. Accepted name and Prosopis alba synonym. Taxonomy does not identify the retained photograph. Read primary source

D250 | Black algarrobo name Royal Botanic Gardens, Kew: Plants of the World Online, Neltuma nigra. Accepted name and Prosopis nigra synonym. No food-safety inference follows from a common name. Read primary source

D251 | White algarrobo structures Argentina, National Parks SIB: Neltuma alba, botanical description. Bipinnate leaves, leaflet and pod ranges, pale pod and individual seed cases. Published ranges are not specimen measurements. Read primary source

D252 | Black algarrobo structures Argentina, National Parks SIB: Neltuma nigra, botanical description. Small leaflets and constricted, often purple-marked pods. The conflicting pod-width entry is not reproduced. Read primary source

D253 | Argentine processing guide Argentina, agroindustry food guidance: La algarroba (2019), pages 1, 4-5. Pod tissues and a processing sequence. Missing parameters prevent treating it as a validated production schedule. Read primary source

D254 | Seed versus whole-fruit flour ANMAT: Argentine Food Code, Chapter IX, November 2025; Articles 681, 681 bis and 681 tris. Ingredient definitions, species labels and microbiological requirements. European carob is a separate product. Read primary source D255 | Process control and verification FAO and WHO (2023): General Principles of Food Hygiene, CXC 1-1969, 2022 revision. Validated controls, monitoring, equipment checks and product disposition. General principles, not algarrobo-specific limits. Read primary source

https://www.argentina.gob.ar/sites/default/files/ficha_algarroba_2019.pdf

https://www.argentina.gob.ar/sites/default/files/capitulo_ix_harinas_actualiz_2025-11.pdf

https://www.fao.org/4/cc6125en/cc6125en.pdf

https://www.fda.gov/food/buy-store-serve-safe-food/handling-flour-safely-what-you-need-know

D256 | Raw-flour handling US Food and Drug Administration: Handling Flour Safely: What You Need to Know. Raw-flour separation, cleaning and following cooking directions. It supplies no Neltuma processing temperature. Read primary source

Botanical drawings are original schematics, not a food-identification key. Equipment has no construction scale. The weighing example is explicitly hypothetical. No medical benefit, shelf life, disinfectant dose or validated heat treatment is supplied.

Overview 231 Botanical plate 1278 Process record 1279 1280

TERMS ON THIS PAGE SIB: Sistema de Información de Biodiversidad The biodiversity information system of Argentina's National Parks Administration.

ANMAT: Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology.

ON THIS PAGE

SIB Sistema de Información de Biodiversidad · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **FAO** Food and Agriculture Organization of the United Nations · **WHO** World Health Organization · **CXC** Codex code of practice · **US** United States

FAO, Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference. WHO, World Health Organization The United Nations agency for international public health.

CXC: Codex code of practice The prefix identifies a code of practice issued by the Codex Alimentarius Commission.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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https://www.argentina.gob.ar/sites/default/files/capitulo_ix_harinas_actualiz_2025-11.pdf

https://www.fda.gov/food/buy-store-serve-safe-food/handling-flour-safely-what-you-need-know

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https://sib.gob.ar/especies/neltuma-alba

https://sib.gob.ar/especies/neltuma-nigra

https://www.argentina.gob.ar/sites/default/files/ficha_algarroba_2019.pdf

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SIB Sistema de Información de Biodiversidad · **US** United States · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **FAO** Food and Agriculture Organization of the United Nations · **WHO** World Health Organization · **CXC** Codex code of practice

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https://www.fao.org/4/cc6125en/cc6125en.pdf

https://www.fda.gov/food/buy-store-serve-safe-food/handling-flour-safely-what-you-need-know

WISDOM: SOURCES AND EVIDENCE LIMITS

Source analysis, archival practice and the three airship records | Checked 24 October 2026

D257 | Question, observation and inference Library of Congress: Teacher's Guides and Analysis Tool. Observe, reflect, question and investigate. Applied here as a claim-reading method, not document authentication. Read primary source

D258 | Reading a photograph US National Archives: Analyze a Photograph (reviewed 2023). Visible parts, creator, date, purpose and further evidence. Caption information is distinguished from observation. Read primary source

D259 | Transcription and review Smithsonian Transcription Center: General Instructions, pages 1-2. Preserve original wording and check against the source. Unclear text stays marked; translation is a separate layer. Read primary source

D260 | Enna Jettick photograph Library of Congress: item 2017645472, Enna Jettick near the mast (1931). Caption, catalog summary and verso-stamp date. Print: 28 × 17 cm; LC-DIG-ppmsca-51844. Publication may be restricted. Read primary source

D261 | Attempted mail collection Library of Congress: Blimp takes mail from Empire State Building - almost (1931). Item 2019632904; failed rope transfer and a filmed staging in its caption. Print: 21 × 26 cm; ppmsca-56252. Read primary source

D262 | Museum object and interpretation The Metropolitan Museum of Art: object 2011.189, dirigible image (1930). Unknown American maker; image 25.4 × 20.3 cm. Catalog interpretation is attributed, including its broad docking denial. Read primary source

D263 | Keeping digital copies Library of Congress: Personal Archiving, Digital Photographs. Select quality files, describe and organize them, keep copies in separate locations and check readability. Read primary source

D264 | Manipulated-photography context The Metropolitan Museum of Art: Mia Fineman, Faking It (2012), publication record. Lists the 1930 dirigible work among the publication's objects. No precise compositing technique is inferred. Read primary source

Print dimensions describe catalogued physical objects, not aircraft, buildings or digital pixels. Original diagrams explain record handling and attribution. The diagrams separate object size, catalog description and historical inference; they supply no aviation engineering data.

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US United States · **cm** centimetre, 0.01 metre · **×** multiplied by

Overview 235 Record method 1281 Airship comparison 1282 1283

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

cm: Centimetre A unit of length equal to one hundredth of a metre.

LC-DIG: Library of Congress digital reproduction identifier The prefix identifies a digitised reproduction in the library's collections.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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https://www.loc.gov/item/2019632904/

https://digitalpreservation.gov/personalarchiving/photos.html

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https://www.metmuseum.org/art/collection/search/294832

https://www.metmuseum.org/met-publications/faking-it-manipulated-photography-before-photoshop

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https://www.metmuseum.org/met-publications/faking-it-manipulated-photography-before-photoshop

AMISH CONTEXT AND SEWING: SOURCES

Institutional object records and university extension methods | Checked 25 October 2026

D265 | Amish historical context Young Center, Elizabethtown College: Amish Origins. Ammann, Anabaptist origins and the 1693 division. Historical context does not establish a universal household method. Read primary source

D266 | Technology and community choices Young Center, Elizabethtown College: Technology. Selective use and adaptation of tools. No blanket claim that Amish households reject machines or all electricity. Read primary source

D267 | A particular Lancaster quilt The Metropolitan Museum of Art: Quilt, Diamond in the Square pattern, about 1920. Unnamed Amish maker; seven-pointed star and elaborate quilting. Catalog description, not a sewing specification. Read primary source

D268 | Documented machine piecing International Quilt Museum: Center Diamond, object 1997.007.0232. Sarah Smoker; probably Lancaster County, 1915-1935; machine piecing. Retain the catalog's qualified location. Read primary source

D271 | Layering and stitch checks Utah State University Extension: Machine Quilting, Loraine Selman. Top, batting, backing and inspection of both faces. Machine settings and batting requirements need the actual product instructions. Read primary source

D272 | Covering the quilt edge Utah State University Extension: Binding a Quilt, Tricia Mathis. Binding attachment and testing folded coverage on the reverse. No universal strip width or historic-quilt repair is prescribed. Read primary source

The practice block is a modern teaching example. Inch-to-millimetre conversions use 25.4 mm per inch. Nominal geometry is distinct from a measured sewn result. The diagrams are original explanations of fabric construction, not reproductions of museum quilts.

Overview 238 Context 239 Geometry 1284 Layers 1285 Method 1286 1287

TERMS ON THIS PAGE mm: Millimetre A unit of length equal to one thousandth of a metre.

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mm millimetre, 0.001 metre

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https://extension.usu.edu/sewing/research/squares-can-be-fun

https://extension.usu.edu/sewing/research/machine-quilting

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https://extension.usu.edu/sewing/research/baby-rail-blues

https://extension.usu.edu/sewing/research/binding-a-quilt

ON THIS PAGE

mm millimetre, 0.001 metre

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https://extension.usu.edu/sewing/research/machine-quilting

https://extension.usu.edu/sewing/research/binding-a-quilt

SEASONAL ASTRONOMY AND SHADOWS: SOURCES

Primary astronomy and observation sources | Checked 25 October 2026

D273 | Tilt and the seasonal cycle U.S. Naval Observatory: The Seasons and the Earth's Orbit. About 23.4 degrees of obliquity, nearly fixed annual axis direction and opposite seasonal illumination. Orbit drawings are not to scale. Read primary source

D274 | Events and hemispheres U.S. Naval Observatory: Earth's Seasons data service. Equinox/solstice terminology and hemispheric seasons. Use month names when a northern seasonal label would mislead. Read primary source

D275 | 2026 event times U.S. Naval Observatory: calculated seasons for 2026, Universal Time. 20 March 14:46; 21 June 08:24; 23 September 00:05; 21 December 20:50 UT. These are year-specific event instants.

D276 | Daylight at an equinox U.S. Naval Observatory: Length of Day and Night at the Equinoxes. Sunrise/sunset use the visible disk edge; atmospheric refraction affects daylight. Equal-day dates vary with latitude.

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D276 | Daylight at an equinox U.S. Naval Observatory: Length of Day and Night at the Equinoxes. Sunrise/sunset use the visible disk edge; atmospheric refraction affects daylight. Equal-day dates vary with latitude. Read primary source

D277 | Fixed-staff observation NASA STEM: Activity One, Making a Sundial, 2024. Level site, vertical staff, measured height and shadow, dated readings, fixed setup and refinement near the shortest shadow. Read primary source

ON THIS PAGE

mm millimetre, 0.001 metre · **NASA** National Aeronautics and Space Administration

D278 | Solar-position geometry NOAA Global Monitoring Division: General Solar Position Calculations. Latitude, declination and hour angle determine geometric elevation. The noon relation and shadow lengths here are explicit derivations. Read primary source

D279 | Calculation limits NOAA Global Monitoring Laboratory: Solar Calculation Details. Atmospheric conditions limit agreement with observations. The legacy online calculator is no longer actively maintained; no live-service accuracy is promised. Read primary source

D280 | Solar time and clock time U.S. Naval Observatory: The Equation of Time. Meridian crossing, apparent solar time, longitude and civil-clock differences. Noon and the seasonal event instant are different concepts. Read primary source

The 35° S example uses a chosen 1000 mm staff and rounded solstice declinations of ±23.4°. Flat ground, vertical staff and geometric rays are assumed. Calculated lengths are not observations. The 2026 table is a dated almanac example, not a perpetual calendar.

Overview 240 Context 241 Seasons 1288 Shadows 1289 Method 1290 1291

TERMS ON THIS PAGE U.S.: United States of America Identifies the country or jurisdiction of the source, price or institution.

UT, Universal Time A time reference used in astronomical records so observers can compare an event across locations. NASA, National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

NOAA: National Oceanic and Atmospheric Administration The United States agency supplying ocean, weather and climate records.

mm: Millimetre A unit of length equal to one thousandth of a metre.

D273 | Tilt and the seasonal cycle U.S. Naval Observatory: The Seasons and the Earth's Orbit. About 23.4 degrees of obliquity, nearly fixed annual axis direction and opposite seasonal illumination. Orbit drawings are not to scale. Read primary source

D274 | Events and hemispheres U.S. Naval Observatory: Earth's Seasons data service. Equinox/solstice terminology and hemispheric seasons. Use month names when a northern seasonal label would mislead. Read primary source

D275 | 2026 event times U.S. Naval Observatory: calculated seasons for 2026, Universal Time. 20 March 14:46; 21 June 08:24; 23 September 00:05; 21 December 20:50 UT. These are year-specific event instants. Read primary source

D276 | Daylight at an equinox U.S. Naval Observatory: Length of Day and Night at the Equinoxes. Sunrise/sunset use the visible disk edge; atmospheric refraction affects daylight. Equal-day dates vary with latitude. Read primary source

D277 | Fixed-staff observation NASA STEM: Activity One, Making a Sundial, 2024. Level site, vertical staff, measured height and shadow, dated readings, fixed setup and refinement near the shortest shadow. Read primary source

ON THIS PAGE

NOAA National Oceanic and Atmospheric Administration · **°** degree, an angle unit · **mm** millimetre, 0.001 metre · **±** plus or minus; stated tolerance or uncertainty · **NASA** National Aeronautics and Space Administration

D278 | Solar-position geometry NOAA Global Monitoring Division: General Solar Position Calculations. Latitude, declination and hour angle determine geometric elevation. The noon relation and shadow lengths here are explicit derivations. Read primary source

D279 | Calculation limits NOAA Global Monitoring Laboratory: Solar Calculation Details. Atmospheric conditions limit agreement with observations. The legacy online calculator is no longer actively maintained; no live-service accuracy is promised. Read primary source

D280 | Solar time and clock time U.S. Naval Observatory: The Equation of Time. Meridian crossing, apparent solar time, longitude and civil-clock differences. Noon and the seasonal event instant are different concepts. Read primary source

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D279 | Calculation limits NOAA Global Monitoring Laboratory: Solar Calculation Details. Atmospheric conditions limit agreement with observations. The legacy online calculator is no longer actively maintained; no live-service accuracy is promised. Read primary source

https://www.nasa.gov/wp-content/uploads/2024/10/activity-one-making-a-sundial-508-fs-10072024-accreport-review.pdf

https://www.gml.noaa.gov/grad/solcalc/calcdetails.html

D280 | Solar time and clock time U.S. Naval Observatory: The Equation of Time. Meridian crossing, apparent solar time, longitude and civil-clock differences. Noon and the seasonal event instant are different concepts. Read primary source

https://gml.noaa.gov/grad/solcalc/solareqns.PDF

https://aa.usno.navy.mil/faq/eqtime

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https://www.gml.noaa.gov/grad/solcalc/calcdetails.html

https://aa.usno.navy.mil/faq/eqtime

SOURCES AND WHAT REMAINS OPEN

D339-D349 · consulted 28 October 2026 · primary institutional sources and explicitly labelled editorial calculations.

D339 · Mashantucket Pequot Museum, Our Moons

Community museum presentation: turtle-shell counting and named seasonal relationships; this is not a universal Indigenous calendar.

D340 · Ethiopian Orthodox Tewahedo Church, The Liturgical Year Calendar structure, Pagumen, Evangelist cycle and chronology. A church account of its tradition, not a description of every Ethiopian person.

D341 · US Naval Observatory, Astronomical Almanac Glossary Calendar, Julian, sidereal and tropical year definitions; consistent with the 2023 Almanac.

D342 · US Naval Observatory, Leap Years Gregorian leap-year rule and mean year; comparison with the Julian rule.

D343 · E. G. Richards, Calendars (2012) Explanatory Supplement to the Astronomical Almanac, chapter 15, especially section 15.1.3 and table 15.1. Mean synodic month near epoch 2000:29.53059 days.

ON THIS PAGE

NOAA National Oceanic and Atmospheric Administration · **°** degree, an angle unit · **mm** millimetre, 0.001 metre · **±** plus or minus; stated tolerance or uncertainty · **US** United States

D344 · US Naval Observatory, Introduction to Calendars Solar, lunar and lunisolar distinctions; historical reforms and the approximate 19-year relationship.

D345 · The Henry Ford, authenticated quotations

Entry from Ford News,15 October 1926, p.2, “Mr. Ford Explains the Five-Day Week”. Read as management testimony, not an independent evaluation.

D346 · Library of Congress, 40 Hours, 5 Days (2024)

Dated newspaper and Ford News evidence;1922 discussion and 1926 company implementation.

D347 · Library of Congress, April Fools (2016) Folklife research reviewing competing origin stories and a clear 1561 Flemish reference. Origin is not securely established.

D348 · US Naval Observatory, The Date of Easter Western ecclesiastical rule: fixed 21 March, tabular moon, following Sunday; historical tables and differing practices.

D349 · US Naval Observatory, Julian Dates

Continuous day count and its distinction from a civil calendar.

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

D339 · Mashantucket Pequot Museum, Our Moons

Community museum presentation: turtle-shell counting and named seasonal relationships; this is not a universal Indigenous calendar.

D340 · Ethiopian Orthodox Tewahedo Church, The Liturgical Year Calendar structure, Pagumen, Evangelist cycle and chronology. A church account of its tradition, not a description of every Ethiopian person.

D341 · US Naval Observatory, Astronomical Almanac Glossary Calendar, Julian, sidereal and tropical year definitions; consistent with the 2023 Almanac.

D342 · US Naval Observatory, Leap Years Gregorian leap-year rule and mean year; comparison with the Julian rule.

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D348 · US Naval Observatory, The Date of Easter Western ecclesiastical rule: fixed 21 March, tabular moon, following Sunday; historical tables and differing practices.

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US United States

SOURCES AND WHAT REMAINS OPEN

D339 · Mashantucket Pequot Museum, Our Moons Community museum presentation: turtle-shell counting and named seasonal relationships; this is not a universal Indigenous calendar.

D340 · Ethiopian Orthodox Tewahedo Church, The Liturgical Year

Calendar structure, Pagumen, Evangelist cycle and chronology. A church account of its tradition, not a description of every Ethiopian person.

D341 · US Naval Observatory, Astronomical Almanac Glossary

Calendar, Julian, sidereal and tropical year definitions; consistent with the 2023 Almanac.

D342 · US Naval Observatory, Leap Years

Gregorian leap-year rule and mean year; comparison with the Julian rule.

D343 · E. G. Richards, Calendars (2012)

Explanatory Supplement to the Astronomical Almanac, chapter 15, especially section 15.1.3 and table 15.1. Mean synodic month near epoch 2000:29.53059 days.

D344 · US Naval Observatory, Introduction to Calendars Solar, lunar and lunisolar distinctions; historical reforms and the approximate 19-year relationship.

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D347 · Library of Congress, April Fools (2016)

Folklife research reviewing competing origin stories and a clear 1561 Flemish reference. Origin is not securely established.

D348 · US Naval Observatory, The Date of Easter

Western ecclesiastical rule: fixed 21 March, tabular moon, following Sunday; historical tables and differing practices.

D339 · Mashantucket Pequot Museum, Our Moons

D340 · Ethiopian Orthodox Tewahedo Church, The Liturgical Year Calendar structure, Pagumen, Evangelist cycle and chronology. A church account of its tradition, not a description of every Ethiopian person.

D341 · US Naval Observatory, Astronomical Almanac Glossary Calendar, Julian, sidereal and tropical year definitions; consistent with the 2023 Almanac.

D342 · US Naval Observatory, Leap Years Gregorian leap-year rule and mean year; comparison with the Julian rule.

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D348 · US Naval Observatory, The Date of Easter Western ecclesiastical rule: fixed 21 March, tabular moon, following Sunday; historical tables and differing practices.

D349 · US Naval Observatory, Julian Dates

EARTH MEASUREMENT: EVIDENCE AND SOURCES

Historical scholarship, agency definitions and measurement practice | Checked 26 October 2026

D281 | Surviving historical results Carman & Evans, The Two Earths of Eratosthenes, Isis 106 (2015), 1-16; abstract. Original historical research: 250000/252000 stades; priority and evidence limits. Read source

D282 | Cleomedes and assumptions Jason E. Ybarra, AAS Historical Astronomy Division, June history column (2019). Scholarly commentary on the later account; not an original field record. Read source

D283 | WGS 84 definition National Geospatial-Intelligence Agency, World Geodetic System 1984. Defining a and reciprocal flattening; b is calculated here from those parameters. Read source

D284 | Gravity and the geoid NOAA National Geodetic Survey, What is the geoid? Gravity-related level surface; distinguish it from terrain and the ellipsoid. Read source

D285 | Satellite laser ranging International Laser Ranging Service, service overview, NASA-hosted. Two-way pulse timing, station/orbit products and reference-frame contribution. Read source

D286 | Range and instrument models International Laser Ranging Service, Modeling. Pointing, atmospheric delay and satellite centre-of-mass corrections. Read source

D287 | SI speed of light NIST, CODATA value: speed of light in vacuum. c = 299792458 m/s exactly; this does not make a measured flight time exact. Read source

D288 | Measurement uncertainty NIST, Essentials of expressing measurement uncertainty: Basic definitions. Input estimates and corrections define a measurement process; bounds are not a confidence level. Read source

The diagrams are original. Chosen examples are labelled; no ancient quotation or precise stade conversion is asserted. Source scope is stated above. Checked 26 October 2026.

Overview 242 History 243 Geometry 1292 Ranging 1294 Method 1295 1296

TERMS ON THIS PAGE AAS: American Astronomical Society The astronomy organisation credited with the cited observation or viewing information.

WGS: World Geodetic System 1984 A geodetic reference system used to express and compare geographic coordinates.

NOAA, National Oceanic and Atmospheric Administration The United States agency supplying ocean, weather and climate records. laser / LASER, Light amplification by stimulated emission of radiation A device that produces a directional beam of light by stimulated emission.

ON THIS PAGE

US United States · **NOAA** National Oceanic and Atmospheric Administration · **SI** Système international d'unités, the International System of Units · **NIST** National Institute of Standards and Technology · **CODATA** Committee on Data of the International Science Council · **m/s** metres per second, speed · **=** equals

NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

SI, International System of Units (Système international d'unités) The common measurement system built on units such as the metre, kilogram and second. NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

CODATA: Committee on Data of the International Science Council The scientific committee responsible for recommended fundamental physical constants.

D285 | Satellite laser ranging International Laser Ranging Service, service overview, NASA-hosted. Two-way pulse timing, station/orbit products and reference-frame contribution. Read source

D286 | Range and instrument models International Laser Ranging Service, Modeling. Pointing, atmospheric delay and satellite centre-of-mass corrections. Read source

D287 | SI speed of light NIST, CODATA value: speed of light in vacuum. c = 299792458 m/s exactly; this does not make a measured flight time exact. Read source

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https://physics.nist.gov/cuu/Constants/Value/c.html

https://physics.nist.gov/cuu/Uncertainty/basic.html

COMMUNITY LEARNING: SOURCES AND LIMITS

Educational guidance, an original research abstract and SI units | Checked 26 October 2026

D294 | Adult education and participation UNESCO Institute for Lifelong Learning, overview of the 2015 Recommendation on Adult Learning and Education. Formal, non-formal and informal learning; literacy, vocational and community education; participation and inclusion. This source is the agency overview, not a newly verified legal text. Read source

TERMS ON THIS PAGE SI: International System of Units (Système international d'unités) The common measurement system built on units such as the metre, kilogram and second.

et al.: Et alii, et aliae or et alia (and others) In a citation, the expression indicates additional authors whose names are omitted from the shortened reference.

IES: Institute of Education Sciences The United States education research institute credited with the learning-science publication.

NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

mm, Millimetre A unit of length equal to one thousandth of a metre. cm, Centimetre A unit of length equal to one hundredth of a metre.

ON THIS PAGE

SI Système international d'unités, the International System of Units · **NIST** National Institute of Standards and Technology · **CODATA** Committee on Data of the International Science Council · **m/s** metres per second, speed · **=** equals · **UNESCO** United Nations Educational, Scientific and Cultural Organization

DOI: Digital object identifier A stable identifier used to find a publication or other registered work.

UNESCO: United Nations Educational, Scientific and Cultural Organization The intergovernmental body responsible for the heritage or cultural record cited here.

m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D294 | Adult education and participation UNESCO Institute for Lifelong Learning, overview of the 2015 Recommendation on Adult Learning and Education. Formal, non-formal and informal learning; literacy, vocational and community education; participation and inclusion. This source is the agency overview, not a newly verified legal text. Read source

DESCARTES AND THE PINEAL: SOURCES

Source type, exact scope and limits · Access checked 26 October 2026

D295 · Descartes: the actual pineal argument

René Descartes, Les Passions de l'Âme (1649), articles 30-32 and 34-35. French primary text, ATHENA, University of Geneva.

Articles 30-32 distinguish union with the whole body from the gland's proposed special role. Articles 34-35 describe the obsolete animal-spirit mechanism. This is evidence for his argument, not for its physiological truth.

D296 · A philosophical claim in its own context

Descartes, Discours de la méthode (1637), part IV. French text and English translation hosted by Duke University; French edition credited to Victor Cousin, 1824.

The short quotation on reference 247 concerns the certainty of the thinking subject. It is not a pineal experiment. English wording on 247 is an editorial translation of the quoted French.

D297 · Pineal anatomy and neural control

Josephine Arendt and Anna Aulinas, Physiology of the Pineal Gland and Melatonin. Endotext, updated 27 October 2022, especially pages 1-3.

Authored endocrine reference: attachment to the third-ventricle roof, pinealocytes and the retina-to-hypothalamus-to-sympathetic route. The figures here are original explanatory drawings, not patient imaging or copied textbook plates.

D298 · Landmarks of the central nervous system

J. Gordon Betts and colleagues, Anatomy and Physiology 2e, section 13.2, The Central Nervous System. OpenStax, 2022.

Used for the relationship of cerebrum, diencephalon, brainstem and cerebellum, and for the pineal's inclusion in the epithalamus. No OpenStax illustration or passage is reproduced.

Overview 247 Anatomy 1302 Route 1303 Method 1305

TERMS ON THIS PAGE D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

ON THIS PAGE

UNESCO United Nations Educational, Scientific and Cultural Organization

Articles 30-32 distinguish union with the whole body from the gland's proposed special role. Articles 34-35 describe the obsolete animal-spirit mechanism. This is evidence for his argument, not for its physiological truth.

Josephine Arendt and Anna Aulinas, Physiology of the Pineal Gland and Melatonin. Endotext, updated 27 October 2022, especially pages 1-3.

D299 · Circadian timing across the body

National Institute of General Medical Sciences, Circadian Rhythms. Content reviewed September 2023; page updated May 2025.

Official educational explanation of daily rhythms, light input, the SCN and clocks in different tissues. It does not specify one universal bedtime or certify a supplement regimen.

D300 · A measured human response to light

Alfred J. Lewy, Thomas A. Wehr, Frederick K. Goodwin, David A. Newsome and S. P. Markey. Light Suppresses Melatonin Secretion in Humans. Science 210 (1980), 1267-1269. DOI: 10.1126/science.7434030.

Original research abstract reports suppression of nocturnal melatonin by bright artificial light in six participants. Abstract and bibliographic record checked; full paper not obtained. No exposure threshold or treatment instruction is extracted.

D301 · Museum identification of the portrait

Musée du Louvre, Portrait de René Descartes (1596-1650) philosophe. Inventory INV 1317 / MR 738; catalogue updated 5 November 2024.

The catalogue identifies the painting as after Frans Hals, a copy of a lost portrait, rather than an autograph Hals painting. This attribution governs the caption, even though the older reproduction uses the artist's name without qualification.

D302 · The reproduced historical image

Portrait plate from Alfred Fouillée, Descartes (1893), reproduced on Wikimedia Commons as

Public-domain reproduction, 1350 × 1525 pixels. Exact downloaded image retained with checksum and source URL. Its printing texture and tonal limits are preserved; no face generation, restoration or invented setting was used.

.

Official educational explanation of daily rhythms, light input, the SCN and clocks in different tissues. It does not specify one universal bedtime or certify a supplement regimen.

The catalogue identifies the painting as after Frans Hals, a copy of a lost portrait, rather than an autograph Hals painting. This attribution governs the caption, even though the older reproduction uses the artist's name without qualification.

Overview 247 Anatomy 1302 Route 1303 Method 1305 Sources 1306

Musée du Louvre, Portrait de René Descartes (1596-1650) philosophe. Inventory INV 1317 / MR 738; catalogue updated 5 November 2024.

ON THIS PAGE

SCN Suprachiasmatic nucleus, a brain region coordinating daily rhythms · **DOI** Digital object identifier · **URL** Uniform Resource Locator · × multiplied by

TERMS ON THIS PAGE SCN: Suprachiasmatic nucleus A small region of the brain involved in coordinating daily biological rhythms.

MR, Musée Royal inventory series A historical Louvre inventory designation. The number identifies the object within that catalogue series. URL, Uniform resource locator

INV: Inventory number The catalogue prefix identifies a numbered object entry in the collection.

MR, Musée Royal inventory series A historical Louvre inventory designation. The number identifies the object within that catalogue series. URL, Uniform resource locator The web address that leads to a source or record. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

COMMUNITY NOTEBOOKS: SOURCES AND LIMITS

Primary institutional guidance and historical records · Access checked 26 October 2026

D303 · Historical record

Smithsonian Institution Archives. Record of Experiments: Introduction.

Institutional account of Joseph Henry's dated notebooks beginning in 1834. Supports the history on 250, not a claim that a notebook alone establishes scientific priority.

D304 · Observation context

Smithsonian National Museum of Natural History. Field Book Activity: Making and Recording Observations.

Date, location, time, observer, drawings and associated context. A field entry preserves what was recorded; it does not independently authenticate an identification.

D305 · Entries and corrections

University of Alabama in Huntsville. Laboratory Notebooks Best Practices.

Distinguishes original, calculated and transcribed data; explains units, cross-references and readable corrections. Adapted here as practical habits, without importing university ownership or legal rules.

D306 · Authorship and custody

National Cancer Institute, Technology Transfer Center. Guide for Keeping Laboratory Records.

Supports dated authorship, indexed attachments, custody and restricted access. The community forms are original examples, not a claim of patent or regulatory compliance.

Overview 249 Ledger 1308 Records 1309 Method 1311

TERMS ON THIS PAGE D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Institutional account of Joseph Henry's dated notebooks beginning in 1834. Supports the history on 250, not a claim that a notebook alone establishes scientific priority.

Distinguishes original, calculated and transcribed data; explains units, cross-references and readable corrections. Adapted here as practical habits, without importing university ownership or legal rules.

ON THIS PAGE

SCN Suprachiasmatic nucleus, a brain region coordinating daily rhythms

University of Alabama in Huntsville. Laboratory Notebooks Best Practices.

Distinguishes original, calculated and transcribed data; explains units, cross-references and readable corrections. Adapted here as practical habits, without importing university ownership or legal rules.

D307 · Paper protection

U.S. National Archives. Storing Family Papers and Photographs. Reviewed 18 September 2025.

Supports dry shelving away from leaks and appropriately sized preservation enclosures. No storage design here is certified against fire, flooding or every cause of decay.

D308 · Copies and readability

Library of Congress. Keeping Personal Digital Records.

Descriptive names, a collection description, multiple copies in separate places, and checks that files remain readable. Backup count alone cannot show that a particular record was captured completely.

D309 · Fixity and its limits

National Digital Stewardship Alliance. Checking Your Digital Content: What is Fixity, and When Should I be Checking It? 2014, pp. 1-3, 5-6.

Checksums and hashes test bit-level consistency against a baseline; preservation also requires usable files and recovery arrangements. The stock example's truth and a person's identity are separate questions.

HOW TO READ THE EXAMPLE

Identifiers, dates, quantities, correction times, revisions and the shelf arrangement are invented for this lesson. This method helps readers find and examine evidence. It does not establish the engineering correctness or safe use of a design merely because that design has a complete record.

Overview 249 Ledger 1308 Records 1309 Method 1311 Sources 1313

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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FOOD TRADITIONS: SOURCES AND LIMITS

Heritage accounts, primary research and institutional guidance · Access checked 26 October 2026

D310 · Mediterranean food heritage

Italian Ministry of Culture, UNESCO office. Mediterranean diet: inscription and description, 2013.

ON THIS PAGE

UNESCO United Nations Educational, Scientific and Cultural Organization

Official account of shared meals, skills and transmission in the seven-country nomination. Heritage recognition does not establish a uniform menu or a clinical treatment effect.

D311 · Washoku and transmission

UNESCO Multimedia Archives. Washoku, Traditional Dietary Cultures of the Japanese, Notably for the Celebration of New Year. 2013.

The written archive description supports the New Year and household-transmission example. The associated video was not independently reviewed; no image from it is reproduced.

D312 · Agriculture and altitude

FAO. Andean Agriculture, Peru. Globally Important Agricultural Heritage Systems, designated 2011.

Site-specific agricultural bands, crop diversity and community practices. The schematic on 1315 is an original synthesis, not a map, construction section or universal planting guide.

D313 · Modern nutrition guidance

Nordic Council of Ministers. Nordic Nutrition Recommendations 2023. Recommendations chapter.

Contemporary Nordic and Baltic dietary guidance. It is not an ethnographic inventory of what everyone in those regions historically ate.

Overview 251 Landscape 1315 Mass 1316 Method 1318

TERMS ON THIS PAGE UNESCO: United Nations Educational, Scientific and Cultural Organization The intergovernmental body responsible for the heritage or cultural record cited here.

FAO: Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference.

Nordic Council of Ministers. Nordic Nutrition Recommendations 2023. Recommendations chapter.

Contemporary Nordic and Baltic dietary guidance. It is not an ethnographic inventory of what everyone in those regions historically ate.

D314 · A corrected clinical study

Estruch R et al. Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts. NEJM 2018;378:e34.

Corrected 2018 abstract and bibliographic record, DOI 10.1056/NEJMoa1800389. Values on 1317 are adjusted estimates from this report; the withdrawn 2013 paper is not the evidence used.

D315 · Food hygiene framework

World Health Organization. Five Keys to Safer Food Manual. 15 May 2006. ISBN 9789241594639.

The publication overview provides five broad hygiene principles. It is not a validated recipe, preservation schedule or product-specific cooking instruction.

D316 · Foodways as cultural evidence

ON THIS PAGE

UNESCO United Nations Educational, Scientific and Cultural Organization · **FAO** Food and Agriculture Organization of the United Nations · **NEJM** New England Journal of Medicine · **DOI** Digital object identifier · **ISBN** International Standard Book Number

Library of Congress, American Folklife Center. Foodways: Resources in the American Folklife Center. Introduction.

D317 · Reading the study statistic

National Cancer Institute. NCI Dictionary of Cancer Terms: hazard ratio.

A plain-language definition of comparison over time. The plotted ratio on 1317 must not be read as an individual probability or an added number of years of life.

Overview 251 Landscape 1315 Mass 1316 Method 1318 Sources 1320

TERMS ON THIS PAGE et al.: Et alii, et aliae or et alia (and others) In a citation, the expression indicates additional authors whose names are omitted from the shortened reference.

NEJM: New England Journal of Medicine The medical research journal named in the citation.

DOI, Digital object identifier A stable identifier used to find a publication or other registered work. ISBN, International Standard Book Number An identifier distinguishing a book edition and format. NCI, National Cancer Institute The United States institute providing the cited cancer information. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

FOOD TRADITIONS: SOURCES AND LIMITS

Heritage accounts, primary research and institutional guidance · Access checked 26 October 2026

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Corrected 2018 abstract and bibliographic record, DOI 10.1056/NEJMoa1800389. Values on 1317 are adjusted estimates from this report; the withdrawn 2013 paper is not the evidence used.

D315 · Food hygiene framework

World Health Organization. Five Keys to Safer Food Manual. 15 May 2006. ISBN 9789241594639.

The publication overview provides five broad hygiene principles. It is not a validated recipe, preservation schedule or product-specific cooking instruction.

D316 · Foodways as cultural evidence

Library of Congress, American Folklife Center. Foodways: Resources in the American Folklife Center. Introduction.

D317 · Reading the study statistic

National Cancer Institute. NCI Dictionary of Cancer Terms: hazard ratio.

A plain-language definition of comparison over time. The plotted ratio on 1317 must not be read as an individual probability or an added number of years of life.

Overview 251 Landscape 1315 Mass 1316 Method 1318 Sources 1320

ON THIS PAGE

NEJM New England Journal of Medicine · **DOI** Digital object identifier · **ISBN** International Standard Book Number

TERMS ON THIS PAGE et al.: Et alii, et aliae or et alia (and others) In a citation, the expression indicates additional authors whose names are omitted from the shortened reference.

The publication overview provides five broad hygiene principles. It is not a validated recipe, preservation schedule or product-specific cooking instruction.

A plain-language definition of comparison over time. The plotted ratio on 1317 must not be read as an individual probability or an added number of years of life.

D317 · Reading the study statistic

National Cancer Institute. NCI Dictionary of Cancer Terms: hazard ratio.

HERMETIC TRADITION: SOURCES AND LIMITS

Historical documents, scholarly editions and institutional guides · Access checked 26 October 2026

D318 · Historical setting and genres

D319 · The reproduced historical object

Scholarly account of late-antique Hermetic writings, Egyptian and Greek contexts, and varied technical and philosophical works. The accessible preview was read; later chapters outside it are not cited as inspected.

Catalogue and IIIF metadata identify the edition and Ficino translation. Image 0005 contains the printed imprint; image 0002 is a handwritten bibliographic note despite the viewer's title-page marker. Public Domain Mark; credit

Brian P. Copenhaver. Hermetica. Cambridge University Press, 1992. Publisher preview, introduction.

Wellcome Collection. Pimander de potestate et sapientia Dei. Venice: L. Dominici, 1481. Work ce6w5cj8; scan b11533742, image 0005.

Catalogue and IIIF metadata identify the edition and Ficino translation. Image 0005 contains the printed imprint; image 0002 is a handwritten bibliographic note despite the viewer's title-page marker. Public Domain Mark; credit Wellcome Collection.

D320 · A dialogue and its reception

Matthew Andrews. Corpus Hermeticum XIII. Harvard Divinity School, Center for the Study of World Religions, 7 July 2026.

D321 · Newton: manuscript and dating

The Newton Project, University of Oxford. Catalogue ALCH00017: translation and transcription of the Tabula Smaragdina, with notes.

Keynes MS. 28, King's College, Cambridge. The notes report a proposed late-1680s or early-1690s date for the English translation, based mainly on handwriting. This dates a surviving copy, not the composition of the Tablet.

Overview 253 Object 1322 Quote 1324 Method 1325

TERMS ON THIS PAGE IIIF: International Image Interoperability Framework Standards that allow digital images and collection viewers to work together.

MS, Manuscript or manuscripts A library catalogue abbreviation identifying an unpublished document or a manuscript collection. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Matthew Andrews. Corpus Hermeticum XIII. Harvard Divinity School, Center for the Study of World Religions, 7 July 2026.

D322 · Exact wording and editorial views

Isaac Newton, Keynes MS. 28, f. 2r. The Chymistry of Isaac Newton, Indiana University. Normalized and diplomatic transcriptions, June 2010.

The ten-word excerpt on 1324 is from the normalized English transcription. Both editorial views describe the same manuscript. Newton copied and translated an inherited text; the excerpt is not a line from the Corpus Hermeticum.

D323 · The Tablet's Latin transmission

Silvana Ciuonzo. Tabula smaragdina. Bibliotheca Philosophica Virtualis, bibliographical record and manuscript list.

Used for the Arabic-to-Latin transmission, Hugh of Santalla's twelfth-century Latin version and the existence of distinct versions. The record's precise claim about the earliest Arabic date is not adopted here.

D324 · Reading a primary source

Library of Congress. Teacher's Guide: Analyzing Primary Sources. Observe, Reflect, Question and Further Investigation.

D325 · What an editor has changed

The Chymistry of Isaac Newton, Indiana University. Editorial Practices: diplomatic and normalized transcription conventions.

Defines the two editorial presentations, including treatment of abbreviations, insertions and deletions. Normalization is not a new historical witness. Consult these conventions when comparing the views linked from D322.

Overview 253 Object 1322 Quote 1324 Method 1325 Sources 1327

TERMS ON THIS PAGE MS: Manuscript or manuscripts A library catalogue abbreviation identifying an unpublished document or a manuscript collection.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Used for the Arabic-to-Latin transmission, Hugh of Santalla's twelfth-century Latin version and the existence of distinct versions. The record's precise claim about the earliest Arabic date is not adopted here.

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The Chymistry of Isaac Newton, Indiana University. Editorial Practices: diplomatic and normalized transcription conventions.

WORKSHOP HISTORY: SOURCES AND LIMITS

Primary documents, museum research and manufacturer guidance · Access checked 27 October 2026

D326 · The working manual

Joseph Moxon. Mechanick Exercises. Third edition. London: Dan. Midwinter and Tho. Leigh, 1703. Getty Research Institute copy.

Inspected the scan, especially Joinery, pp. 79-84 and 93: square, preparation of reference surfaces and gauge. The 1703 publication is later than Moxon's death. Short quotation on 1329 normalizes long s; the method on 1331-1333 is modern.

D327 · The reproduced tool plate

Peter C. Welsh. Woodworking Tools 1600-1900. Smithsonian Institution, 1966, Paper 51, pp. 177-227. Figure 3, p. 181.

Museum research reproducing Moxon's 1703 Plate 4 from a Library of Congress copy. Complete figure image retained. Figures 5 and 9 support the 1769 and 1832 comparisons. The title's date range is not evidence of a single worldwide sequence.

D328 · Moxon's identity and life dates

National Portrait Gallery, London. Joseph Moxon. NPG D30334; engraving by Frederick Hendrik van Hove, published 1692.

The museum identifies Moxon as a printer and globemaker, 1627-1691. This record supplies the brief biography; its portrait is not reproduced. Edition date, portrait publication and lifetime are separate facts.

Overview 255 Object 1329 Check 1331 Method 1332

TERMS ON THIS PAGE NPG: National Portrait Gallery The portrait collection identified by the institution or record on the page.

D329 · The modern reversal procedure

Harvey Industries International. How to Adjust the TS-2v2 / TS-1v2 Try Squares. Method 2: Flip Test.

Manufacturer instructions support the straight reference edge and reversed-line comparison. The web article reverses the angle-error relationship in one sentence. Here it is derived explicitly: line divergence is twice the square's angular error. No adjustment procedure is reproduced.

D330 · A specific nineteenth-century improvement

Leonard Bailey. Improvement in Carpenters' Planes. US Patent 72,443, 24 December 1867. Drawing and specification.

The inventor describes an extra cap-iron contact intended to restrain a thin plane iron and reduce buckling and chatter. The original two-page patent was inspected. This is evidence of a proposed mechanism, not an independent performance trial.

D331 · Measurement and its limits

NIST Technical Note 1297. Section 2: Classification of Components of Uncertainty. 1994 guidelines, online edition.

Overview 255 Object 1329 Check 1331 Method 1332 Sources 1334

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

ON THIS PAGE

US United States · **NIST** National Institute of Standards and Technology

NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

SOURCES FOR THE LOCAL-CALENDAR LESSON

D332-D338 · primary records and observation protocols · click each title to open the source

D332 Robert Marsham, printed spring table (1789)

Philosophical Transactions 79, p.156; observations 1771-1788. Public-domain reproduction via Public Domain Image Archive. DOI 10.1098/rstl.1789.0014.

D333 Royal Society manuscript catalogue

L&P/9/126, Table of indications of spring; read 2 April 1789. Catalogue evidence about the paper, not the reproduced printed object.

D334 USA-NPN, How to Observe Handbook (2010)

Version dated 28 July 2010, printed p.13: its uncertainty symbol also covered an event not checked.

D335 USA-NPN documentation (11 March 2025)

D336 USA-NPN, Phenophase Definitions v2.0

April 2021, printed pp.10,16,20: general and historical lilac flower criteria; flower opening and closing.

D337 Denny et al., monitoring methods (2014)

International Journal of Biometeorology 58, 591-601, especially p.595. DOI 10.1007/s00484-014-0789-5.

D338 USA-NPN Nature's Notebook FAQ

Replacement plants receive new identities. The page also records spring-2026 protocol updates.

EVIDENCE BOUNDARY

P01 and B02 are fictional examples. The four SVGs are original explanatory drawings. Historical details come from D332. Operational steps are an editorial application of the cited methods. Sources checked 29-30 October 2026.

Plant instructions distinguish y, n, ?, and an event left unmarked because it was not checked.

D335 USA-NPN documentation (11 March 2025)

Version dated 28 July 2010, printed p.13: its uncertainty symbol also covered an event not checked.

Contents Glossary Index Author

TERMS ON THIS PAGE DOI: Digital object identifier A stable identifier used to find a publication or other registered work.

USA-NPN, USA National Phenology Network The United States network tracking seasonal biological events such as leaf-out and flowering. et al., Et alii, et aliae or et alia (and others) In a citation, the expression indicates additional authors whose names are omitted from the shortened reference.

ON THIS PAGE

DOI Digital object identifier · **USA-NPN** USA National Phenology Network · **FAQ** Frequently asked questions · **USA** United States of America

FAQ: Frequently asked questions A source section organised as questions and answers.

SVGs: Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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SOURCES AND IMAGE PROVENANCE

D362-D368 · historical objects, technical parameters and editorial methods

D362 Library of Congress: Sidereus nuncius (1610)

Catalogue 2010667904. Galileo's dates, Venetian imprint, printer and illustrations. Bibliographic evidence, not a new physical measurement.

D363 Linda Hall Library: The Face of the Moon

1610-1700 section. Venice and Frankfurt lunar prints, edition history and copying changes. The two received image files are retained unchanged.

D364 Galileo, trans. Edward Stafford Carlos (1880)

The Sidereal Messenger, Rivingtons; lunar argument, printed pp.15-16 and 28-30. Historical English translation via Project Gutenberg.

D365 Museo Galileo: telescope, inventory 2427

Ca.1610. Objective f = 1,330 mm; eyepiece f = -94 mm; tube length 1,273 mm. The ray drawing is a modern idealisation.

D366 Museo Galileo: telescope, inventory 2428

Catalogue records a lost original eyepiece and a nineteenth-century replacement. Present components differ from original manufacture.

D367 NIST: FIPS 180-4, Secure Hash Standard

Secure hash algorithms produce digests for change detection. A digest is not independent evidence that a document's claims are true.

ON THIS PAGE

USA United States of America · **mm** millimetre, 0.001 metre · **=** equals · **NIST** National Institute of Standards and Technology · **FIPS** Federal Information Processing Standards A United States government standards series for information processing

D368 NDSA: Levels of Digital Preservation v2.1

March 2026 framework and guidance. The ten-action method and five applications here are editorial procedures, not quoted standards.

IMAGE AND MODEL BOUNDARIES

The two images reproduce historical prints. Their received JPEGs are retained unchanged. Six SVGs are original explanatory drawings; the height example uses invented dimensions. Sources consulted 31 October and 2 November 2026. Full image URLs and file digests accompany this lesson.

Contents Glossary Index Author 1361

TERMS ON THIS PAGE mm: Millimetre A unit of length equal to one thousandth of a metre.

NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

FIPS, Federal Information Processing Standards A United States government standards series for information processing. NDSA, National Digital Stewardship Alliance The organisation behind the Levels of Digital Preservation framework.

JPEGs, Joint Photographic Experts Group The group whose name identifies a widely used photographic image-compression format. SVGs, Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp.

URLs, Uniform resource locator The web address that leads to a source or record. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

SOURCES AND IMAGE PROVENANCE

D362-D368 · historical objects, technical parameters and editorial methods

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NDSA National Digital Stewardship Alliance · **mm** millimetre, 0.001 metre · **=** equals

Catalogue records a lost original eyepiece and a nineteenth-century replacement. Present components differ from original manufacture.

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Contents Glossary Index Author 1361

SOURCES AND A USABLE CLAIM RECORD

Historical object, curatorial interpretations, experimental method and image rights

D369 · THE MET · OBJECT 43.106.1

Albrecht Dürer, Melencolia I, 1514. Object identity, engraving, dimensions, curatorial context and reproduced public-domain image.

D370 · NATIONAL GALLERIES OF SCOTLAND

Melencolia I, P 2170. A separately held impression; discussion of melancholy and the proposed self-portrait reading. Its image is not reproduced.

D371 · NIST · RANDOMIZED BLOCK DESIGNS

NIST/SEMATECH e-Handbook, section 5.3.3.2. Blocking controls selected nuisance factors; compare treatments within blocks.

A RECORD WORTH PRESERVING

Write the exact statement, its source object or version, the supporting observation or calculation, the alternatives and the remaining uncertainty. Record who checked it and when. For a technical decision, add the conditions of use and the consequence of being wrong.

WHAT THIS LESSON ADDS

The eight SVGs are original explanatory drawings. The magic-square arithmetic is independently recomputed. The seed-trial hypothesis, allocation and results are invented teaching material. They are not evidence that Dürer proposed, performed or

D370 · NATIONAL GALLERIES OF SCOTLAND

Melencolia I, P 2170. A separately held impression; discussion of melancholy and the proposed self-portrait reading. Its image is not reproduced.

ON THIS PAGE

NIST National Institute of Standards and Technology · **FIPS** Federal Information Processing Standards A United States government standards series for information processing · **NDSA** National Digital Stewardship Alliance

D371 · NIST · RANDOMIZED BLOCK DESIGNS

NIST/SEMATECH e-Handbook, section 5.3.3.2. Blocking controls selected nuisance factors; compare treatments within blocks.

D372 · NIST · RANDOMIZED DESIGNS

NIST/SEMATECH e-Handbook, section 5.3.3.1. Random assignment of factor levels to experimental units; replication and balanced designs.

D373 · THE MET · IMAGE AND DATA RESOURCES

Open Access policy. The Met provides designated public-domain images and basic collection data under CC0.

The eight SVGs are original explanatory drawings. The magic-square arithmetic is independently recomputed. The seed-trial hypothesis, allocation and results are invented teaching material. They are not evidence that Dürer proposed, performed or endorsed that experiment. The original Met image is retained unchanged. The enlarged detail is a labelled viewport; the modern number grid is a transcription. Source metadata and editable diagrams travel with the recovery package. Sources checked 3 November 2026 · Click a source entry to open its record.

https://www.itl.nist.gov/div898/handbook/pri/section3/pri332.htm

https://www.itl.nist.gov/div898/handbook/pri/section3/pri331.htm

https://www.metmuseum.org/policies/image-resources

Contents Glossary Index Author 1368

TERMS ON THIS PAGE NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

SEMATECH: Semiconductor Manufacturing Technology The semiconductor manufacturing research consortium that collaborated on the statistical handbook.

CC0: Creative Commons Zero A public-domain dedication by which a rights holder waives rights to the extent legally possible.

SVGs: Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp.

D371 · NIST · RANDOMIZED BLOCK DESIGNS

https://www.nationalgalleries.org/art-and-artists/34333/melencolia-i

https://www.itl.nist.gov/div898/handbook/pri/section3/pri332.htm

D372 · NIST · RANDOMIZED DESIGNS

https://www.itl.nist.gov/div898/handbook/pri/section3/pri332.htm

https://www.itl.nist.gov/div898/handbook/pri/section3/pri331.htm

D373 · THE MET · IMAGE AND DATA RESOURCES

https://www.itl.nist.gov/div898/handbook/pri/section3/pri331.htm

ON THIS PAGE

NIST National Institute of Standards and Technology · **CC0** Creative Commons Zero, a public-domain dedication tool

https://www.metmuseum.org/policies/image-resources

SOURCES FOR SHARED STORES AND FAIR WORK

Object records, a surviving grievance, cooperative history and research on governing shared resources

D374 · MEKETRE'S GRANARY

The Met, 20.3.11. Model of a Granary with Scribes, ca. 1981-1975 BCE. Object, context, dimensions and full model photograph.

D375 · THE SCRIBES

The Met, 20.3.11-SCRIBES. Figures from the same model; writing-board and papyrus detail, material and height.

D376 · IRRIGATION LABOUR TABLET

The Met, 57.16.1. Sealed clay tablet concerning labourers for irrigation work, Umma, ca. 2042 BCE. Image and object identity.

D377 · TURIN STRIKE PAPYRUS

Museo Egizio, Cat. 1880. Amunnakht's account of ration disputes under Ramesses III. The short quotation follows the museum's translation.

D378 · ROCHDALE PIONEERS

Co-operative Heritage Trust, Liz McIvor. Opening goods and rules of the 1844 shop; distinguishes a repeated origin story from evidence.

D379 · OSTROM'S PRIZE LECTURE

Elinor Ostrom, Beyond Markets and States, 2009. Context-dependent institutions, user participation and accountable monitoring.

D380 · OSTROM: LIFE AND CONTRIBUTION

NobelPrize.org. Dates 1933-2012, shared 2009 economics award and research on governance of shared resources.

D381 · OSTROM'S LECTURE SLIDES

Nobel Foundation, 2009. The short warning against panaceas. The modern roster and procedures in this lesson are original proposals.

Historical photographs: The Met Open Access, CC0; policy D373. All example quantities are invented. Sources checked 3 November 2026.

Contents Glossary Index Author 1375

TERMS ON THIS PAGE ca.: Circa (approximately) Before a date, the abbreviation indicates an estimate of when the object was made or the event occurred.

ON THIS PAGE

BCE Before the Common Era · **CC0** Creative Commons Zero, a public-domain dedication tool

BCE: Before the Common Era Dates years before the Common Era in the historical calendar.

CC0, Creative Commons Zero A public-domain dedication by which a rights holder waives rights to the extent legally possible. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

SOURCES FOR SHARED STORES AND FAIR WORK

Object records, a surviving grievance, cooperative history and research on governing shared resources

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Contents Glossary Index Author 1375

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ON THIS PAGE
CC0 Creative Commons Zero, a public-domain dedication tool · **BCE** Before the Common Era

Primary reference register · consulted 3 November 2026 · each source title is a live link

D411 · TimeBanks.Org Terms of service: the equal-hour convention

D412 · Argentina Civil and Commercial Code, arts. 1172-1175

D413 · European Union VAT Directive 2006/112/EC, Article 73

D414 · US Internal Revenue Service Topic 420: Bartering income

D415 · Mercado Central de Buenos Aires Precios mayoristas

D416 · European Commission Agri-food data portal: prices

D417 · USDA Agricultural Marketing Service USDA Market News

D418 · INTI Metrología y calidad

D419 · US Food and Drug Administration Selecting and serving fresh and frozen seafood safely

D420 · NIST Guide to SI, Appendix B: conversion factors

D421 · Argentina, Cultura Interview on the Academia Porteña del Lunfardo

D422 · RAE and ASALE Diccionario de la lengua española: laburo

D423 · RAE and ASALE Diccionario de la lengua española: morfar

D424 · RAE and ASALE Diccionario de la lengua española: fiaca

The numerical exchanges, reserve rule, ledger limits and contract examples are original teaching proposals. No current ARS, EUR or USD price is asserted. D413 is the named 2025 consolidation, not a complete review of later national law. D421 was available as a search excerpt only. The ZeusC sheet is the author-supplied image; its technical claims remain unvalidated.

Contents Glossary Index Author 1404

TERMS ON THIS PAGE VAT: Value-added tax A consumption tax collected in stages. Whether a price includes it affects comparisons.

EC: European Community The suffix identifies the European Community legal instrument in the directive number.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

INTI: Instituto Nacional de Tecnología Industrial Argentina's industrial technology institute. It provides technical and measurement services.

NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references. SI, International System of Units (Système

ON THIS PAGE

VAT Value-added tax · **US** United States · **USDA** United States Department of Agriculture · **INTI** Instituto Nacional de Tecnología Industrial · **NIST** National Institute of Standards and Technology · **SI** Système international d'unités, the International System of Units · **RAE** Real Academia Española · **ASALE** Asociación de Academias de la Lengua Española · **ARS** Argentine peso · **EUR** Euro · **USD** United States dollar · **EC** European Community, in this legal citation

international d’unités) The common measurement system built on units such as the metre, kilogram and second.

RAE: Real Academia Española The Spanish-language academy responsible with partner academies for the cited reference.

ASALE, Asociación de Academias de la Lengua Española The association of Spanish-language academies. ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. EUR: Euro The currency shared by the countries of the euro area.

USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. D + number, Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

D411 · TimeBanks.Org Terms of service: the equal-hour convention

D412 · Argentina Civil and Commercial Code, arts. 1172-1175

https://www.timebanks.org/terms-and-conditions

https://www.argentina.gob.ar/normativa/nacional/norma-235975/actualizacion

D413 · European Union VAT Directive 2006/112/EC, Article 73

https://www.argentina.gob.ar/normativa/nacional/norma-235975/actualizacion

https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:02006L0112-20250320

D418 · INTI Metrología y calidad

D419 · US Food and Drug Administration Selecting and serving fresh and frozen seafood safely

https://www.inti.gob.ar/areas/metrologia-y-calidad/informacion-general

https://www.fda.gov/food/buy-store-serve-safe-food/selecting-and-serving-fresh-and-frozen-seafood-safely

D420 · NIST Guide to SI, Appendix B: conversion factors

https://www.fda.gov/food/buy-store-serve-safe-food/selecting-and-serving-fresh-and-frozen-seafood-safely

https://www.nist.gov/pml/special-publication-811/nist-guide-si-appendix-b-conversion-factors

D412 · Argentina Civil and Commercial Code, arts. 1172-1175

D413 · European Union VAT Directive 2006/112/EC, Article 73

D414 · US Internal Revenue Service Topic 420: Bartering income

https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:02006L0112-20250320

https://www.irs.gov/taxtopics/tc420

D419 · US Food and Drug Administration Selecting and serving fresh and frozen seafood safely

D420 · NIST Guide to SI, Appendix B: conversion factors

ON THIS PAGE

SI Système international d’unités, the International System of Units · **VAT** Value-added tax · **INTI** Instituto Nacional de Tecnología Industrial · **US** United States · **NIST** National Institute of Standards and Technology

D421 · Argentina, Cultura Interview on the Academia Porteña del Lunfardo

https://www.nist.gov/pml/special-publication-811/nist-guide-si-appendix-b-conversion-factors

https://www.cultura.gob.ar/un-dia-como-hoy-hace-58-anos-se-fundaba-la-academia-portena-del-lunfar-9923/

D414 · US Internal Revenue Service Topic 420: Bartering income

D415 · Mercado Central de Buenos Aires Precios mayoristas

D416 · European Commission Agri-food data portal: prices

D417 · USDA Agricultural Marketing Service USDA Market News

https://agridata.ec.europa.eu/extensions/DataPortal/prices.html

https://www.ams.usda.gov/market-news

D421 · Argentina, Cultura Interview on the Academia Porteña del Lunfardo

D422 · RAE and ASALE Diccionario de la lengua española: laburo

D423 · RAE and ASALE Diccionario de la lengua española: morfar

D424 · RAE and ASALE Diccionario de la lengua española: fiaca

https://dle.rae.es/morfar

https://dle.rae.es/fiaca

D417 · USDA Agricultural Marketing Service USDA Market News

D424 · RAE and ASALE Diccionario de la lengua española: fiaca

SOURCES FOR MARKS, MAKERS AND METHODS

Primary research, heritage guidance and identified photographs · checked 3 November 2026

D382 · Scottish recording guide

SSMRP, February 2023. Context, orientation, visible limits, scale and survey records.

D383 · Historic England: types of marks

Assembly marks, timber numbering and distinctions from interpretations of protective marks.

D384 · Wallace: Leaving a mark on history

Iain Ross Wallace, MRes, University of Glasgow, catalogue 2020. Table 26, p. 87: occurrences and limits of identifying one mason across sites.

D385 · Greig: Stonemasons' marks

Moira Greig, Tayside and Fife Archaeological Journal 26 (2020), pp. 35-53. William Scott and unresolved mark attribution, p. 46.

D386 · Black Abbey photograph

A.-K.D., 19 April 2025. Kilkenny stone mark. Source includes the yellow annotation; CC BY-SA 4.0.

ON THIS PAGE

US United States · **USDA** United States Department of Agriculture · **RAE** Real Academia Española · **ASALE** Asociación de Academias de la Lengua Española · **BY-SA** Creative Commons Attribution-ShareAlike

D387 · Glasgow Cathedral photograph

A.-K.D., 19 June 2025. Mark, stone tooling and ruler; CC BY-SA 4.0. No millimetre measurement inferred here.

D388 · The Masons' Company

Company history: regulation in 1356, arms in 1472, royal charter in 1677. These records do not identify the photographed cutters.

D386-D387 photographs by A.-K.D., CC BY-SA 4.0. Original image bytes retained; Glasgow displayed in its EXIF orientation. The Black Abbey source already contains the yellow circle. No identity or date has been invented for either cutter.

Image licence: creativecommons.org/licenses/by-sa/4.0

Contents Glossary Index Author 1381

TERMS ON THIS PAGE SSMRP: Scottish Stonemasons' Marks Research Project The project documenting marks cut by stoneworkers and publishing the cited field-survey guide.

CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a EXIF, Exchangeable image file format

CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. EXIF, Exchangeable image file format The metadata convention that can store camera settings, dates and location in a photograph.

MRes: Master of Research A postgraduate research qualification appearing in a credential.

CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. EXIF, Exchangeable image file format The metadata convention that can store camera settings, dates and location in a photograph. SVGs, Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its D + number, Book evidence record

SOURCES FOR MARKS, MAKERS AND METHODS

Primary research, heritage guidance and identified photographs · checked 3 November 2026

D382 · Scottish recording guide

SSMRP, February 2023. Context, orientation, visible limits, scale and survey records.

D383 · Historic England: types of marks

Assembly marks, timber numbering and distinctions from interpretations of protective marks.

D384 · Wallace: Leaving a mark on history

Iain Ross Wallace, MRes, University of Glasgow, catalogue 2020. Table 26, p. 87: occurrences and limits of identifying one mason across sites.

D385 · Greig: Stonemasons' marks

Moira Greig, Tayside and Fife Archaeological Journal 26 (2020), pp. 35-53. William Scott and unresolved mark attribution, p. 46.

D386 · Black Abbey photograph

ON THIS PAGE

BY-SA Creative Commons Attribution-ShareAlike · **EXIF** Exchangeable image file format

A.-K.D., 19 April 2025. Kilkenny stone mark. Source includes the yellow annotation; CC BY-SA 4.0.

D387 · Glasgow Cathedral photograph

A.-K.D., 19 June 2025. Mark, stone tooling and ruler; CC BY-SA 4.0. No millimetre measurement inferred here.

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CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. EXIF, Exchangeable image file format The metadata convention that can store camera settings, dates and location in a photograph. SVGs, Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked

CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. EXIF, Exchangeable image file format The metadata convention that can store camera settings, dates and location in a photograph. SVGs, Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TEACHING SOURCES, LIMITS AND A SECOND CLUE

1 EVIDENCE 2 MECHANISM 3 PRACTICE 4 CHECK

D399 · THE HISTORICAL DOCUMENT

War Manpower Commission, Training Within Industry, Job Instructor Training, 1942. The July letter is signed by C. R. Dooley. Printed pages 10-11 set out the four steps. Cover and printed page 11 are reproduced from the GovInfo copy. The manual is a US government public-domain work.

D400 · THE CONTINUING METHOD

D402 · MEASUREMENT LANGUAGE

NIST Technical Note 1297, Appendix D1. Repeatability, accuracy and uncertainty are distinct. The three-trial range is a calculation from invented data, not a calibrated uncertainty statement.

BETWEEN THE LINES · 02

ON THIS PAGE

BY-SA Creative Commons Attribution-ShareAlike · **EXIF** Exchangeable image file format · **US** United States · **NIST** National Institute of Standards and Technology

Use the same first-letter rule. A second four-letter verb follows the first.

Trace the edge used as the origin.

Explain why the rim is excluded.

State the result with its unit.

Try again from the record.

The two answers have a deliberate order. The key at PZ1 explains them.

Contents Glossary Index Author 1388

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D402 · MEASUREMENT LANGUAGE

Sources & Evidence Limits

Reading references 1-6 of 23

TR01 USCCB Exodus 3, especially verse 14 and its notes Hebrew divine-name context; no support for English-letter numerology.

TR02 Agrippa / publisher excerpt Three Books of Occult Philosophy, Book II, chapter 22 Historical Saturn table, sum 15 and total 45. Magical efficacy is a historical claim, not established performance.

TR03 United States Holocaust Memorial Museum History of the Swastika Earlier uses and Nazi appropriation; does not identify the four uploaded objects.

TR04 Museum of Freemasonry What does the freemason symbol mean? Square and compasses as tools and moral emblems; no basis for the collage's alleged equivalence.

TR05 Ashmolean Museum / Andrew Shapland Myths of the Labyrinth Documented Knossian coin labyrinth compared with literary maze traditions.

TR06 Smithsonian National Museum of Asian Art Bowl with eight trigrams, F1995.8 Museum object and description of taiji, yin and yang; no attribution of the uploaded graphic.

BOOK VII · TERRA REALM · IMAGE 14 SERIES

TR-S26 Image index Terra Realm 121 Sources

TR05 Ashmolean Museum / Andrew Shapland Myths of the Labyrinth Documented Knossian coin labyrinth compared with literary maze traditions.

TR06 Smithsonian National Museum of Asian Art Bowl with eight trigrams, F1995.8 Museum object and description of taiji, yin and yang; no attribution of the uploaded graphic.

ON THIS PAGE

USCCB United States Conference of Catholic Bishops

TERMS ON THIS PAGE USCCB: United States Conference of Catholic Bishops The institution responsible for the cited religious text or translation.

Reading references 7-12 of 23

TR-S27 Image index Terra Realm 121 Sources

TR07 NOAA National Ocean Service Is the Earth round? Measured irregular ellipsoid and geodesy.

TR08 NASA Science Moonlight Moonlight is reflected sunlight; distinguishes artwork from an astronomical model.

TR09 Ling, Sanny & Moebs / OpenStax University Physics Vol. 3, 1.5 Dispersion Wavelength-dependent refraction and the separation of colours by a prism.

TR10 National Eye Institute How the Eyes Work Cornea, pupil, iris, lens, retina, photoreceptors and optic nerve.

TR11 Jain et al., IOVS 2015 Nerve fiber orientations in the human optic chiasm Original photomicrographic study; nasal fibres cross, temporal fibres remain ipsilateral. Crossing geometry is more complex than a central X. DOI 10.1167/iovs.15-17443.

TR12 NASA Science Types of Solar Eclipses Sun-Moon-Earth alignment and total/partial shadow conditions.

TERMS ON THIS PAGE NOAA: National Oceanic and Atmospheric Administration The United States agency supplying ocean, weather and climate records.

NASA, National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here. et al., Et alii, et aliae or et alia (and others) In a citation, the expression indicates additional authors whose names are omitted from the shortened reference.

IOVS: Investigative Ophthalmology & Visual Science The journal named in the vision-research citation.

DOI: Digital object identifier A stable identifier used to find a publication or other registered work.

TR09 Ling, Sanny & Moebs / OpenStax University Physics Vol. 3, 1.5 Dispersion Wavelength-dependent refraction and the separation of colours by a prism.

https://science.nasa.gov/moon/moonlight/

https://openstax.org/books/university-physics-volume-3/pages/1-5-dispersion

TR10 National Eye Institute How the Eyes Work Cornea, pupil, iris, lens, retina, photoreceptors and optic nerve.

https://openstax.org/books/university-physics-volume-3/pages/1-5-dispersion

https://www.nei.nih.gov/eye-health-information/healthy-vision/how-eyes-work

TR11 Jain et al., IOVS 2015 Nerve fiber orientations in the human optic chiasm Original photomicrographic study; nasal fibres cross, temporal fibres remain ipsilateral. Crossing geometry is more complex than a central X. DOI 10.1167/iovs.15-17443.

https://www.nei.nih.gov/eye-health-information/healthy-vision/how-eyes-work

https://pubmed.ncbi.nlm.nih.gov/26567784/

ON THIS PAGE

NOAA National Oceanic and Atmospheric Administration · **NASA** National Aeronautics and Space Administration · **IOVS** Investigative Ophthalmology & Visual Science · **DOI** Digital object identifier

TR12 NASA Science Types of Solar Eclipses Sun-Moon-Earth alignment and total/partial shadow conditions.

https://pubmed.ncbi.nlm.nih.gov/26567784/

https://science.nasa.gov/eclipses/types/

Reading references 13-18 of 23

TR13 NASA Science Anatomy of a Black Hole Event horizon, surrounding matter and limits of singularity interpretation.

TR14 Swinton, Ochu & the MSI Turing's Sunflowers Consortium Fibonacci and non-Fibonacci structure in the sunflower, 2016 Original study. Search-index abstract establishes both kinds of pattern; full article retrieval was blocked. No plant in the collage identified from it.

TR15 Spain, Ministry of Culture / CER.es Sri Yantra, inventory CE1998/7/6 Indexed museum description of nine interlocking triangles and paired symbolism. Full catalogue returned HTTP 429. Does not authenticate the uploaded object.

TR16 ATLAS Collaboration / CERN Proton scattering when light turns into matter, 2020 Experiment report on photon interactions and particle-antiparticle production; no endorsement of the collage.

TR17 Ling, Moebs & Sanny / OpenStax University Physics Vol. 2, 5.1 Electric Charge Electric charge and the positive/negative sign convention.

TR18 Ling, Moebs & Sanny / OpenStax University Physics Vol. 2, 16.2 Plane Electromagnetic Waves Electric/magnetic components, propagation and the need to define field diagrams.

TR-S28 Image index Terra Realm 121 Sources

TR16 ATLAS Collaboration / CERN Proton scattering when light turns into matter, 2020 Experiment report on photon interactions and particle-antiparticle production; no endorsement of the collage.

TR17 Ling, Moebs & Sanny / OpenStax University Physics Vol. 2, 5.1 Electric Charge Electric charge and the positive/negative sign convention.

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TERMS ON THIS PAGE NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

MSI: Museum of Science and Industry, Manchester The museum associated with the Turing's Sunflowers citizen-science project on seed-head patterns.

CER.es: Red Digital de Colecciones de Museos de España Spain's digital museum collections portal.

HTTP: Hypertext Transfer Protocol The protocol for transferring web resources between a client and a server.

CERN: Organisation européenne pour la recherche nucléaire The European particle-physics laboratory. CERN comes from its original provisional council, Conseil européen pour la recherche nucléaire.

TR-S28 Image index Terra Realm 121 Sources

ON THIS PAGE

NASA National Aeronautics and Space Administration · **MSI** Museum of Science and Industry, Manchester · **HTTP** Hypertext Transfer Protocol · **CERN** European Organization for Nuclear Research; its acronym comes from the historical French Conseil européen pour la recherche nucléaire

TR16 ATLAS Collaboration / CERN Proton scattering when light turns into matter, 2020 Experiment report on photon interactions and particle-antiparticle production; no endorsement of the collage.

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TR18 Ling, Moebs & Sanny / OpenStax University Physics Vol. 2, 16.2 Plane Electromagnetic Waves Electric/magnetic components, propagation and the need to define field diagrams.

https://openstax.org/books/university-physics-volume-2/pages/5-1-electric-charge

https://openstax.org/books/university-physics-volume-2/pages/16-2-plane-electromagnetic-waves

Sources & Evidence Limits

Reading references 19-23 of 23

TR-S29 Image index Terra Realm 121 Sources

TR19 Joe Wolfe / UNSW Physics Note names, MIDI numbers and frequencies Twelve-tone equal temperament, 2:1 octave and optional A4 = 440 Hz reference.

TR20 Moebs, Ling & Sanny / OpenStax University Physics Vol. 1, 17.1 Sound Waves Mechanical sound in air; pressure disturbance and distinction from hearing.

TR21 NASA/JPL Solar System Dynamics Horizons System documentation Bodies, centres, time scales, reference frames and output quantities. No actual ephemeris for the uploaded patterns was supplied or generated.

TR22 Walter Russell / Library of Congress catalogue The Universal One, 1926 Catalogue year/author and indexed Cosmic Pendulum plate title. Exact uploaded derivative and colouring remain unauthenticated. Catalogue/PDF retrieval returned 403 or tool errors. TR23 Moebs, Ling & Sanny / OpenStax University Physics Vol. 1, 15.4 Pendulums Small-angle ideal pendulum equation and measurement of pivot-to-centre length. New chosen values and original drawing.

https://www.loc.gov/item/27004508/

https://openstax.org/books/university-physics-volume-1/pages/15-4-pendulums

every component. The notes and four worked diagrams are newly written; none supplies missing text from a cropped source.

BOOK VII · TERRA REALM · IMAGE 14 SERIES

TERMS ON THIS PAGE UNSW: University of New South Wales The Australian university credited with the cited research.

ON THIS PAGE

CERN European Organization for Nuclear Research; its acronym comes from the historical French Conseil européen pour la recherche nucléaire · **Hz** hertz, cycles per second · **=** equals

MIDI, Musical Instrument Digital Interface A protocol that communicates musical instructions and controller data between devices. Hz, Hertz Frequency in cycles per second. NASA, National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here. JPL, Jet Propulsion Laboratory The NASA laboratory responsible for the Horizons solar-system ephemeris service.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

TR19 Joe Wolfe / UNSW Physics Note names, MIDI numbers and frequencies Twelve-tone equal temperament, 2:1 octave and optional A4 = 440 Hz reference.

TR20 Moebs, Ling & Sanny / OpenStax University Physics Vol. 1, 17.1 Sound Waves Mechanical sound in air; pressure disturbance and distinction from hearing.

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https://ssd.jpl.nasa.gov/horizons/manual.html

https://www.loc.gov/item/27004508/

Sources And Provenance

R1 · DOE: How Hydropower Works

www.energy.gov

A BILLIONAIRE GUIDE BOOK TO REBUILDING CIVILIZATION FROM SCRATCH

R1 · DOE: How Hydropower Works

www.energy.gov

R2 · USGS: Desalination

www.usgs.gov

R3 · UMN: Deep winter greenhouses

extension.umn.edu

R4 · UMN: Preventing poultry heat stress

extension.umn.edu

R5 · OSHA: Permit-required confined spaces

www.osha.gov

ON THIS PAGE

JPL Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA · **Hz** hertz, cycles per second · **=** equals · **DOE** Department of Energy · **USGS** United States Geological Survey · **UMN** University of Minnesota

R6 · DOE: Generating Light from Darkness

www.energy.gov

HISTORICAL CONTEXT

Jethro Tull designed a seed drill in 1701 and described developed machinery in 1733. The Science Museum's surviving model was made by H. Agutter in 1955. The date of the model is different from the date of the design.

Original source plates remain uncropped. D425-D479 add historical objects and current technical records; the recovery package includes every URL and claim mapping.

D432 · Tull

Analytical drawing. Example quantities are labelled; geometry is not a site survey.

ORIGINAL IMAGE Archive + asset identity

HISTORICAL OBJECT Catalogue + object date

NEW SVG Analytical explanation

TEST RECORD Observed performance

Read each record in its role. A proposal, historical object and measured result are distinct.

TERMS ON THIS PAGE DOE: Department of Energy The United States government department responsible for the energy reference cited here.

USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

UMN: University of Minnesota The United States university credited with the extension or research material.

URL: Uniform resource locator The web address that leads to a source or record.

SVG, Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp. PDF, Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

A BILLIONAIRE GUIDE BOOK TO REBUILDING CIVILIZATION FROM SCRATCH

R1 · DOE: How Hydropower Works

www.energy.gov

R2 · USGS: Desalination

www.usgs.gov

R3 · UMN: Deep winter greenhouses

extension.umn.edu

ON THIS PAGE

DOE Department of Energy · **URL** Uniform Resource Locator · **SVG** Scalable Vector Graphics · **USGS** United States Geological Survey · **UMN** University of Minnesota

R4 · UMN: Preventing poultry heat stress

extension.umn.edu

R5 · OSHA: Permit-required confined spaces

www.osha.gov

R6 · DOE: Generating Light from Darkness

www.energy.gov

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Jethro Tull designed a seed drill in 1701 and described developed machinery in 1733. The Science Museum's surviving model was made by H. Agutter in 1955. The date of the model is different from the date of the design.

Original source plates remain uncropped. D425-D479 add historical objects and current technical records; the recovery package includes every URL and claim mapping.

D432 · Tull

Architectural References And ZeusC Sheets

A BILLIONAIRE GUIDE BOOK TO REBUILDING CIVILIZATION FROM SCRATCH

Current original archive

structure images, 24 project/model images and 51 building/reference images. Preserve its filenames in the source register.

Architectural groups Building references include CopenHill, Jewel Changi, SkyPark, a pavilion/gazebo group and other structural and masterplan images. These are different authors and projects. Do not assign every image to ZeusC.

Credits and cropping Retain complete rectangular sheets, borders, title blocks, written dimensions and visible credits. The ZeusC structure set remains intact. Where a sheet has another author or attribution, retain that attribution.

Design use A published reference may illustrate a structural concept without supplying permission or sufficient data to construct it elsewhere. Treat source geometry, proposed adaptation and validated design as separate records.

HISTORICAL CONTEXT

D461 · Jewel

Analytical drawing. Example quantities are labelled; geometry is not a site survey.

ZeusC Named supplied sheets

Jewel Changi Operator project account

CopenHill BIG project account

NEW DIAGRAM Interpretation in this book

ON THIS PAGE

UMN University of Minnesota · **DOE** Department of Energy · **URL** Uniform Resource Locator · **BIG** Bjarke Ingels Group, the architectural practice

Read each record in its role. A proposal, historical object and measured result are distinct.

TERMS ON THIS PAGE PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Research References 1

A BILLIONAIRE GUIDE BOOK TO REBUILDING CIVILIZATION FROM SCRATCH

A1 · Bischoff, Santo Pipó listing 10395436

bischoffinmobiliaria.com

A2 · Götz, Colonia Lanusse listing 5762329

gotzinmobiliaria.com.ar

A3 · Zonaprop, Colón 10 ha, two wells

www.zonaprop.com.ar

A4 · Antón, Route 71 Trevelin 5 ha

antonpatagonia.com

A5 · Argentina, Sistema Acuífero Guaraní

www.argentina.gob.ar

A6 · IGN, geology and hydrogeology of the Guaraní system

www.ign.gob.ar

EVIDENCE AND LIMITS

Keep the source purpose attached to the claim: a seller description, a legal text, technical guidance and a property test are different evidence. A source address is not a certificate for a particular site. Inherited source destinations are retained. Historical comparisons and new calculations are separately identified in D425-D479.

Analytical drawing. Example quantities are labelled; geometry is not a site survey.

SELLER RECORD Dated claim, not certification

LEGAL TEXT Jurisdiction + actual use

TECHNICAL SOURCE Process and equipment limits

FIELD EVIDENCE Parcel-specific tests

Read each record in its role. A proposal, historical object and measured result are distinct.

ON THIS PAGE

ha hectare, 10,000 square metres · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute

TERMS ON THIS PAGE ha: Hectare A unit of area equal to 10,000 square metres.

IGN, Instituto Geográfico Nacional Argentina's national mapping agency and the source for the cartographic or survey reference. PDF, Portable Document Format A file format used to preserve the layout of a document when it is shared or printed. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Research References 1

A1 · Bischoff, Santo Pipó listing 10395436

A2 · Götz, Colonia Lanusse listing 5762329

A3 · Zonaprop, Colón 10 ha, two wells

A4 · Antón, Route 71 Trevelin 5 ha

A5 · Argentina, Sistema Acuífero Guaraní

A6 · IGN, geology and hydrogeology of the Guaraní system

Research References 2

A BILLIONAIRE GUIDE BOOK TO REBUILDING CIVILIZATION FROM SCRATCH

A7 · Civil and Commercial Code, Articles 235-239

www.argentina.gob.ar

A8 · Entre Ríos, Law 9172, FAO legal repository

faolex.fao.org

A9 · ITBA, arsenic mapping and sampling project

www.itba.edu.ar

A10 · Argentina, Misiones native-forest territorial zoning

www.argentina.gob.ar

A11 · Trevelin, Route 71 fire-evacuation meetings

www.trevelin.gob.ar

A12 · USGS, aquifer-test records and documentation

water.usgs.gov

EVIDENCE AND LIMITS

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Analytical drawing. Example quantities are labelled; geometry is not a site survey.

ON THIS PAGE

IGN Instituto Geográfico Nacional, Argentina's national geographic institute · **ha** hectare, 10,000 square metres · **FAO** Food and Agriculture Organization of the United Nations · **ITBA** Instituto Tecnológico de Buenos Aires · **USGS** United States Geological Survey

SELLER RECORD Dated claim, not certification

LEGAL TEXT Jurisdiction + actual use

TECHNICAL SOURCE Process and equipment limits

FIELD EVIDENCE Parcel-specific tests

Read each record in its role. A proposal, historical object and measured result are distinct.

TERMS ON THIS PAGE FAO: Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference.

ITBA: Instituto Tecnológico de Buenos Aires The Argentine university credited for the technical research.

USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Research References 3

A BILLIONAIRE GUIDE BOOK TO REBUILDING CIVILIZATION FROM SCRATCH

A13 · USGS Circular 1376, pumping and streamflow

pubs.usgs.gov

A14 · USGS, Ground Water and the Rural Homeowner

pubs.usgs.gov

A15 · SMI, Latitude90 equipment specifications

www.snowmakers.com

A16 · Neveplast, ALLRIDE and FREESTYLE surfaces

www.neveplast.it

A17 · ASHRAE Refrigeration, Ice Rinks; related cold-facility principles

handbook.ashrae.org

A18 · CORUFA, Entre Ríos water-use procedures

portal.entrerios.gov.ar

EVIDENCE AND LIMITS

Keep the source purpose attached to the claim: a seller description, a legal text, technical guidance and a property test are different evidence. A source address is not a certificate for a particular site. Inherited source destinations are retained. Historical comparisons and new calculations are separately identified in D425-D479.

Analytical drawing. Example quantities are labelled; geometry is not a site survey.

ON THIS PAGE

USGS United States Geological Survey · **CORUFA** Consejo Regulador del Uso de Fuentes de Agua

SELLER RECORD Dated claim, not certification

LEGAL TEXT Jurisdiction + actual use

TECHNICAL SOURCE Process and equipment limits

FIELD EVIDENCE Parcel-specific tests

Read each record in its role. A proposal, historical object and measured result are distinct.

TERMS ON THIS PAGE USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

SMI: Snow Machines, Inc. The equipment manufacturer named in the Latitude90 snowmaking reference.

ASHRAE, American Society of Heating, Refrigerating and Air-Conditioning Engineers The technical society responsible for the refrigeration and building-services reference. CORUFA, Consejo Regulador del Uso de Fuentes de Agua The Entre Ríos council responsible for the use of water sources.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Research References 3

A13 · USGS Circular 1376, pumping and streamflow

A14 · USGS, Ground Water and the Rural Homeowner

A15 · SMI, Latitude90 equipment specifications

A16 · Neveplast, ALLRIDE and FREESTYLE surfaces

A17 · ASHRAE Refrigeration, Ice Rinks; related cold-facility principles

A18 · CORUFA, Entre Ríos water-use procedures

Sources And Next Design Decisions

References L1: CDC, Collecting Rainwater and Your Health. L2: Textron Aviation, Cessna Skyhawk. L3: FAA, Become a Pilot. L4: FAA, Airplane Flying Handbook, Night Operations. L5: Argentina Fly, What Are Empty Legs. L6: TechnoAlpin, SnowFactory.

Source images

associated source register retains filenames and hashes.

Before a measured drawing Confirm site, occupancy, survey, ground conditions, water tests, intended use and equipment. Establish a design basis and versioned component schedule. Resolve all unknown dimensions before fabrication.

Analytical drawing. Example quantities are labelled; geometry is not a site survey.

INSPECT Condition + place + date

ON THIS PAGE

USGS United States Geological Survey · **CORUFA** Consejo Regulador del Uso de Fuentes de Agua · **FAA** Federal Aviation Administration

ISOLATE Documented safe state

REPAIR Part identity + revision

A BILLIONAIRE GUIDE BOOK TO REBUILDING CIVILIZATION FROM SCRATCH

HISTORICAL CONTEXT

D459 · Barn

RETURN Measured service restored

Read each record in its role. A proposal, historical object and measured result are distinct.

TERMS ON THIS PAGE CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

FAA, Federal Aviation Administration The United States civil aviation authority credited with the handbook or technical figure. PDF, Portable Document Format A file format used to preserve the layout of a document when it is shared or printed. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

SOURCES AND EVIDENCE LIMITS

Primary references checked 19 October 2026 | Editorial assumptions remain separate

1172 Guide Methods Cost basis Compare

B1: NAHB, COST OF CONSTRUCTING A HOME 2024

20 January 2025. Table 1: $428,215 construction cost and 2,647 ft2, about $162/ft2. Forty-one usable builder responses. National sample, not an estate or Argentina quotation.

https://www.nahb.org/-/media/NAHB/news-and-economics/docs/housing-economics-plus/special-studies/2025/special-study-cost-of-constructing-a-home-2024-january-2025.pdf

B2: US DOE, SOLAR PHOTOVOLTAIC SYSTEM COST BENCHMARKS

2025 Q1 benchmarks in 2024 USD. PV-only modeled market price: commercial $1.98/Wdc; residential $2.95/Wdc. The PV-plus-storage table and prose disagree on commercial storage size, so that combination is not used here.

https://www.energy.gov/cmei/systems/solar-photovoltaic-system-cost-benchmarks

B3: US FIRE ADMINISTRATION, BEFORE A WUI FIRE

Reviewed 21 September 2026. Supports defensible-space and evacuation planning. Local site constraints still require assessment.

https://www.usfa.fema.gov/wui/outreach/before-wui-fire.html

B4: CDC, GUIDELINES FOR TESTING WELL WATER

Private-well testing guidance. Water appearance and a well label do not establish safety or sustainable yield.

https://www.cdc.gov/drinking-water/safety/guidelines-for-testing-well-water.html

B5: US EPA, HOW TO CARE FOR YOUR SEPTIC SYSTEM

ON THIS PAGE

NAHB National Association of Home Builders, United States · **US** United States · **DOE** Department of Energy · **USD** United States dollar · **EPA** Environmental Protection Agency, United States

Updated 17 August 2026. Household inspection and pumping guidance; protect the drainfield from traffic and inappropriate planting. Estate system design remains local.

https://www.epa.gov/septic/how-care-your-septic-system

The numbered features are transcribed or visually observed from the user-supplied concepts embedded in the verified reading PDF. Original source names run from to in . Original full-resolution files and site-specific engineering remain separate verification tasks.

TERMS ON THIS PAGE NAHB: National Association of Home Builders The United States building industry association cited in the housing source.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

DOE: Department of Energy The United States government department responsible for the energy reference cited here.

USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

PV: Photovoltaic Describes a cell or system that converts incoming light into electrical energy.

WUI, Wildland-urban interface The area where buildings and other human development meet or intermingle with wildland vegetation. CDC, Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

SOURCES AND EVIDENCE LIMITS

Primary references checked 19 October 2026 | Editorial assumptions remain separate

1172 Guide Methods Cost basis Compare

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PDF Portable Document Format · **NAHB** National Association of Home Builders, United States · **US** United States · **DOE** Department of Energy · **USD** United States dollar

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Updated 17 August 2026. Household inspection and pumping guidance; protect the drainfield from traffic and inappropriate planting. Estate system design remains local.

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US United States · **EPA** Environmental Protection Agency, United States · **PDF** Portable Document Format · **NAHB** National Association of Home Builders, United States · **USD** United States dollar

EPA: Environmental Protection Agency The United States environmental authority responsible for the cited material.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

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1173 Guide Methods Cost basis Compare

B6: USDA NRCS, PONDS: PLANNING, DESIGN, CONSTRUCTION, AH 590

Planning reference for site, water, soil and downstream considerations. Not a site-specific dam or pond specification.

https://www.nrcs.usda.gov/sites/default/files/2023-05/NRCS%20Agricultural%20Handbook%20590.pdf

B7: FAA, AC 150/5300-13B AIRPORT DESIGN, CHANGE 1

Current landing page includes Change 1 and errata as of 3 April 2025. US reference, not approval for a private airfield or an Argentine site.

https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1040834

B8: PENN STATE, LESSON 13: GREENHOUSE STRUCTURES

Supports attention to climate, drainage, utilities, access and crop needs. No ancient-origin or universal production claim is adopted.

https://courses.worldcampus.psu.edu/welcome/hort101/print.html

B9: PENN STATE EXTENSION, HORSE STABLE MANURE MANAGEMENT

Official search excerpt confirms separate manure-handling options. Full page could not be opened in this check; no numerical setback or design specification is taken from it.

https://extension.psu.edu/horse-stable-manure-management

B10: CDC, GUIDELINES FOR KEEPING YOUR POOL SAFE AND HEALTHY

Pool barriers, responsible operation and chemical safety. No chemical dose or local approval is supplied by the estate concept.

https://www.cdc.gov/healthy-swimming/safety/what-you-can-do-to-stay-healthy-in-swimming-pools.html

TERMS ON THIS PAGE USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

NRCS: Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information.

ON THIS PAGE

EPA Environmental Protection Agency, United States · **PDF** Portable Document Format · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service · **AH** Anno Hegirae, Islamic calendar year numbering · **FAA** Federal Aviation Administration · **US** United States

AH: Anno Hegirae, the Islamic Hijri calendar Counts lunar years from the era of the Hijra. A Hijri year can overlap two Common Era years.

FAA: Federal Aviation Administration The United States civil aviation authority credited with the handbook or technical figure.

AC, Alternating current Electric current that repeatedly reverses direction. US, United States of America Identifies the country or jurisdiction of the source, price or institution. CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

Planning reference for site, water, soil and downstream considerations. Not a site-specific dam or pond specification.

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B8: PENN STATE, LESSON 13: GREENHOUSE STRUCTURES

B9: PENN STATE EXTENSION, HORSE STABLE MANURE MANAGEMENT

B10: CDC, GUIDELINES FOR KEEPING YOUR POOL SAFE AND HEALTHY

The numbered features are transcribed or visually observed from the user-supplied concepts embedded in the verified reading PDF. Original source names run from to in . Original full-resolution files and site-specific engineering remain separate verification tasks.

B11: BUENOS AIRES PROVINCE, WATER CODE, LAW 12,257

Article 85 addresses permission and hydrogeological documentation for new groundwater exploitation. Applicability is provincial, not all Argentina. Current procedures and site permission remain to be checked.

https://www.argentina.gob.ar/normativa/provincial/ley-12257-123456789-0abc-defg-752-2100bvorpyel/actualizacion

B12: FAA, AC 150/5390-2D HELIPORT DESIGN

5 January 2023. Heliport planning and design reference. A painted landing mark is not evidence of a compliant facility.

https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/150_5390-2D

B13: BLS, GROUNDS MAINTENANCE WORKERS

Current page reports median $19.27/hour in May 2025. At an assumed 2,080 paid hours this is about $40,082 before employer costs. It is not a private-estate staffing quote.

ON THIS PAGE

AH Anno Hegirae, Islamic calendar year numbering · **US** United States · **PDF** Portable Document Format · **FAA** Federal Aviation Administration · **BLS** Bureau of Labor Statistics, United States

https://www.bls.gov/ooh/building-and-grounds-cleaning/grounds-maintenance-workers.htm

B14: TECHNOALPIN, SNOWFACTORY

Manufacturer describes mechanically refrigerated snow production. Model, duty, water temperature, heat rejection and the building loads must be specified separately; no whole-dome power is inferred.

https://www.technoalpin.com/en-us/snow-guns/snowfactory/

The numbered features are transcribed or visually observed from the user-supplied concepts embedded in the verified reading PDF. Original source names run from to in

1174 Guide Methods Cost basis Compare

TERMS ON THIS PAGE FAA: Federal Aviation Administration The United States civil aviation authority credited with the handbook or technical figure.

AC: Alternating current Electric current that repeatedly reverses direction.

BLS, Bureau of Labor Statistics The United States agency publishing the employment or wage statistic. PDF, Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

1174 Guide Methods Cost basis Compare

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TERMS ON THIS PAGE FAA: Federal Aviation Administration The United States civil aviation authority credited with the handbook or technical figure.

ARGENTINA AND AVIATION: SOURCES 1/3

Primary records and broker advertisements | Retrieved 19 October 2026

ARGENTINA GUIDE ESTATE ATLAS SOURCES 1217

AR01 | Banco Nación: dólar billete

Displayed 19 October 2026, 17:01: buying 1,490; selling 1,540 ARS/USD. The supplement chooses the selling quotation, not the separate divisas table. Open source

AR02 | Estudio Inmobiliario JM: Aero Country Club

EHO9454461. USD 380,000; 1,000 m² plot; advertised hangar and runway access. Area, age and frontage fields conflict. Open source

AR03 | Inmobiliaria Baez: casa hangar

Code 1-265. USD 240,000; 1,000 m² plot; approximately 200 m² house plus 165 m² hangar. Direct runway access is advertised. Open source

AR04 | Yacoub: De La Garma, Ruta 75

YCS6573951. USD 400,000; approximately 50 ha, including 46 ha described as agricultural. Runway and hangar claims are not operational approval. Open source

ON THIS PAGE

PDF Portable Document Format · **BLS** Bureau of Labor Statistics, United States · **USD** United States dollar · **m²** square metre, an area unit · **ha** hectare, 10,000 square metres

AR05 | Villa Propiedades: San Miguel del Monte

VC-CampoSM1. USD 180,000. Prose says 11 ha, while a field says 11,000 m². No verified area or price per hectare is inferred. Open source

AR06 | Blasco-Fotheringham: 44 ha, Calamuchita

Ref. 69088. USD 165,000; 44 ha. No buildings or installed services are stated. Water and electricity fields say no. Open source

Read the dated price and method limits on the page where each source is used.

TERMS ON THIS PAGE ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

ha: Hectare A unit of area equal to 10,000 square metres.

ARGENTINA AND AVIATION: SOURCES 1/3

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ARGENTINA AND AVIATION: SOURCES 2/3

ARGENTINA GUIDE ESTATE ATLAS SOURCES 1218

AR07 | Río Azul Patagonia: El Hoyo, RN 40

ON THIS PAGE

USD United States dollar · **m²** square metre, an area unit · **ha** hectare, 10,000 square metres · **RN** Ruta Nacional

Ref. 187. USD 250,000 for advertised 5 ha. Available services are a seller claim, not a connection or capacity certificate. Open source

AR08 | Contacto Propiedades: La Primavera, Tunuyán

ID 6026. USD 390,000; 17 ha + 8,746.01 m². House, machinery shed, fruit planting and irrigation rights advertised. No well is stated. Open source

AR09 | Catibi: Villa de Miguel, Dina Huapi

CATIBI-234196 / CLA4975547. USD 95,000; 1,112.15 m². Pedestrian lake access, not private shoreline. Listing updated 1 October 2026. Open source

AR10 | ANAC: aerodrome and obstacle procedures

Separate procedures cover aerodromes, LAD registration, objects near/inside aerodromes, night operation and modifications. No listed property was matched to an approval record. Open source

AR11 | Pilatus: PC-12 NGX factsheet, PIL1219E

Page 2 drawing visually checked: span 16.28 m, length 14.40 m, height 4.26 m. The 4.53 m dimension is landing-gear spacing. NGX reference, not the newer PRO. Open source

AR12 | Singapore MINDEF: F-35A fact sheet

28 February 2024. Length 15.7 m, height 4.38 m, span 10.7 m; F135-PW-100 engine. A variant has no B-variant lift fan. Does not authenticate the supplied cutaway. Open source

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TERMS ON THIS PAGE RN: Ruta Nacional An Argentine national highway. The following number identifies the route.

ON THIS PAGE

USD United States dollar · **ha** hectare, 10,000 square metres · **m²** square metre, an area unit · **ANAC** Administración Nacional de Aviación Civil, Argentina · **LAD** Lugar Apto Denunciado · **m** metre, a length unit

ID, Identifier or identification A label that distinguishes one record, object or sample from another. m^2, Square metre The area of a square with sides one metre long.

ANAC, Administración Nacional de Aviación Civil Argentina's civil aviation authority. LAD, Lugar Apto Denunciado An Argentine civil-aviation designation for a declared

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PC-12 NGX / NGX, Pilatus PC-12 NGX The manufacturer's model and variant designation, used here as a reference for an aircraft comparison. MINDEF, Ministry of Defence Singapore's defence ministry, identified as the source of the cited aircraft information. m: Metre

Page 2 drawing visually checked: span 16.28 m, length 14.40 m, height 4.26 m. The 4.53 m dimension is landing-gear spacing. NGX reference, not the newer PRO. Open source

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ARGENTINA AND AVIATION: SOURCES 3/3

ARGENTINA GUIDE ESTATE ATLAS SOURCES 1219

AR13 | FIA: Formula 1 rules for 2026

17 December 2025 overview. 2026 retains a 1.6 L hybrid and removes MGU-H. Used for broad system/era distinctions, not the latest detailed regulation or fixed power-deployment limits. Open source

AR14 | Mendoza DGI and notarial water records

Official explanation of water-entitlement, restriction and debt checks for transfers. Historical procedural account; its deadlines are not asserted as current. Confirm current procedure with DGI. Open source

AR15 | Departamento General de Irrigación

Current authority entry point for water information and services. No parcel entitlement, delivery volume or borehole yield authenticated here. Open source

AR16 | Plaza: Vista Flores, rejected price

ID 2559-321. Header USD 35,000 conflicts with prose USD 45,000 per hectare. Offered 1-8 ha. Excluded from the priced shortlist until corrected. Open source

ON THIS PAGE

m^2 square metre, an area unit · **ANAC** Administración Nacional de Aviación Civil, Argentina · **USD** United States dollar · **LAD** Lugar Apto Denunciado · **m** metre, a length unit · **FIA** Fédération Internationale de l'Automobile · **L** litre, a volume unit · **DGI** Departamento General de Irrigación · **ha** hectare, 10,000 square metres

Existing book evidence

Batch 50 Estates.json, Component_Costs.csv, Cost_Scenarios.json and Page_Map.json provide the unchanged feature numbers, assumed quantities and USD scenarios. Batch

Broker claims are not surveys or operational approvals. Regional matches and the original SVGs are editorial explanations. All unintegrated ZIP subjects remain in the intake register for topic-specific research; this supplement does not authenticate them.

58 is the verified full-book baseline. Original user images come from data .

TERMS ON THIS PAGE FIA: Fédération Internationale de l'Automobile The international organisation responsible for the cited motorsport rules.

MGU-H: Motor Generator Unit-Heat The earlier Formula One unit coupled to the turbocharger shaft.

DGI: Departamento General de Irrigación The Mendoza authority responsible for irrigation and water administration.

ID: Identifier or identification A label that distinguishes one record, object or sample from another.

USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

ha: Hectare A unit of area equal to 10,000 square metres.

SVGs, Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp. ZIP, ZIP archive format A container used to package files together, often with compression.

L: Litre One cubic decimetre of volume, or one thousand millilitres.

ARGENTINA AND AVIATION: SOURCES 3/3

Primary records and broker advertisements | Retrieved 19 October 2026

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Existing book evidence

HISTORICAL CONTEXT

A 1957 USGS circular describes obtaining measurements from photographs. Such work needs controlled geometry and reference information. A single plant picture without scale or diagnostic views cannot supply those missing observations. Complete rectangular photographs retained. Creator credits and licences apply to the individual photographs; they do not endorse the text.

D471 · Photogrammetry

ON THIS PAGE

USD United States dollar · **ha** hectare, 10,000 square metres · **L** litre, a volume unit · **DGI** Departamento General de Irrigación · **USGS** United States Geological Survey

MISSING VIEWS No complete identification key

Read each record in its role. A proposal, historical object and measured result are distinct.

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USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

HOUSEHOLD SYSTEMS: SOURCES AND LIMITS

References checked 19 October 2026 | Original explanatory diagrams for PDF 39-50

D5 | Driver and screw fit CCOHS, Hand Tools: Screwdrivers Match the drive type and tip size; align the shaft. The repair card is an editorial record template. Open primary reference

D6 | Electrical energy arithmetic Grisso, Walker and Ignosh, Virginia Cooperative Extension, Energy Series 2901-9014 (2020) Power multiplied by operating time gives energy. All diagram ratings and the 80% factor are assumptions. Open primary reference

D7 | Powered medical devices FDA, Home Use Devices: Preparing for Power Outages Confirm backup, interruption limits and relocation with the provider and device instructions. Open primary reference

D8 | Refrigerator outage limits CDC, Keep Food Safe After a Disaster or Emergency (2025) Closed-door time limits do not restart when a door opens. Use the food-specific guidance and temperature evidence. Open primary reference

D9 | Thermal safety in outages CDC, What to Do to Protect Yourself During a Power Outage Safe fuel-equipment use and safer shelter in heat or cold. The log is not a medical threshold chart. Open primary reference

D10 | Emergency waste planning Portland regional PublicAlerts, Have a Toilet Plan Emergency arrangements depend on local conditions. Bagged waste still needs an authorised disposal route. Open primary reference

D11 | Handwashing CDC, About Handwashing (2024) Soap and clean running water, at least 20 seconds of scrubbing, rinse and dry. Wash after toilet and waste handling. Open primary reference

D12 | Escape and meeting places U.S. Fire Administration, Home Fire Escape Plans (2025) Keep openings usable and practise escape to an agreed outside place. The entrance is not a site-approved design. Open primary reference

Examples show relationships, not equipment certification, load ratings, local waste permission or engineered dimensions. Record actual equipment data and local instructions before using a system. Return to diagrams: 39 41 43 45 47 49 1176

ON THIS PAGE

BY-SA Creative Commons Attribution-ShareAlike · **PDF** Portable Document Format · **CCOHS** Canadian Centre for Occupational Health and Safety Canada's national source for workplace health and safety information · **%** percent, parts per hundred · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source

TERMS ON THIS PAGE PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

CCOHS: Canadian Centre for Occupational Health and Safety Canada's national source for workplace health and safety information.

FDA: Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here.

CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

U.S., United States of America Identifies the country or jurisdiction of the source, price or institution. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D8 | Refrigerator outage limits CDC, Keep Food Safe After a Disaster or Emergency (2025) Closed-door time limits do not restart when a door opens. Use the food-specific guidance and temperature evidence. Open primary reference

https://ext.vt.edu/content/pubs_ext_vt_edu/en/2901/2901-9014/2901-9014.html

https://www.cdc.gov/food-safety/foods/keep-food-safe-after-emergency.html

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https://www.fda.gov/downloads/MedicalDevices/ProductsandMedicalProcedures/HomeHealthandConsumer/UCM252812.pdf

https://www.cdc.gov/natural-disasters/response/what-to-do-protect-yourself-during-a-power-outage.html

D10 | Emergency waste planning Portland regional PublicAlerts, Have a Toilet Plan Emergency arrangements depend on local conditions. Bagged waste still needs an authorised disposal route. Open primary reference

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FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **CCOHS** Canadian Centre for Occupational Health and Safety Canada's national source for workplace health and safety information · **%** percent, parts per hundred

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https://www.publicalerts.org/toilet

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SHELTER, WATER AND SOIL: SOURCES AND LIMITS

References checked 19 October 2026 | Original diagrams and methods for PDF 51-71

D13 | Flat tarp dimensions DD Hammocks, DD Tarp 3x3, manufacturer specifications The listed flat tarp is 3 m x 3 m. The 1 m pitch and ideal span are editorial geometry, not a rated shelter. Open primary reference

D14 | Campsite and groundsheet U.S. National Park Service, Finding and Setting Up a Campsite Avoid falling branches and flood-prone ground. Fold excess footprint under so it cannot collect roof runoff. Open primary reference

D15 | Emergency water reserve CDC, How to Create and Store an Emergency Water Supply, 2025 One US gallon per person per day for at least three days; more for additional needs. Stored usable water is counted separately from vessel capacity. Open primary reference

D16 | Units and conversions NIST, Guide to the SI, Appendix B.9: conversion factors US gallon about 3.785412 L; foot 0.3048 m. State the unit system. Area, mass-balance and volume examples use explicit assumptions. Open primary reference

D17 | Roof drainage Pacific Northwest National Laboratory, Gutters and Downspouts Collect roof water and route it away from foundations. Sizing depends on roof area, rainfall and outlets. US guidance is not local approval. Open primary reference

D18 | Bed access and reach University of Minnesota Extension, Raised Bed Gardens Choose width for comfortable reach and height for intended users. The four-bed plan is an arithmetic example, not a measured site. Open primary reference

D19 | Hot-compost batch size University of Maryland Extension, How to Make Compost at Home The described hot-pile minimum is 3 ft in each direction. Air and moisture matter; bin dimensions do not establish yield or sanitisation. Open primary reference

D20 | Mixture, correction and curing U.S. Environmental Protection Agency, Composting at Home Mix two to three volumes of browns per volume of greens. Turn and adjust moisture; after heating ends and scraps break down, cure at least four weeks. Open primary reference

Related household safety: D9 and D12 on PDF 1176. Harvest weights and bed dimensions are chosen teaching values. The diagrams supply no structural rating, irrigation prescription or verified crop yield. Return to diagrams: 51 53 55 57 60 62 64 69 1177

DD Hammocks: DD Hammocks The manufacturer’s trading name used to identify the cited shelter and setup instructions.

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PDF Portable Document Format · **m** metre, a length unit · **US** United States · **NIST** National Institute of Standards and Technology · **SI** Système international d’unités, the International System of Units · **L** litre, a volume unit

U.S. / US: United States of America Identifies the country or jurisdiction of the source, price or institution.

NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

SI: International System of Units (Système international d'unités) The common measurement system built on units such as the metre, kilogram and second.

m: Metre The base unit of length in the International System of Units.

L, Litre One cubic decimetre of volume, or one thousand millilitres. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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https://www.ddhammocks.com/products/ddtarp_3x3

https://www.cdc.gov/water-emergency/about/how-to-create-and-store-an-emergency-water-supply.html

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https://www.nps.gov/subjects/camping/finding-and-setting-up-a-campsite.htm

https://www.nist.gov/pml/special-publication-811/nist-guide-si-appendix-b-conversion-factors/nist-guide-si-appendix-b9

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FOOD, FARM AND ORCHARD: SOURCES 1/2

Primary references checked 19 October 2026 | Diagrams and methods for PDF 72-87

D21 | Edible food energy USDA FoodData Central, SR Legacy, FDC 170026 (2019)

Potatoes, flesh and skin, raw: 77 kcal per 100 g. The harvest weights are chosen examples, not a measured yield or diet. Open primary reference

D22 | Crop-specific storage Minnesota Extension, Harvesting and Storing Home Garden Vegetables; Iowa State, Sweet Potatoes

Temperature, humidity and curing differ by crop and intended use. The cited sweet-potato storage range follows curing. Open primary reference 1 Open primary reference 2

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/harvesting-and-storing-home-garden-vegetables

https://yardandgarden.extension.iastate.edu/faq/how-do-i-harvest-and-store-sweet-potatoes

D23 | Poultry entry controls USDA APHIS, Defend the Flock: Control What Comes In (2026)

Limit visitors, use dedicated clothing/equipment, wash hands and separate species. A poultry example does not specify another species' ration. Open primary reference

D24 | Produce handling Minnesota Extension, Postharvest Handling of Fruit and Vegetable Crops in Minnesota

Potable wash water, suitable crops, cleanable food-contact surfaces and a controlled drainage route. No universal sanitizer dose or structural design is supplied. Open primary reference

D25 | Livestock water delivery FAO, Farm Structures in Tropical Climates, chapter 10: Watering Equipment

A float valve controls water level; trough access and delivery must fit the animals. The 10 L / 45 s test is an example, not a ration or local design standard. Open primary reference

Use documented local inputs for actual design. Examples here do not establish food yields, livestock rations, structural sizes, crop spacing or a complete canning process.

Return to diagrams: 72 74 76 78 80 Other references: 1179 1178

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NIST National Institute of Standards and Technology · **SI** Système international d'unités, the International System of Units · **US** United States · **L** litre, a volume unit · **m** metre, a length unit · **PDF** Portable Document Format · **USDA** United States Department of Agriculture · **g** gram, 0.001 kilogram · **APHIS** Animal and Plant Health Inspection Service · **FAO** Food and Agriculture Organization of the United Nations · **s** second, a time unit

D24 | Produce handling Minnesota Extension, Postharvest Handling of Fruit and Vegetable Crops in Minnesota

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https://yardandgarden.extension.iastate.edu/faq/how-do-i-harvest-and-store-sweet-potatoes

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USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

SR: Standard Reference The name of the United States agriculture department's legacy food composition dataset.

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FAO, Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference. g, Gram A unit of mass equal to one thousandth of a kilogram. D + number: Book evidence record

FDC: FoodData Central The United States agriculture database whose food records carry individual identification numbers.

APHIS: Animal and Plant Health Inspection Service The United States agriculture service responsible for animal and plant health.

FAO, Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference. g, Gram A unit of mass equal to one thousandth of a kilogram. D + number:

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g gram, 0.001 kilogram · **USDA** United States Department of Agriculture · **APHIS** Animal and Plant Health Inspection Service · **FAO** Food and Agriculture Organization of the United Nations · **L** litre, a volume unit · **s** second, a time unit

Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

FOOD, FARM AND ORCHARD: SOURCES 2/2

D26 | Freezing controls National Center for Home Food Preservation, Freezing Pointers

Freeze at 0°F or below, about -18°C. Avoid overloading and allow circulation while freezing. Packaging and preparation are food-specific. Open primary reference

D27 | Pressure-canning controls National Center for Home Food Preservation, Using Pressure Canners

Vent with continuous steam for 10 minutes before pressurising. Use the tested food process and elevation adjustment. Cool naturally; a seal alone does not prove safety. Open primary reference

D28 | Grafted apple trees University of Minnesota Extension, Growing Apples in the Home Garden

Scion, rootstock, pollination and mature size govern the plan. The source describes the apple graft union about 4 in (10.16 cm) above soil; recheck settlement. Open primary reference

D29 | Raw-bean safety U.S. Food and Drug Administration, Natural Toxins in Food

Raw or undercooked kidney beans can contain hazardous lectin levels. A raw-food database entry is not an instruction to eat that food raw. Open primary reference

D30 | Chill and bloom risk Jacob Williams, UGA Extension, Chill Hours (2020)

Cultivars differ in chilling requirement, and premature bloom can meet damaging frost. Match documented cultivar requirements to local climate evidence. Open primary reference

Return to diagrams: 82 84 86 Other references: 1178 1179

cm: Centimetre A unit of length equal to one hundredth of a metre.

U.S.: United States of America Identifies the country or jurisdiction of the source, price or institution.

UGA: University of Georgia The United States university credited with the agricultural or extension work.

FOOD, FARM AND ORCHARD: SOURCES 2/2

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°C degree Celsius, a temperature unit · **cm** centimetre, 0.01 metre · **UGA** University of Georgia · **PDF** Portable Document Format

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Freeze at 0°F or below, about -18°C. Avoid overloading and allow circulation while freezing. Packaging and preparation are food-specific. Open primary reference

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GARDEN, STOCK AND PRESERVATION: SOURCES 1/2

Primary references checked 19 October 2026 | Diagrams and methods for PDF 88-104

D31 | Windbreak orientation USDA NRCS, Field Windbreak

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UGA University of Georgia · **°C** degree Celsius, a temperature unit · **cm** centimetre, 0.01 metre · **PDF** Portable Document Format · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service

Rows cross the troublesome wind; purpose, seasonal density and mature height affect design. The schematic supplies no real setback, wind speed or species recommendation. Open primary reference

D32 | Plant identity and records Kew, Living Collections; NC State, Ocimum basilicum

Kew explains accession records. NC State describes sweet basil's opposite leaves and square stems. H-01 is a teaching code; no photograph is identified. Open primary reference 1 Open primary reference 2

https://www.kew.org/kew-gardens/plants/living-collection

https://plants.ces.ncsu.edu/plants/ocimum-basilicum/

D33 | Retained licorice caution NCCIH, Licorice Root: Usefulness and Safety (April 2025)

The existing medicinal-use caution was checked. Glycyrrhizin can cause serious adverse effects and interactions. No medicinal dose or therapeutic benefit is inferred from a herb image. Open primary reference

D34 | Poultry feed and stock Minnesota Extension, Raising Layer Chicks and Pullets; Caring for Chickens in Cold Weather

Use appropriate complete feed and protect it from animals and moisture. The 60 kg stock and 1.50 kg/day withdrawal are chosen arithmetic, not a flock ration. Open primary reference 1 Open primary reference 2

D35 | Mulch and cover crops Minnesota Extension, Mulching for Soil and Garden Health; Maryland Extension, Cover Crops for Gardens

Match surface material, depth and stem clearance to the planting. Choose cover crops and termination for the local season. The 600 L calculation uses an explicitly chosen area and depth. Open primary reference 1 Open primary reference 2

Plant records do not identify an unknown specimen. Arithmetic examples are not crop yields or livestock rations. Preservation diagrams explain selected controls; use the complete tested process.

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https://extension.umn.edu/agriculture/animals-and-livestock/poultry/raising-layer-chicks-and-pullets

https://extension.umn.edu/agriculture/animals-and-livestock/poultry/caring-for-chickens-in-cold-weather

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https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/mulching-for-soil-and-garden-health

https://www.extension.umd.edu/resource/cover-crops-gardens

Return to diagrams: 88 90 92 95 97 99 Other references: 1181 1180

USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

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NCCIH National Center for Complementary and Integrative Health · **kg** kilogram, a mass unit · **L** litre, a volume unit

NRCS: Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information.

NC State: North Carolina State University The United States university credited with horticultural or extension information.

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NCCIH: National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches.

GARDEN, STOCK AND PRESERVATION: SOURCES 2/2

Primary references checked 19 October 2026 | Diagrams and methods for PDF 88-104

D36 | Counted pantry and jars NCHFP, Storing Home Canned Foods

Label and date properly processed jars; keep storage clean, cool, dark and dry. Removing bands helps reveal broken seals. Inventory counts do not establish food safety. Open primary reference

D37 | Fermentation equipment NCHFP, Suitable Containers, Covers, and Weights for Fermenting Food

For cabbage/cucumbers, keep the vegetables 1-2 in (2.54-5.08 cm) under brine with suitable food-contact equipment and a clean cover. Follow the complete food-specific recipe. Open primary reference

D38 | Conditioning dried fruit NCHFP, Packaging and Storing Dried Foods

Cool fruit, condition 7-10 days in loosely filled sealed jars, shake daily and inspect for condensation. Redry unspoiled fruit if needed; discard moldy food. Open primary reference

D39 | Recipe-specific headspace NCHFP, Ensuring High-Quality Canned Foods

Headspace is the unfilled space above food and below the lid. It accommodates expansion and vacuum formation. Use the exact recipe rather than one universal gap. Open primary reference

Plant records do not identify an unknown specimen. Arithmetic examples are not crop yields or livestock rations. Preservation diagrams explain selected controls; use the complete tested process.

Return to diagrams: 101 103 Other references: 1180 1181

NCHFP, National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here. cm, Centimetre A unit of length equal to one hundredth of a metre. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

NCHFP, National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here. cm, Centimetre A unit of length equal to one hundredth of a metre. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Label and date properly processed jars; keep storage clean, cool, dark and dry. Removing bands helps reveal broken seals. Inventory counts do not establish food safety. Open primary reference

For cabbage/cucumbers, keep the vegetables 1-2 in (2.54-5.08 cm) under brine with suitable food-contact equipment and a clean cover. Follow the complete food-specific recipe. Open primary reference

Cool fruit, condition 7-10 days in loosely filled sealed jars, shake daily and inspect for condensation. Redry unspoiled fruit if needed; discard moldy food. Open primary reference

Headspace is the unfilled space above food and below the lid. It accommodates expansion and vacuum formation. Use the exact recipe rather than one universal gap. Open primary reference

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PDF Portable Document Format · **NCHFP** National Center for Home Food Preservation · **cm** centimetre, 0.01 metre

DRYING, SEEDS AND FARM CONTROLS: SOURCES 1/2

Primary references checked 19 October 2026 | Diagrams and methods for PDF 105-123

D40 | Apple drying and conditioning SDSU Extension, Dehydrating Apples; NCHFP, Packaging and Storing Dried Foods

Uniform 1/4 in slices, 140°F drying, a 1:1 lemon-juice dip and endpoint checks; cool, condition 7-10 days and inspect. Mass loss is not a moisture assay. Open primary reference 1 Open primary reference 2

https://extension.sdstate.edu/dehydrating-apples

https://nchfp.uga.edu/how/dry/drying-general/packaging-and-storing-dried-foods/

D41 | Crop-specific storage Minnesota Extension, Harvesting and Storing Home Garden Vegetables

Storage temperature, humidity, ventilation and rodent protection depend on the crop. The cellar section is functional; it supplies no wall, vent or excavation dimensions. Open primary reference

D42 | Smoking controls USDA FSIS, Smoking Meat and Poultry

Retrieved official indexed text supports air/food thermometers and prompt refrigeration. Full-page opens failed. No new smoking temperature, cure formula or shelf life is specified. Open primary reference

D43 | Rotation by botanical family Iowa State, Crop Rotation in the Vegetable Garden; Minnesota, Promote Healthy Soil

Track families, host weeds, cover crops and disease history. The four-bed movement is a teaching example; rotation and legumes do not provide a guaranteed fertilizer dose. Open primary reference 1

Track families, host weeds, cover crops and disease history. The four-bed movement is a teaching example; rotation and legumes do not provide a guaranteed fertilizer dose. Open primary reference 1 Open primary reference 2

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Track families, host weeds, cover crops and disease history. The four-bed movement is a teaching example; rotation and legumes do not provide a guaranteed fertilizer dose. Open primary reference 1 Open primary reference 2

https://yardandgarden.extension.iastate.edu/how-to/crop-rotation-vegetable-garden

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/living-soil-healthy-garden

D44 | Seasonal planning records Minnesota Extension, Crop and Field Planning Tools for Vegetable Farmers

Use farm records, labour and local crop timing. The 28-day procurement schedule and 20 seals are chosen arithmetic, not a supplier promise or seed-germination period. Open primary reference

ON THIS PAGE

PDF Portable Document Format · **SDSU** South Dakota State University · **NCHFP** National Center for Home Food Preservation · **USDA** United States Department of Agriculture · **FSIS** Food Safety and Inspection Service

Diagrams show physical controls and chosen examples. Crop timing, food processes and animal housing remain specific to the actual crop, product and species. Schematic drawings supply no construction sizes.

Return to diagrams: 105 108 110 112 Other references: 1183 1182

SDSU: South Dakota State University The university extension programme credited with the cited preservation guidance.

NCHFP: National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

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Use farm records, labour and local crop timing. The 28-day procurement schedule and 20 seals are chosen arithmetic, not a supplier promise or seed-germination period. Open primary reference

DRYING, SEEDS AND FARM CONTROLS: SOURCES 2/2

D45 | Saving identifiable seed Minnesota Extension, Saving Vegetable Seeds

Select suitable healthy plants, keep lots distinct and dry bean pods before shelling. Attributed cool storage is 32-41°F, exactly 0-5°C. No seed-treatment chemistry is added. Open primary reference

D46 | Counted germination tests Iowa State, How to Store Seeds and Test Germination Rates

Random samples, damp paper and repeated observations support a household test. A 17/20 result is 85%, not certified normal seedlings, seed health or field emergence. Open primary reference

D47 | Carrot depth, spacing and water Maryland Extension, Growing Carrots; Minnesota Extension, Growing Carrots and Parsnips

Maryland: 1/4-1/2 in cover. Minnesota: 2-4 in final spacing and a general 1 in weekly water guide. Exact conversions and the separate 25 mm calculation are distinguished. Open primary reference 1 Open primary reference 2

https://extension.umd.edu/resource/growing-carrots-home-garden

https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/growing-carrots-and-parsnips

D48 | Grain separation and trial records FAO, Prevention of Post-Harvest Food Losses, section 12

Threshing frees kernels; sieves separate sizes; moving air removes lighter chaff. The chosen 4.80 kg from 20.0 m^2 is an accounting example at an unstated moisture condition. Open primary reference

D49 | Adult hen housing and daily care Minnesota Extension, Raising Chickens for Eggs; USDA APHIS, Defend the Flock

Shelter, predators, clean feed/water, nesting, roosting and daily observations matter. APHIS biosecurity evidence is retained from D23. No universal stocking size or laying date is asserted. Open primary reference 1 Open primary reference 2

ON THIS PAGE

°C degree Celsius, a temperature unit · **%** percent, parts per hundred · **mm** millimetre, 0.001 metre · **FAO** Food and Agriculture Organization of the United Nations · **kg** kilogram, a mass unit · **m^2** square metre, an area unit · **USDA** United States Department of Agriculture · **APHIS** Animal and Plant Health Inspection Service

https://extension.umn.edu/agriculture/animals-and-livestock/poultry/raising-chickens-for-eggs

https://www.aphis.usda.gov/livestock-poultry-disease/avian/defend-the-flock/biosecurity-basics/control-what-comes

Return to diagrams: 114 117 120 122 Other references: 1182 1183

mm: Millimetre A unit of length equal to one thousandth of a metre.

FAO, Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference. kg, Kilogram A unit of mass equal to one thousand grams. m^2, Square metre The area of a square with sides one metre long. USDA, United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

DRYING, SEEDS AND FARM CONTROLS: SOURCES 2/2

Primary references checked 19 October 2026 | Diagrams and methods for PDF 105-123

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m^2 square metre, an area unit · **PDF** Portable Document Format · **°C** degree Celsius, a temperature unit · **%** percent, parts per hundred · **mm** millimetre, 0.001 metre · **FAO** Food and Agriculture Organization of the United Nations · **kg** kilogram, a mass unit · **USDA** United States Department of Agriculture · **APHIS** Animal and Plant Health Inspection Service

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TERMS ON THIS PAGE PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

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SOIL, BEDS AND LOCAL SEASONS: SOURCES

Primary references checked 19 October 2026 | Diagrams and methods for PDF 124-129

D50 | Home compost management US EPA, Composting at Home

D51 | Soil testing and fertility University of Minnesota Extension, Soil Testing for Lawns and Gardens

Browns, air, moisture and curing. A household pile is not a validated sanitation process. Open primary reference

Sample the growing soil and request the needed analysis. A basic fertility panel does not test every contaminant. Open primary reference

D52 | Bed access and materials University of Minnesota Extension, Raised Bed Gardens

ON THIS PAGE

°C degree Celsius, a temperature unit · **%** percent, parts per hundred · **USDA** United States Department of Agriculture · **APHIS** Animal and Plant Health Inspection Service · **mm** millimetre, 0.001 metre · **FAO** Food and Agriculture Organization of the United Nations · **kg** kilogram, a mass unit · **m^2** square metre, an area unit · **PDF** Portable Document Format · **US** United States · **EPA** Environmental Protection Agency, United States

Set width by reach and inspect material suitability. All dimensions in the worked bed are chosen examples. Open primary reference

D53 | Soil under the bed University of Maryland Extension, Soil to Fill Raised Beds

Ground-supported beds and beds on hard surfaces require different decisions. Check the origin and analysis of imported soil. Open primary reference

D54 | Regional Argentine planning INTA Esquel, Pautas para diseñar una huerta en la Patagonia cordillerana; INTA Huertas

Esquel guidance dated 29 November 2022 is regional, not a national planting calendar. The second link is the resource index. Open primary reference 1 Open primary reference 2

D55 | Readiness for planting University of Minnesota Extension, Planting the Vegetable Garden

Crop cold tolerance, workable soil and soil temperature matter. Minnesota calendar dates are not transferred to Argentina. Open primary reference

The 180 L bed calculation and 100-day crop window use chosen inputs. Compost volume does not establish nutrient content; local frost and crop evidence must determine a real planting window.

Return to diagrams: 124 126 128 1184

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

EPA: Environmental Protection Agency The United States environmental authority responsible for the cited material.

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. L, Litre One cubic decimetre of volume, or one thousand millilitres. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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https://www.argentina.gob.ar/noticias/pautas-para-disenar-una-huerta-en-la-patagonia-cordillerana

https://www.argentina.gob.ar/inta/servicio-de-atencion-ciudadana/huertas

D55 | Readiness for planting University of Minnesota Extension, Planting the Vegetable Garden

Crop cold tolerance, workable soil and soil temperature matter. Minnesota calendar dates are not transferred to Argentina. Open primary reference

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **L** litre, a volume unit · **EPA** Environmental Protection Agency, United States

Set width by reach and inspect material suitability. All dimensions in the worked bed are chosen examples. Open primary reference

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Ground-supported beds and beds on hard surfaces require different decisions. Check the origin and analysis of imported soil. Open primary reference

D52 | Bed access and materials University of Minnesota Extension, Raised Bed Gardens

D54 | Regional Argentine planning INTA Esquel, Pautas para diseñar una huerta en la Patagonia cordillerana; INTA Huertas

D55 | Readiness for planting University of Minnesota Extension, Planting the Vegetable Garden

PLANT RECORDS AND FRUIT METHODS: SOURCES 1/2

Primary references checked 19 October 2026 | Diagrams and methods for PDF 130-143

D56 | Botanical vouchers

Royal Botanic Gardens, Kew: Making herbarium specimens, MSBP Sheet 15 (2024) Representative material, collection data, pressing and drying. An apparent heater-power unit error is excluded; this chapter uses an unheated press. Open primary reference

D57 | Press layers and inspection

American Museum of Natural History: How to Press and Preserve Plants; RHS: Pressing and collecting samples AMNH supplies the newspaper, blotter and ventilated-card sequence. RHS supports the first 24-hour inspection. Drying time varies. Open primary reference 1 Open primary reference 2

https://www.amnh.org/learn-teach/curriculum-collections/biodiversity-counts/plant-identification/how-to-press-and-preserve-plants

https://www.rhs.org.uk/science/conservation-biodiversity/conserving-garden-plants/rhs-herbarium/pressing-and-collecting-samples

D58 | Identity and evidence of use

Kew: The damselfly and the fire bell; NCCIH: Using Dietary Supplements Wisely Keep later identifications with the original collection record. A preparation, part and evidence of use require their own assessment. Open primary reference 1 Open primary reference 2

https://www.kew.org/read-and-watch/the-damselfly-and-the-fire-bell

https://www.nccih.nih.gov/health/using-dietary-supplements-wisely

D59 | Chañar morphology

Flora del Cono Sur / Flora Argentina: Geoffroea decorticans, species 9564 Compound leaves, exfoliating bark and drupe measurements. Fruit length and width are separate axes, not interchangeable diameters. Open primary reference

D60 | Regional chañar account

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **PDF** Portable Document Format · **MSBP** Millennium Seed Bank Partnership · **RHS** Royal Horticultural Society · **NCCIH** National Center for Complementary and Integrative Health

Administración de Parques Nacionales, Sistema de Información de Biodiversidad: Geoffroea decorticans Compare its fruit diameter and regional phenology with the flora. Neither account measures the photographed specimen. Open primary reference

D61 | Chañar food definitions

Argentina, Resolución Conjunta 11/2025: articles 675 tris, 675 quater and 775 tris Distinguishes whole-fruit flour, pulp flour and arrope. These definitions provide no household bottling schedule or numerical fruit-to-water recipe. Open primary reference

Botanical dimensions describe the cited sources. Chosen accounting examples are not yields. A food definition does not supply a validated preservation recipe. Existing historical page 131 is retained.

Return to diagrams: 130 134 139 Other source page 1185

MSBP: Millennium Seed Bank Partnership The plant-conservation partnership associated with the Royal Botanic Gardens, Kew.

RHS: Royal Horticultural Society The British horticultural organisation credited with the plant-growing guidance.

AMNH: American Museum of Natural History The New York museum responsible for the cited collection or reference.

NCCIH: National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches.

Royal Botanic Gardens, Kew: Making herbarium specimens, MSBP Sheet 15 (2024) Representative material, collection data, pressing and drying. An apparent heater-power unit error is excluded; this chapter uses an unheated press. Open primary reference

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https://www.rhs.org.uk/science/conservation-biodiversity/conserving-garden-plants/rhs-herbarium/pressing-and-collecting-samples

Flora del Cono Sur / Flora Argentina: Geoffroea decorticans, species 9564 Compound leaves, exfoliating bark and drupe measurements. Fruit length and width are separate axes, not interchangeable diameters. Open primary reference

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Administración de Parques Nacionales, Sistema de Información de Biodiversidad: Geoffroea decorticans Compare its fruit diameter and regional phenology with the flora. Neither account measures the photographed specimen. Open primary reference

PLANT RECORDS AND FRUIT METHODS: SOURCES 2/2

D62 | Chokecherry identity

NC State Extension Plant Toolbox: Prunus virginiana Leaf arrangement, flowers, fruit and cyanogenic parts. The photograph alone is insufficient to identify a harvest. Open primary reference

D63 | Chokecherry cultivation

Utah State University Extension: Chokecherry in the Garden Suckering growth and cultivar-dependent 5-8 ft spacing are attributed regional guidance, not a universal planting specification. Open primary reference

D64 | Juice extraction and freezing

University of Alaska Fairbanks Extension: Chokecherries, FNH-00113 The measured fruit-and-water method, gentle heating, gravity straining and freezer headspace. Canning directions are not reproduced. Open primary reference

D65 | Preserving scope

Utah State University Extension: How to Preserve Chokecherries Use a tested recipe for the intended product. Its yield basis differs from UAF; cups of fruit are not assumed to equal a pound. Open primary reference

D66 | US and metric measures

NIST SP 430 (2004), Household Weights and Measures US customary cup is about 237 mL; 4 cups are about 946 mL. A 250 mL metric cup differs. Inch conversion gives 1/2 in = 12.7 mm. Open primary reference

D67 | Existing photo provenance

Dick Culbert: Geoffraea decorticans, fruit; Matt Lavin: Prunus virginiana CC BY 2.0 and CC BY-SA 2.0 respectively. Both originals were visually matched to the existing circular crops; the book photographs remain unchanged. Open primary reference 1 Open primary reference 2

Return to diagrams: 130 134 139 Other source page 1186

NC State: North Carolina State University The United States university credited with horticultural or extension information.

UAF: University of Alaska Fairbanks The United States university credited in the record.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

SP, Special Publication The prefix identifies a publication in a numbered technical series of the United States measurement institute. mL, Millilitre One thousandth of a litre, a unit of volume. mm, Millimetre A unit of length equal to one thousandth of a metre. CC BY, Creative Commons Attribution A reuse licence requiring credit to the creator and compliance with its terms.

CC BY-SA: Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

PLANT RECORDS AND FRUIT METHODS: SOURCES 2/2

Primary references checked 19 October 2026 | Diagrams and methods for PDF 130-143

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UAF University of Alaska Fairbanks · **US** United States · **NIST** National Institute of Standards and Technology · **mL** millilitre, 0.001 litre · **mm** millimetre, 0.001 metre · **=** equals · **BY** Attribution condition in a Creative Commons licence · **BY-SA** Creative Commons Attribution-ShareAlike · **PDF** Portable Document Format

NC State Extension Plant Toolbox: Prunus virginiana Leaf arrangement, flowers, fruit and cyanogenic parts. The photograph alone is insufficient to identify a harvest. Open primary reference

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https://commons.wikimedia.org/wiki/File:Geoffraea_decorticans,_fruit._(8434418444).jpg

https://commons.wikimedia.org/wiki/File:Prunus_virginiana_(5069894416).jpg

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EDIBLE PLANTS AND KITCHEN HERBS: SOURCES

Botanical comparisons, food methods and measurement limits | Checked 20 October 2026

D68 | Dandelion structures UC IPM: Dandelion identification gallery; NC State: Taraxacum officinale Rosette, taproot, hollow scape, head of ray florets and one-seeded fruit. NC State's inconsistent compound-leaf field is not used. Read primary reference 1 Read primary reference 2

https://ipm.ucanr.edu/weeds-identification-gallery/dandelion/

https://plants.ces.ncsu.edu/plants/taraxacum-officinale/

ON THIS PAGE

UAF University of Alaska Fairbanks · **US** United States · **NIST** National Institute of Standards and Technology · **mL** millilitre, 0.001 litre · **mm** millimetre, 0.001 metre · **=** equals · **BY** Attribution condition in a Creative Commons licence · **BY-SA** Creative Commons Attribution-ShareAlike · **UC** University of California · **IPM** Integrated pest management

D69 | Dandelion leaf cookery Maryland DNR: Spicy Dandelion Greens with Bacon, submitted by George Jamar Retained recipe on PDF 145 uses the published oil alternative. It is food preparation, not detoxification or a preservation process. Read primary reference

D70 | Cleaning produce US FDA: 7 Tips for Cleaning Fruits, Vegetables Hand washing, plain running water and clean drying materials. Washing cannot establish botanical identity or make an unsuitable collection site acceptable. Read primary reference

D71 | Kitchen units NIST SP 430: Household Weights and Measures, 2004 US liquid quart, customary spoon, pound and metric relationships. Only the relevant kitchen conversions are used; unrelated table errors are excluded. Read primary reference

D72 | Wild-garlic confusion BfR: Wild garlic: Beware of mix-ups, 10 March 2026 Allium ursinum can be confused with Convallaria majalis and Colchicum autumnale. Odour carried on fingers can mislead. Read primary reference

D73 | Ramsons flower structure Royal Horticultural Society: Allium ursinum Paired elliptic leaves and an umbel of star-shaped white flowers. No single character in this drawing establishes edibility. Read primary reference

D69 was checked in detailed primary-page search-index text after a direct-access failure. Existing page 145 is retained. Source ranges describe the published account, not the photographed specimen.

Illustration 144 Illustration 149 Illustration 154 Other source page 1249

TERMS ON THIS PAGE UC: University of California The university system whose researchers or extension offices are cited.

IPM: Integrated pest management A process of monitoring pests and using a combination of appropriate control methods.

D68 | Dandelion structures UC IPM: Dandelion identification gallery; NC State: Taraxacum officinale Rosette, taproot, hollow scape, head of ray florets and one-seeded fruit. NC State's inconsistent compound-leaf field is not used. Read primary reference 1 Read primary reference 2

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DNR: Department of Natural Resources The state agency, identified by its state name, credited with the cited resource.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

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DNR Department of Natural Resources · **PDF** Portable Document Format · **US** United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **NIST** National Institute of Standards and Technology · **UC** University of California · **IPM** Integrated pest management

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SP, Special Publication The prefix identifies a publication in a numbered technical series of the United States measurement institute. BfR, Bundesinstitut für Risikobewertung Germany's Federal Institute for Risk Assessment. D + number: Book evidence record

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FDA: Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here.

NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

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D74 | Lily-of-the-valley NC State Extension Plant Toolbox: Convallaria majalis Paired basal leaves, sheathing bases and a one-sided raceme of nodding bells. Toxicity decisions use BfR rather than a low-severity catalogue label. Read primary reference

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US United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **NIST** National Institute of Standards and Technology · **UC** University of California · **IPM** Integrated pest management · **DNR** Department of Natural Resources · **PDF** Portable Document Format

D75 | Autumn crocus seasonality NC State Extension Plant Toolbox: Colchicum autumnale Spring foliage and leafless autumn flowers are distinct seasonal states. Highly poisonous. Calendar months depend on place. Read primary reference

D76 | Suspected plant poisoning BfR: Poisonous plants: protection and what to do, 14 March 2025 Prompt poison-centre/medical advice, exposure details and retained plant material. Do not induce vomiting or improvise a remedy. Read primary reference

D77 | Container cultivation University of Maryland Extension: Growing Herbs in Containers and Indoors; Growing Vegetables in Containers and Salad Tables Drainage, potting media, species-dependent watering and 2-5 US-gallon guidance for small herbs. Larger herbs need larger pots; no universal watering volume. Read primary reference 1 Read primary reference 2

https://extension.umd.edu/resource/growing-herbs-containers-and-indoors

https://extension.umd.edu/resource/growing-vegetables-containers-and-salad-tables

D78 | Drying culinary herbs National Center for Home Food Preservation: Herbs, from So Easy to Preserve, 6th edition Controlled airflow and temperature, single-layer loading, dryness endpoints and storage. Timing is a guide, not an automatic release test. Read primary reference

Drawings are original explanatory schematics. Existing photographs are preserved. Botanical identification, culinary use and medicinal evidence remain separate questions.

Illustration 144 Illustration 149 Illustration 154 Other source page 1250

TERMS ON THIS PAGE NC State: North Carolina State University The United States university credited with horticultural or extension information.

BfR: Bundesinstitut für Risikobewertung Germany's Federal Institute for Risk Assessment.

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BURDOCK, EVIDENCE AND LOCALITY: SOURCES

Botany, food preparation, evidence and field records | Checked 20 October 2026

D79 | Burdock growth and harvest

NC State Extension Plant Toolbox: Arctium lappa

Biennial stages, root harvest and bur precautions. Potential root depth is not an excavation specification. Read primary reference

D80 | Burdock root cookery

Japan MAFF: Kimpira, Our Regional Cuisines

Published two-serving recipe and the attributed Edo-period name account. Page 159 retains the full recipe; its 5/15 mL spoon convention is explicit. Read primary reference

D81 | Reading a study method

NCCIH: How To Make Sense of a Scientific Journal Article, Methods

Study type, participants, intervention, outcomes and bias. A historical record and a human trial answer different questions. Read primary reference

D82 | Interpreting results

NCCIH: How To Make Sense of a Scientific Journal Article, Results

Read effect size, uncertainty, other studies and conflicts. The 28/100 versus 20/100 diagram is chosen arithmetic, not trial data. Read primary reference

D83 | A real evidence-and-risk example

NCCIH: Licorice Root, updated April 2025

Insufficient high-quality evidence for clear general clinical support; glycyrrhizin risks and reported interactions. No household medicinal dose. Read primary reference

D84 | Names and preparations

Royal Botanic Gardens, Kew: Medicinal Plant Names Services

Accepted names, synonyms, medicinal-source names, plant parts and trade forms. Resolving a name does not establish efficacy or identify a specimen. Read primary reference

The recipe remains on PDF 159. Clinical information is evidence for a defined preparation and context; it is not a household dose. Counts in the evidence diagram are chosen teaching arithmetic.

Biennial stages, root harvest and bur precautions. Potential root depth is not an excavation specification. Read primary reference

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D83 | A real evidence-and-risk example

NCCIH: Licorice Root, updated April 2025

ON THIS PAGE

MAFF Ministry of Agriculture, Forestry and Fisheries Japan's government ministry credited for the agricultural or food-culture source · **mL** millilitre, 0.001 litre · **NCCIH** National Center for Complementary and Integrative Health · **PDF** Portable Document Format

Insufficient high-quality evidence for clear general clinical support; glycyrrhizin risks and reported interactions. No household medicinal dose. Read primary reference

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Illustration 158 Illustration 163 Illustration 168 Other source page 1251

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MAFF: Ministry of Agriculture, Forestry and Fisheries Japan's government ministry credited for the agricultural or food-culture source.

mL: Millilitre One thousandth of a litre, a unit of volume.

NCCIH: National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

BURDOCK, EVIDENCE AND LOCALITY: SOURCES

Botany, food preparation, evidence and field records | Checked 20 October 2026

D85 | Position and uncertainty

GBIF: Georeferencing Best Practices; Georeferencing Quick Reference Guide, 2020

Point-radius representation, datum and uncertainty in metres. The 50 m circle is a chosen geometry example, not a surveyed locality. Read primary reference 1 Read primary reference 2

https://docs.gbif.org/georeferencing-best-practices/1.0/en/

https://docs.gbif.org/georeferencing-quick-reference-guide/1.0/en/

D86 | Regional records and their limits

Argentina APN, SIB: Geoffroea decorticans; information-entry criteria

Species, protected areas and underlying sources are linked. The chañar account cites Prina and colleagues, 2015. Sensitive locality details may be withheld. Read primary reference 1 Read primary reference 2

https://sib.gob.ar/especies/geoffroea-decorticans

https://sib.gob.ar/institucional/criterios-ingreso-informacion

D87 | Citing a dynamic database

Argentina APN, SIB: Cómo citar la información publicada en el SIB

Attribute a particular source to its author; give APN/SIB and the consultation date for a general database query. Read primary reference

D88 | Algarrobo research in context

INTA: El cultivo del algarrobo en Argentina, López Lauenstein and Vega, compilers

Several regional Neltuma species, formerly grouped in Prosopis, have different environments and uses. A common name does not define one species. Read primary reference

D89 | Murta research pointer

INIA Chile repository: Caracterización fisicoquímica de frutos de Murta (Murtilla), Ugni molinae

Confirms the existing regional research pointer on page 169. No growing rate, yield, health benefit or recipe is derived from this record. Read primary reference

D90 | Burdock botanical cross-check

eFloras: Arctium lappa, Flora of North America and Flora of China

https://efloras.org/florataxon.aspx?flora_id=1&taxon_id=200023153

https://efloras.org/florataxon.aspx?flora_id=2&taxon_id=200023153

Lower petioles, leaf surfaces, stalked heads and hooked bracts. Different regional size ranges are not specimen measurements. Read primary reference 1 Read primary reference 2

D89 uses indexed repository metadata; D90 uses detailed indexed floristic descriptions after direct-access failures. The locality drawing is fictional. Existing photographs are preserved without new species or location claims.

Illustration 158 Illustration 163 Illustration 168 Other source page 1252

ON THIS PAGE

GBIF Global Biodiversity Information Facility · **m** metre, a length unit · **APN** Administración de Parques Nacionales · **SIB** Sistema de Información de Biodiversidad · **INTA** Instituto Nacional de Tecnología Agropecuaria · **INIA** Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference

TERMS ON THIS PAGE GBIF: Global Biodiversity Information Facility An international network that publishes species-occurrence and collection data.

APN: Administración de Parques Nacionales Argentina's National Parks Administration.

SIB, Sistema de Información de Biodiversidad The biodiversity information system of Argentina's National Parks Administration. INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

INIA: Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference.

m: Metre The base unit of length in the International System of Units.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

BURDOCK, EVIDENCE AND LOCALITY: SOURCES

Botany, food preparation, evidence and field records | Checked 20 October 2026

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GBIF: Georeferencing Best Practices; Georeferencing Quick Reference Guide, 2020

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https://docs.gbif.org/georeferencing-quick-reference-guide/1.0/en/

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Species, protected areas and underlying sources are linked. The chañar account cites Prina and colleagues, 2015. Sensitive locality details may be withheld. Read primary reference 1 Read primary reference 2

https://sib.gob.ar/especies/geoffroea-decorticans

https://sib.gob.ar/institucional/criterios-ingreso-informacion

D87 | Citing a dynamic database

Argentina APN, SIB: Cómo citar la información publicada en el SIB

Attribute a particular source to its author; give APN/SIB and the consultation date for a general database query. Read primary reference

D88 | Algarrobo research in context

INTA: El cultivo del algarrobo en Argentina, López Lauenstein and Vega, compilers

Several regional Neltuma species, formerly grouped in Prosopis, have different environments and uses. A common name does not define one species. Read primary reference

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GBIF Global Biodiversity Information Facility · **m** metre, a length unit · **APN** Administración de Parques Nacionales · **SIB** Sistema de Información de Biodiversidad · **INTA** Instituto Nacional de Tecnología Agropecuaria

INIA Chile repository: Caracterización fisicoquímica de frutos de Murta (Murtilla), Ugni molinae

Confirms the existing regional research pointer on page 169. No growing rate, yield, health benefit or recipe is derived from this record. Read primary reference

D90 | Burdock botanical cross-check

eFloras: Arctium lappa, Flora of North America and Flora of China

https://efloras.org/florataxon.aspx?flora_id=1&taxon_id=200023153

https://efloras.org/florataxon.aspx?flora_id=2&taxon_id=200023153

Lower petioles, leaf surfaces, stalked heads and hooked bracts. Different regional size ranges are not specimen measurements. Read primary reference 1 Read primary reference 2

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Illustration 158 Illustration 163 Illustration 168 Other source page 1252

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INIA Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference · **m** metre, a length unit

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Argentina APN, SIB: Cómo citar la información publicada en el SIB

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LICORICE, PREPARATIONS AND MORINGA: SOURCES

Botany, product comparison, cultivation and food handling | Checked 20 October 2026

D91 | Licorice cultivation and structure

ON THIS PAGE

INIA Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference · **APN** Administración de Parques Nacionales · **SIB** Sistema de Información de Biodiversidad · **INTA** Instituto Nacional de Tecnología Agropecuaria

NC State Extension Plant Toolbox: Glycyrrhiza glabra

Alternate compound leaves, soil context and spread. Catalogue dimensions and medicinal claims are not universal specifications. Read primary reference

D92 | Licorice leaf and rhizome

Kew, Plants of the World Online: Glycyrrhiza glabra, species profile

Paired leaflets plus a terminal leaflet; underground stems and bud-bearing divisions. The drawing is not a measured specimen. Read primary reference

D93 | Licorice: evidence and risk

NCCIH: Licorice Root, updated April 2025

Rechecks D83 for this monograph: preparation-specific evidence, glycyrrhizin risks and medicine interactions. No home dose. Read primary reference

D94 | Native and total extract ratios

EMA: Quality of herbal medicinal products, Revision 3, 18 January 2022

Definitions on page 16 distinguish native and total extract. The 30/10/20 g drawing is chosen arithmetic, not an extraction specification. Read primary reference

D95 | Product comparison and use record

https://ods.od.nih.gov/factsheets/BotanicalBackground-Consumer/

https://ods.od.nih.gov/pubs/DietarySupplementandMedicineRecord.pdf

NIH Office of Dietary Supplements: Botanical Background; Medicine Record

Preparation, evidence and quality are separate checks. Record actual products, amounts, dates, medicines and reactions for a professional review. Read primary reference 1 Read primary reference 2

D96 | Garlic: form and harms

NCCIH: Garlic, updated February 2025

Limited immune evidence, modest findings for some supplement outcomes, bleeding risk and burns from raw topical garlic. Read primary reference

D93 rechecks the licorice source used in Batch 62. The extraction diagram uses chosen masses to explain ratios; it supplies no solvent recipe, therapeutic dose or potency claim.

Alternate compound leaves, soil context and spread. Catalogue dimensions and medicinal claims are not universal specifications. Read primary reference

Paired leaflets plus a terminal leaflet; underground stems and bud-bearing divisions. The drawing is not a measured specimen. Read primary reference

NCCIH: Licorice Root, updated April 2025

EMA: Quality of herbal medicinal products, Revision 3, 18 January 2022

D95 | Product comparison and use record

ON THIS PAGE

NCCIH National Center for Complementary and Integrative Health · **EMA** European Medicines Agency · **g** gram, 0.001 kilogram · **NIH** National Institutes of Health

NIH Office of Dietary Supplements: Botanical Background; Medicine Record

Preparation, evidence and quality are separate checks. Record actual products, amounts, dates, medicines and reactions for a professional review. Read primary reference 1 Read primary reference 2

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NIH Office of Dietary Supplements: Botanical Background; Medicine Record

Illustration 173 Illustration 178 Illustration 182 Other source page 1253

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D96 | Garlic: form and harms

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NCCIH: Garlic, updated February 2025

Limited immune evidence, modest findings for some supplement outcomes, bleeding risk and burns from raw topical garlic. Read primary reference

D93 rechecks the licorice source used in Batch 62. The extraction diagram uses chosen masses to explain ratios; it supplies no solvent recipe, therapeutic dose or potency claim.

TERMS ON THIS PAGE NC State: North Carolina State University The United States university credited with horticultural or extension information.

ON THIS PAGE

NIH National Institutes of Health · **NCCIH** National Center for Complementary and Integrative Health · **g** gram, 0.001 kilogram

NCCIH: National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches.

EMA: European Medicines Agency The European Union body evaluating medicines and issuing the cited reference.

NIH: National Institutes of Health The United States biomedical research agency and its associated institutes.

g: Gram A unit of mass equal to one thousandth of a kilogram.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

LICORICE, PREPARATIONS AND MORINGA: SOURCES

Botany, product comparison, cultivation and food handling | Checked 20 October 2026

D97 | Echinacea: define the outcome

NCCIH: Echinacea

Cold occurrence differs from duration. Allergies and uncertain interactions stay beside the evidence. Read primary reference

D98 | Ginger: preparation and setting

NCCIH: Ginger

Most studies concern supplements. Pregnancy-associated, travel-related and postoperative nausea are different questions. Read primary reference

D99 | Moringa leaf, flower and pod

World Agroforestry: Moringa oleifera, Agroforestree Database 4.0, 2009

Branched leaves, unequal petals and winged seeds. Regional ranges describe the species, not the retained photograph. Read primary reference

D100 | Annual-moringa cultivation

Tamil Nadu Agricultural University: Annual Moringa

Published seed depth, spacing, pit dimensions and pinching height for its named annual system. Local adaptation remains necessary. Read primary reference

D101 | Clean produce handling

U.S. FDA: 7 Tips for Cleaning Fruits, Vegetables

Hand hygiene and plain running water for produce. General food handling does not identify a plant or validate a preserve. Read primary reference

D102 | Clarity is not disinfection

U.S. CDC: How to Make Water Safe in an Emergency

Settling or filtering cloudy water precedes germ-killing treatment. Use water suitable for food preparation. Read primary reference

ON THIS PAGE

NCCIH National Center for Complementary and Integrative Health · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source

The TNAU numbers describe an annual moringa system in its regional context. They are not a site design for Argentina. Original photographs remain unchanged; no new specimen measurements are inferred.

Illustration 173 Illustration 178 Illustration 182 Other source page 1254

TERMS ON THIS PAGE NCCIH: National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches.

U.S.: United States of America Identifies the country or jurisdiction of the source, price or institution.

FDA: Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here.

CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

TNAU, Tamil Nadu Agricultural University The Indian university credited with the crop-growing source. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Cold occurrence differs from duration. Allergies and uncertain interactions stay beside the evidence. Read primary reference

Most studies concern supplements. Pregnancy-associated, travel-related and postoperative nausea are different questions. Read primary reference

World Agroforestry: Moringa oleifera, Agroforestree Database 4.0, 2009

Tamil Nadu Agricultural University: Annual Moringa

D101 | Clean produce handling

U.S. FDA: 7 Tips for Cleaning Fruits, Vegetables

Hand hygiene and plain running water for produce. General food handling does not identify a plant or validate a preserve. Read primary reference

D102 | Clarity is not disinfection

U.S. CDC: How to Make Water Safe in an Emergency

Settling or filtering cloudy water precedes germ-killing treatment. Use water suitable for food preparation. Read primary reference

D99 | Moringa leaf, flower and pod

Branched leaves, unequal petals and winged seeds. Regional ranges describe the species, not the retained photograph. Read primary reference

D100 | Annual-moringa cultivation

Published seed depth, spacing, pit dimensions and pinching height for its named annual system. Local adaptation remains necessary. Read primary reference

Branched leaves, unequal petals and winged seeds. Regional ranges describe the species, not the retained photograph. Read primary reference

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TNAU Tamil Nadu Agricultural University · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source

Published seed depth, spacing, pit dimensions and pinching height for its named annual system. Local adaptation remains necessary. Read primary reference

D101 | Clean produce handling

U.S. FDA: 7 Tips for Cleaning Fruits, Vegetables

D102 | Clarity is not disinfection

U.S. CDC: How to Make Water Safe in an Emergency

Hand hygiene and plain running water for produce. General food handling does not identify a plant or validate a preserve. Read primary reference

Settling or filtering cloudy water precedes germ-killing treatment. Use water suitable for food preparation. Read primary reference

MURTA AND ORANGE DAYLILY: SOURCES

Botanical structure, propagation, growing context and food handling | Checked 20 October 2026

D103 | Murta in Argentina

Administración de Parques Nacionales, SIB: Ugni molinae

Leaf pairs, leaf surfaces, hanging flowers and regional occurrence. The cited underlying 2012 book was not independently read. Read primary reference

D104 | Murta garden context

Royal Horticultural Society: Ugni molinae

Rechecks page 188: UK dimensions and hardiness, berry description and semi-ripe propagation. No fixed rooting temperature. Read primary reference

D105 | Semi-ripe cuttings

Royal Horticultural Society: Cuttings: semi-ripe

General cutting preparation and medium, distinct from a measured murta trial. The 2 L mix is a chosen volume example. Read primary reference

D106 | Published orchard system

I. Seguel and colleagues, INIA: Establecimiento y Mantención de un Huerto Comercial de Murtilla

Printed pages 42-43. Southern Chile cultivation context, spacing and beds. Issue date unresolved; no current stock or yield promise. Read primary reference

D107 | Flower and fruit anatomy

Manaaki Whenua, NZ Myrtaceae key: Ugni molinae

Leaf attachment, overlapping petals and persistent recurved sepals. NZ weed status is not a claim about Argentine regulations. Read primary reference

D108 | Fresh-produce handling

ON THIS PAGE

FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **SIB** Sistema de Información de Biodiversidad · **UK** United Kingdom · **L** litre, a volume unit · **INIA** Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference

US FDA: 7 Tips for Cleaning Fruits, Vegetables

Rechecks D101: handwashing and plain running water. Does not establish a murta canning process or shelf life. Read primary reference

D108 rechecks the fresh-produce guidance used as D101. The cutting mixture and harvest calculations are chosen examples. Orchard dimensions retain their southern Chile context.

Royal Horticultural Society: Cuttings: semi-ripe

I. Seguel and colleagues, INIA: Establecimiento y Mantención de un Huerto Comercial de Murtilla

D107 | Flower and fruit anatomy

D108 | Fresh-produce handling

Illustration 187 Illustration 192 Other source page 1255

Leaf pairs, leaf surfaces, hanging flowers and regional occurrence. The cited underlying 2012 book was not independently read. Read primary reference

Rechecks page 188: UK dimensions and hardiness, berry description and semi-ripe propagation. No fixed rooting temperature. Read primary reference

Manaaki Whenua, NZ Myrtaceae key: Ugni molinae

Leaf attachment, overlapping petals and persistent recurved sepals. NZ weed status is not a claim about Argentine regulations. Read primary reference

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D105 | Semi-ripe cuttings

General cutting preparation and medium, distinct from a measured murta trial. The 2 L mix is a chosen volume example. Read primary reference

D106 | Published orchard system

Printed pages 42-43. Southern Chile cultivation context, spacing and beds. Issue date unresolved; no current stock or yield promise. Read primary reference

Royal Horticultural Society: Cuttings: semi-ripe

General cutting preparation and medium, distinct from a measured murta trial. The 2 L mix is a chosen volume example. Read primary reference

I. Seguel and colleagues, INIA: Establecimiento y Mantención de un Huerto Comercial de Murtilla

D107 | Flower and fruit anatomy

D108 | Fresh-produce handling

US FDA: 7 Tips for Cleaning Fruits, Vegetables

ON THIS PAGE

US United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **INIA** Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference · **UK** United Kingdom · **L** litre, a volume unit

TERMS ON THIS PAGE SIB: Sistema de Información de Biodiversidad The biodiversity information system of Argentina's National Parks Administration.

UK: United Kingdom Identifies the country of the source, guidance or institution.

INIA, Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference. NZ, New Zealand The country identified in the citation or geographic description.

MURTA AND ORANGE DAYLILY: SOURCES

Botanical structure, propagation, growing context and food handling | Checked 20 October 2026

D103 | Murta in Argentina

Administración de Parques Nacionales, SIB: Ugni molinae

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SIB Sistema de Información de Biodiversidad · **UK** United Kingdom · **L** litre, a volume unit · **INIA** Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference · **US** United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source

Illustration 187 Illustration 192 Other source page 1255

TERMS ON THIS PAGE SIB: Sistema de Información de Biodiversidad The biodiversity information system of Argentina's National Parks Administration.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

FDA, Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here. L, Litre One cubic decimetre of volume, or one thousand millilitres.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D109 | Orange daylily

NC State Extension Plant Toolbox: Hemerocallis fulva

Rechecks page 193. Plant habit, rhizomes and single-bloom duration. Inconsistent size metadata and bulb wording not adopted. Read primary reference

D110 | Daylily structure

American Daylily Society: Frequently Asked Questions

Crown, roots, leaf fan, scape and single-flower parts. Other cultivated flower forms can differ. Read primary reference

D111 | Minnesota division method

University of Minnesota Extension: Daylilies

Division, retained fans, leaf trimming and the stated crown depth. Regional advice, reviewed 2026, not an Argentine site specification. Read primary reference

D112 | Florida planting comparison

Sydney Park Brown, UF/IFAS: Daylilies for Florida, CIR620/EP006

Ground-level crown and original depth differ from D111. Broad food wording and fertiliser rates are not imported into the method. Read primary reference

D113 | Cats and lily exposure

US FDA: Lovely Lilies and Curious Cats: A Dangerous Combination

Hemerocallis and Lilium exposure requires prompt veterinary contact. No home treatment or safe ingestion quantity is supplied. Read primary reference

Crown-depth recommendations differ between Minnesota and Florida. The difference is retained, not averaged into a new rule. Photographs are unchanged; no specimen scale is inferred.

Illustration 187 Illustration 192 Other source page 1256

TERMS ON THIS PAGE NC State: North Carolina State University The United States university credited with horticultural or extension information.

ON THIS PAGE

FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **UF/IFAS** University of Florida / Institute of Food and Agricultural Sciences · **US** United States

UF/IFAS: University of Florida Institute of Food and Agricultural Sciences The university unit responsible for the agricultural guidance.

FDA, Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Rechecks page 193. Plant habit, rhizomes and single-bloom duration. Inconsistent size metadata and bulb wording not adopted. Read primary reference

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PLANT REGISTER: NAMES AND EVIDENCE

MATCH THE COMPLETE NAME Each numbered Kew link on pages 197-201 opens a taxon record in Plants of the World Online (POWO). Read its author and accepted-name or synonym status. A shared common name does not establish identity. If a link stops working, search POWO for the printed scientific name and check its author.

KEEP AN OBSERVATION RECORD Use a notebook, camera and millimetre ruler. Record date, locality, habitat and whether the plant is cultivated. Photograph the whole plant, stem nodes, both leaf surfaces and flowers

ON THIS PAGE

UF/IFAS University of Florida / Institute of Food and Agricultural Sciences · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **US** United States

or fruits when present. Put the ruler beside the feature in the same plane. Mark absent evidence as missing; never infer a real size from these thumbnails.

SEPARATE NAME, RANGE AND USE The linked records distinguish native and introduced distributions. Those ranges do not prove the identity of a local plant or its suitability for a site. The former broad regional tags have been removed. Keep any regional flora determination and its date alongside the POWO name used here.

WHAT THE PICTURES ESTABLISH These 77 retained illustrations are a visual index. Their specimen identity, creator, original location and rights are not authenticated in the recovered records. Do not use them as a diagnostic key or as instructions for eating or treating illness. Seek a local botanical determination when identity matters.

FEIJOA | 198 Feijoa sellowiana replaces Acca sellowiana here. POWO treats Acca sellowiana as its synonym; retain both names when searching older cultivation references. [D135, D191]

ROSELLE | 200 Sabdariffa gossypiifolia replaces Hibiscus sabdariffa under the current POWO treatment. The combination dates to 2025; the familiar Hibiscus name remains a search alias, not a second register entry. [D171, D192]

WARRIGAL GREENS | 201 The label now reads Tetragonia tetragonoides. The former tetragonioides spelling occurs in older cited literature. Tetragonia expansa is a synonym in POWO, not a separate plant to add. [D183, D193]

DANDELION AND PEPPERMINT Taraxacum officinale is retained as a familiar label with a note: POWO places it under Taraxacum sect. Taraxacum. That is a section treatment. Mentha × piperita retains the hybrid sign; POWO gives M. aquatica × M. spicata as its parentage. [D133, D166, D194]

AUTHOR NAMES PREVENT FALSE MATCHES The records used here are Berberis microphylla G.Forst., Ziziphus jujuba Mill., Eugenia uniflora L. and Urtica dioica L. A same-spelled name with a different author can lead to a different taxon. [D125, D144, D167, D177]

D135 source D191 source D171 source D192 source D183 source D193 source D133 source D166 source D194 source

Book V | How to use the 77 botanical references | Checked 20-21 October 2026

POWO: Royal Botanic Gardens, Kew. Full name records are linked beside every entry. Observation checklist: editorial method.

Register 197 Register 198 Register 199 Register 200 Register 201 1257

TERMS ON THIS PAGE POWO: Plants of the World Online The botanical reference maintained by the Royal Botanic Gardens, Kew.

OBJECTS, TEXTS AND SOURCE TRAIL

Primary texts, museum records and observations · accessed 28 October 2026

MERU 9

D350 · The Met Cosmological Mandala with Mount Meru; China, 14th century; silk tapestry; 1989.140.

D351 · The Met Jain cosmological map of adhaidvipa; India, 1900; lithograph; 2016.499.3.

ON THIS PAGE

POWO Plants of the World Online · × multiplied by

D352 · Vishnu Purana Book II, chapter 2, especially verses 30-39; McComas Taylor translation, ANU Press, 2021.

D353 · British Library San San May, Buddhist rebirth in different planes of existence, 17 March 2016; Or.14004, f.27.

D354 · Aryabhata Aryabhatiya, Gola 16-19; Walter Eugene Clark translation, 1930, p.69; scan-linked transcription.

D355 · David Rumsey Map Collection Gerard Mercator, Septentrionalium Terrarum descriptio, 1595; first state; list 10805.001.

D356 · NOAA NESDIS Five Things You Didn't Know About the North Pole; geographic pole over the Arctic Ocean.

D357 · Herodotus Histories IV.32-36; A. D. Godley translation, 1921; reports and uncertainty about Hyperboreans.

D358 · NASA Why Do Eclipses Happen? Solar alignment, orbital tilt and the corona.

D359 · NOAA National Geodetic Survey Datums and Reference Frames; why mapped coordinates need an identified reference system.

D360 · Image-use record Met objects are designated Public Domain. Rumsey permits publication with credit; separate sale of facsimiles has different terms.

D361 · U.S. Naval Observatory Rise, Set, and Twilight Definitions; solar-disc size, atmospheric refraction and high-latitude limitations.

Modern artwork: Carlos Verbelen project, October 2026. Original explanatory SVGs: this companion. Historical objects retain their credits. D360 · Image-use record

TERMS ON THIS PAGE ANU: Australian National University The Australian university credited with the cited material.

NOAA: National Oceanic and Atmospheric Administration The United States agency supplying ocean, weather and climate records.

NESDIS, National Environmental Satellite, Data, and Information Service The United States satellite and data service within the National Oceanic and Atmospheric Administration. NASA, National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

U.S.: United States of America Identifies the country or jurisdiction of the source, price or institution.

SVGs: Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp.

D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

D353 · British Library San San May, Buddhist rebirth in different planes of existence, 17 March 2016; Or.14004, f.27.

ON THIS PAGE

NOAA National Oceanic and Atmospheric Administration · **NESDIS** National Environmental Satellite, Data, and Information Service · **NASA** National Aeronautics and Space Administration

D359 · NOAA National Geodetic Survey Datums and Reference Frames; why mapped coordinates need an identified reference system.

D355 · David Rumsey Map Collection Gerard Mercator, Septentrionalium Terrarum descriptio, 1595; first state; list 10805.001.

D361 · U.S. Naval Observatory Rise, Set, and Twilight Definitions; solar-disc size, atmospheric refraction and high-latitude limitations.

TOOLS: SOURCES, OBJECTS AND IMAGE CREDITS

D538 Tesla: Electro-Magnetic Motor, US381968A Issued 1 May 1888; filed 12 October 1887. Original drawing sheet 1 and specification. Public-domain 1888 publication; scan via Google Patents.

D539 Tesla portrait: Library of Congress, LCCN 2014684845 Napoleon Sarony, ca. 1890; Bain News Service. LC-DIG-ggbain-04851. LOC: no known restrictions on publication. Full frame, unretouched; approximate catalogue date.

D540 Whitworth workshop comparator: Science Museum 1871-4 Manchester, 1871; steel and gunmetal. Catalogue accuracy 1/40,000 inch. History and material record only; the caliper photograph is a different, modern instrument.

D541 Vernier caliper photograph: ArtMechanic Photographed 18 March 2004; uploaded 28 June 2005. Wikimedia Commons, CC BY-SA 3.0. Full frame, unretouched. Source describes a 3.58 mm reading; the image shows a 0.02 mm vernier.

D542 NIST: Gage Block Handbook and dimensional comparisons Doiron and Beers, Monograph 180 and related comparison studies. Working references, temperature, contact effects and calibration controls. Example dimensions in this lesson are explicitly assumed.

Evidence for references 427-432 and the retained Book IV opening

Open the titled records for originals. New SVGs and example quantities are teaching constructions. Photo licence

TERMS ON THIS PAGE LCCN: Library of Congress Control Number An identifier for an entry in the United States national library's catalogue.

ca.: Circa (approximately) Before a date, the abbreviation indicates an estimate of when the object was made or the event occurred.

LC-DIG, Library of Congress digital reproduction identifier The prefix identifies a digitised reproduction in the library's collections. LOC, Library of Congress The United States national library, which holds the cited photograph or manuscript.

CC BY-SA: Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

mm: Millimetre A unit of length equal to one thousandth of a metre.

NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

ON THIS PAGE

NOAA National Oceanic and Atmospheric Administration · **BY-SA** Creative Commons Attribution-ShareAlike · **mm** millimetre, 0.001 metre · **NIST** National Institute of Standards and Technology

SVGs, Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TOOLS: SOURCES, OBJECTS AND IMAGE CREDITS

D543 NIST: SI Units - Volume Cubic metre, litre, millilitre and conversions. The 60 L and 50 L cases are calculated internal rectangular volumes, not measured tank capacities.

D544 Mitutoyo EDU-15005A: Decision Rules, TAR, and TUR 2018 technical bulletin on measurement uncertainty and conformity decisions. It does not specify the teaching vernier. The 12.3 mm scale is an original arithmetic example.

D545 Canadian Centre for Occupational Health and Safety: Vises Mounting, work support, jaw liners, damage checks and handle limitations. Bench footprint and counted starter kit are author-selected examples; no structural load rating is supplied.

D546 NASA: Free Fall without Air Resistance Opening BV check: constant-acceleration distance from rest and Galileo's inclined-plane investigations. Its free-fall formula is not a direct prediction for a rolling ball on an incline.

D547 NIST: SI Units - Length Metre, related units and conversion context. The inch is exactly 25.4 mm; 25.4/40,000 = 0.000635 mm. This conversion does not transfer a museum instrument's accuracy to a workshop tool.

D548 NIST TN1297: method definition and simple calibration A result depends on its method, reference uncertainty and possible systematic effects. Repeated readings alone cannot establish all uncertainty components.

Open the titled records for originals. New SVGs and example quantities are teaching constructions.

Evidence for references 427-432 and the retained Book IV opening

TERMS ON THIS PAGE NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

SI: International System of Units (Système international d'unités) The common measurement system built on units such as the metre, kilogram and second.

TAR: Test accuracy ratio Compares the accuracy or tolerance of a device under test with the reference equipment's accuracy.

TUR, Test uncertainty ratio Compares a specified tolerance with the uncertainty of the measurement used to check it. mm, Millimetre A unit of length equal to one thousandth of a metre. NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

SVGs: Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp.

ON THIS PAGE

NIST National Institute of Standards and Technology · **SI** Système international d'unités, the International System of Units · **L** litre, a volume unit · **TAR** Test accuracy ratio Compares the accuracy or tolerance of a device under test with the reference equipment's accuracy · **mm** millimetre, 0.001 metre · **NASA** National Aeronautics and Space Administration · **=** equals

L, Litre One cubic decimetre of volume, or one thousand millilitres. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

HOUSEHOLD DIAGRAMS: EVIDENCE AND LIMITS

Sources checked 19 October 2026 | Diagrams explain decisions; they do not certify a house

D1 | Family communication

FEMA / Ready.gov, Family Emergency Communication Plan

Out-of-area contacts, short messages, paper copies and practice. Agree an alternative when a network or device fails.

D2 | Pantry inspection and rotation

USDA FSIS, Shelf-Stable Food Safety

Reject suspect containers and do not taste to test. Rotation does not make unsafe food safe.

Out-of-area contacts, short messages, paper copies and practice. Agree an alternative when a network or device fails.

Reject suspect containers and do not taste to test. Rotation does not make unsafe food safe.

DOE technical guide distinguishes air sealing from insulation and requires attention to ventilation and combustion safety. No thermal performance, wall specification

D3 | Portable fuel equipment and thermal safety

CDC, What to Do to Protect Yourself During a Power Outage

Portable camping stoves and grills stay outdoors; an open window is not protection from combustion fumes. Seek another shelter when conditions become unsafe.

D4 | Air leakage and insulation

US DOE, Air Sealing: A Guide for Contractors to Share with Homeowners

DOE technical guide distinguishes air sealing from insulation and requires attention to ventilation and combustion safety. No thermal performance, wall specification or savings percentage is inferred.

READ THE EXAMPLES CORRECTLY

The first-day roles, dependency chains, four audit states and floor plan are editorial teaching examples based on the existing methods at PDF 28-38. The floor plan has no scale or site dimensions. A second drawn exit is not proof that a real window or door is a suitable exit. The pantry arithmetic uses hypothetical pack counts and labelled mass.

Return to diagrams: 27 29 31 33 35 37 1175

TERMS ON THIS PAGE FEMA: Federal Emergency Management Agency The United States agency that provides the cited emergency-preparedness guidance.

USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

ON THIS PAGE

FEMA Federal Emergency Management Agency · **USDA** United States Department of Agriculture · **FSIS** Food Safety and Inspection Service · **DOE** Department of Energy · **US** United States · **PDF** Portable Document Format

FSIS: Food Safety and Inspection Service The United States Department of Agriculture service responsible for the food-safety guidance cited here.

CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

DOE: Department of Energy The United States government department responsible for the energy reference cited here.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

READ THE EXAMPLES CORRECTLY

The first-day roles, dependency chains, four audit states and floor plan are editorial teaching examples based on the existing methods at PDF 28-38. The floor plan has no scale or site dimensions. A second drawn exit is not proof that a real window or door is a suitable exit. The pantry arithmetic uses hypothetical pack counts and labelled mass.

TOOLS: SOURCE AND OBJECT RECORDS

D549 Esther Smith, Darning sampler, 1814 The Metropolitan Museum of Art, 57.122.49. Cotton, wool and silk embroidery on linen, 25.4 × 24.8 cm. Bequest of Mabel Herbert Harper, 1957. Museum photograph designated Public Domain; full frame, unretouched. This object is not the practice patch drawn alongside it.

D550 Canadian Conservation Institute: Stitches Used in Textile Conservation CCI Notes 13/10. Material compatibility, relaxed tension and self-couching stitches. The cotton practice kit and its dimensions are original teaching choices. Museum textiles need appropriate conservation judgment; the sample is not a rated structural repair.

D551 National Park Service: Charlestown Navy Yard Ropewalk Building opened in 1838; Alexander Parris, Daniel Treadwell and a 1,325-foot ropewalk. Historical production and reserve capacity. No historical rope strength is transferred to a household model.

D552 National Park Service: Ropemaking at the Charlestown Navy Yard The sequence of fibres, slivers, yarns, strands and rope; opposite component twists. Nine yarn pieces, cardboard tabs and the 15% take-up example are teaching assumptions. No working-load limit is supplied.

Return to the lessons

TERMS ON THIS PAGE cm: Centimetre A unit of length equal to one hundredth of a metre.

CCI, Canadian Conservation Institute The Canadian institution publishing the guidance on caring for collection objects and textiles. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TOOLS: SOURCE AND OBJECT RECORDS

D549 Esther Smith, Darning sampler, 1814 The Metropolitan Museum of Art, 57.122.49. Cotton, wool and silk embroidery on linen, 25.4 × 24.8 cm. Bequest of Mabel Herbert Harper, 1957. Museum photograph designated Public Domain; full frame, unretouched. This object is not the practice patch drawn alongside it.

D550 Canadian Conservation Institute: Stitches Used in Textile Conservation CCI Notes 13/10. Material compatibility, relaxed tension and self-couching stitches. The cotton practice kit and its dimensions are

original teaching choices. Museum textiles need appropriate conservation judgment; the sample is not a rated structural repair.

D551 National Park Service: Charlestown Navy Yard Ropewalk Building opened in 1838; Alexander Parris, Daniel Treadwell and a 1,325-foot ropewalk. Historical production and reserve capacity. No historical rope strength is transferred to a household model.

D552 National Park Service: Ropemaking at the Charlestown Navy Yard The sequence of fibres, slivers, yarns, strands and rope; opposite component twists. Nine yarn pieces, cardboard tabs and the 15% take-up example are teaching assumptions. No working-load limit is supplied.

Return to the lessons

D553 Volta to Banks, 20 March 1800 Royal Society, L&P/11/137. Original letter concerning electricity, with French text and English translation; read 26 June 1800. It supplies historical context, not specifications for a modern battery.

D554 U.S. Energy Information Administration: Measuring Electricity Power in watts and energy over time in watt-hours. The lamp, radio, charging, battery and efficiency values in the lesson are explicitly assumed. Calculations are not measured product performance.

D555 VeraSol: Component-Based Off-Grid Solar Energy Systems 2024 system-design guide. Energy demand, storage, irradiation, derating and component compatibility. The 0.80, 0.85 and 0.70 factors and three peak-sun-hours are author-selected arithmetic examples, not regional standards or a site design.

D556 CPSC: Portable Generator and Carbon Monoxide Safety CPSC 468, March 2022. Outdoor placement at least 20 feet from the home, exhaust direction, maintenance and carbon-monoxide alarms. Twenty feet converts to 6.096 m, rounded here to 6.1 m.

D557 CPSC: Warning About Male-to-Male Extension Cords 31 March 2026. Exposed energized prongs and generator backfeeding create electrocution and fire hazards. The energy drawing is not a wiring diagram. Final cable, protection, mounting and battery decisions require the actual equipment and installation conditions.

TERMS ON THIS PAGE U.S.: United States of America Identifies the country or jurisdiction of the source, price or institution.

CPSC, Consumer Product Safety Commission The United States agency publishing consumer product and generator safety information. m, Metre The base unit of length in the International System of Units. D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

COLLECTED CHAPTER REFERENCES

Sources for shelter, movement, preparedness and regional case studies

References 22 | Shelter: Design, Evidence And Use

rtrait: Wikimedia Commons, “Vitruvio Pollione portrait

”, catalogue record after Staatliche Graphische Sammlung München. Sources checked 18 October 2026.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

ON THIS PAGE

% percent, parts per hundred · **m** metre, a length unit

References 825, 829, 850, 854, 858, 862, 866, 880, 884
https://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan.html

References 825, 829, 850, 854, 858, 862, 866, 880, 884
https://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan.html

References 834, 871
https://www.cdc.gov/drinking-water/about/collecting-rainwater-and-your-health-an-overview.html

References 838, 897, 902, 907
https://www.cdc.gov/water-emergency/about/how-to-create-and-store-an-emergency-water-supply.html

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https://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan.html
https://training.fema.gov/70years/history/undertheumbrella/

References 846 | Food, Conservation And Daily Operation https://www.fda.gov/food/buy-store-serve-safe-food/food-and-water-safety-during-power-outages-and-floods

References 876 | Reverse Osmosis, Ultraviolet Light And Distillation
https://www.cdc.gov/drinking-water/about/about-home-water-treatment-systems.html
https://samueli.ucla.edu/1955-1964/

References 838, 897, 902, 907
https://www.cdc.gov/water-emergency/about/how-to-create-and-store-an-emergency-water-supply.html

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https://www.cdc.gov/drinking-water/about/about-home-water-treatment-systems.html

https://samueli.ucla.edu/1955-1964/

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References 888, 893 https://www.cdc.gov/water-emergency/about/index.html

References 1216 | Argentina: Costs, Land And Aviation

References 1217 | Fifteen Estates: Peso Comparison Sources: AR01; recovered Batch 50 Cost_Scenarios.json | Checked 19 October 2026

References 1233 | Turn The Scenario Into An Argentine Budget Sources: Original cost basis PDF 1073-1074; AR01. Equations are accounting identities, not local price evidence. | Checked 19 October 2026

Sources: AR01; existing Book III cost basis, PDF 1073-1074 | Checked 19 October 2026

References 1240 | Before A Property Becomes A Costed Project Sources: AR02-AR16; original estate assumptions retained | Checked 19 October 2026

References 1216 | Argentina: Costs, Land And Aviation

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https://www.cdc.gov/drinking-water/about/about-home-water-treatment-systems.html

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Sources: AR01; existing Book III cost basis, PDF 1073-1074 | Checked 19 October 2026

Sources for shelter, movement, preparedness and regional case studies

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References 888, 893 https://www.cdc.gov/water-emergency/about/index.html

References 1217 | Fifteen Estates: Peso Comparison Sources: AR01; recovered Batch 50 Cost_Scenarios.json | Checked 19 October 2026

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https://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan.html

https://training.fema.gov/70years/history/undertheumbrella/

TERMS ON THIS PAGE PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

IMAGE, OBJECT AND CURRENCY RECORDS

Evidence and reuse details for the health, household and estate sections

D558 Human iris photograph

Shillier, photographed 24 March 2012; current Commons version uploaded 26 March 2012 and described as brighter. CC BY-SA 3.0. Used full frame without editorial retouching. It illustrates visible anatomy only and is not a participant image from either iridology study.

Licence

D559 Asellius, De lactibus sive lacteis venis, 1627

Wellcome Library, London, L0021461, plate III. The selected Commons scan is credited under CC BY 4.0. Historical anatomical plate associated with animal dissection, not a modern human scan. Full frame, unretouched here. Wellcome object: rkd3ds8a.

Study and anatomical evidence

The existing health records D511-D512 and D518-D519 retain the anatomical sources and the 1979 and 1988 blinded studies. The new route and study diagrams are explanatory constructions. They are not diagnostic tests or copied historical plates.

Health evidence records

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D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

D560 Banco de la Nación Argentina: Personas, dollar banknotes

Observed 4 November 2026, displayed 17:00 update: USD billetes buying ARS 1,520; selling ARS 1,570. Tables use selling 1,570. The separate divisas quote is not used. This dated reading is a conversion convention, not a guarantee of execution, access or future price.

D561 Ámbito: dollar blue closing report, 4 November 2026

ON THIS PAGE

BY-SA Creative Commons Attribution-ShareAlike · **BY** Attribution condition in a Creative Commons licence · **USD** United States dollar · **ARS** Argentine peso

Article time 16:16. City-operator survey: buying ARS 1,545; selling ARS 1,565. Tables use selling 1,565. Other intraday reports differ. Informal-market survey, not an official universal rate or a recommendation to transact.

Original drawings and new opening illustrations

The heat-pump stand schedules are transcribed from the preferred English ZeusC drawings at references 910-918. Stock lengths, kerf, density and the 1:10 card model are stated teaching assumptions. The three section openings are original thematic illustrations, not photographs, approved designs or evidence of built facilities.

Estate totals are recovered from inherited ARS M totals at 1,540/USD; rounding introduces less than USD 0.33 per bound before new conversions. Original planning assumptions remain.

TERMS ON THIS PAGE USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

IMAGE, OBJECT AND CURRENCY RECORDS

Evidence and reuse details for the health, household and estate sections

D560 Banco de la Nación Argentina: Personas, dollar banknotes

Observed 4 November 2026, displayed 17:00 update: USD billetes buying ARS 1,520; selling ARS 1,570. Tables use selling 1,570. The separate divisas quote is not used. This dated reading is a conversion convention, not a guarantee of execution, access or future price.

D561 Ámbito: dollar blue closing report, 4 November 2026

Article time 16:16. City-operator survey: buying ARS 1,545; selling ARS 1,565. Tables use selling 1,565. Other intraday reports differ. Informal-market survey, not an official universal rate or a recommendation to transact.

Original drawings and new opening illustrations

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TERMS ON THIS PAGE USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

SHELTER: SOURCES, OBJECTS AND MEASUREMENTS

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ARS Argentine peso · **USD** United States dollar

D562 Marion Post Wolcott: the Allen family storage house, November 1940 Southern Appalachian Project near Barbourville, Knox County, Kentucky. Library of Congress, Prints & Photographs Division, FSA/OWI Black-and-White Negatives; LC-USF34-056442-D, digital ID fsa.8c14211. The catalogue identifies the photographer and month. Public-domain collection, no known restrictions. Full image, unretouched; its containers are not evidence of a safe canning process.

D564 USDA FSIS: Is food in damaged cans dangerous? Container defects including leakage, swelling and serious dents. Package inspection is a rejection screen, not a microbiological test. The book does not advise tasting suspect food or using an old photograph as a preservation recipe.

D565 USDA FSIS: Will commercially canned foods last forever? Corrosion, handling damage, elevated temperature and periodic pantry review. Recorded lot, receipt and manufacturer information should accompany any rotation decision. The example lot codes and consumption rate are author-selected assumptions.

Photographs are documentary records. SVGs, lot counts, dimensions and calculated examples are original teaching constructions.

Return to pantry Return to heat and cold

TERMS ON THIS PAGE FSA/OWI: Farm Security Administration and Office of War Information The United States agencies behind the historical documentary photograph collection.

ID: Identifier or identification A label that distinguishes one record, object or sample from another.

USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

FSIS: Food Safety and Inspection Service The United States Department of Agriculture service responsible for the food-safety guidance cited here.

SVGs: Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp.

D566 NIST: IMG_1238, airtightness-test photograph, 13 December 2011 National Institute of Standards and Technology, Net-Zero Energy Residential Test Facility. Original NIST Flickr photograph 6937667150, 4,320 × 3,240 pixels. U.S. government work, public domain in the United States; credit NIST. Full frame, unretouched. A visible fan is test equipment, not a substitute for permanent ventilation.

D567 NIST Technical Note 1847: Design Challenges of the NZERTF Betsy Pettit, Cathy Gates, A. Hunter Fanney and William M. Healy, March 2015. Table 3, printed page 40, reports 573 m^3/h at a 50 Pa differential and 0.45 air changes per hour for the December 2011 construction stage. Use the report values; a summary web page rounds them differently. These are pressurization-test results, not normal occupied-room ventilation rates.

D568 PNNL Building America Solution Center: Heat Flow Conduction, convection, radiation, assembly resistance and installation defects. The book expresses the area-temperature-resistance relation in SI units and gives a separate assumed 12 m^2 example. It excludes air exchange, other surfaces, bridges, solar gain and changing conditions. It is not a whole-building load calculation.

ON THIS PAGE

USDA United States Department of Agriculture · **FSIS** Food Safety and Inspection Service · **×** multiplied by · **NIST** National Institute of Standards and Technology · **NZERTF** Net-Zero Energy Residential Test Facility · **m^3** cubic metre, a volume unit · **Pa** pascal, pressure · **SI** Système international d'unités, the International System of Units · **m^2** square metre, an area unit

D569 DOE Weatherization Job Aid 11-1: Exterior-door weatherstripping DOE/GO-102023-5934, June 2024; published online 1 July 2024. Diagnose fit, measure, fit the supplied profile, fasten as directed and verify door operation. The 0.90 × 2.00 m opening and 10% procurement allowance here are illustrative. No photographs from this contractor-produced job aid are reproduced.

D570 CDC: Avoiding Carbon Monoxide Poisoning Guidance on combustion equipment during outages, including generators, grills and gas ovens. These warnings concern actual exposure pathways. A small sealed room, an open window or a carbon-monoxide alarm does not make inappropriate indoor combustion safe.

TERMS ON THIS PAGE NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

U.S.: United States of America Identifies the country or jurisdiction of the source, price or institution.

NZERTF, Net-Zero Energy Residential Test Facility The measurement house operated by the United States National Institute of Standards and Technology. m^3, Cubic metre The volume of a cube with edges one metre long. It holds one thousand litres.

PNNL, Pacific Northwest National Laboratory The United States national laboratory credited with the building-science reference. SI, International System of Units (Système international d'unités) The common measurement system built on units such as the metre, kilogram and second.

m^2, Square metre The area of a square with sides one metre long. DOE, Department of Energy The United States government department responsible for the energy reference cited here. CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

SVGs, Scalable Vector Graphics A drawing format built from shapes, paths and text. A figure can be enlarged while its lines stay sharp. m, Metre The base unit of length in the International System of Units. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D569 DOE Weatherization Job Aid 11-1: Exterior-door weatherstripping DOE/GO-102023-5934, June 2024; published online 1 July 2024. Diagnose fit, measure, fit the supplied profile, fasten as directed and verify door operation. The 0.90 × 2.00 m opening and 10% procurement allowance here are illustrative. No photographs from this contractor-produced job aid are reproduced.

D570 CDC: Avoiding Carbon Monoxide Poisoning Guidance on combustion equipment during outages, including generators, grills and gas ovens. These warnings concern actual exposure pathways. A small sealed room, an open window or a carbon-monoxide alarm does not make inappropriate indoor combustion safe.

D571 NIST: NZERTF Basement, 3 January 2013 National Institute of Standards and Technology; original NIST Flickr image 8622935546. The catalogue identifies the west side of the basement, solar storage, heat-pump water heating and plumbing distribution. U.S. government work, public domain in the United States. Full frame, unretouched, 3,744 × 2,104 pixels. The house section opposite is a separate teaching diagram, not an as-built drawing of this facility.

D572 NIST: Annual Performance of a Two-Speed Heat Pump at the NZERTF William V. Payne; publication record dated 21 January 2016. First test year: 1 July 2013 to 30 June 2014. The house consumed 13,039 kWh and its 10.2 kW photovoltaic array produced a 484 kWh annual surplus. The 13,523 kWh generation shown

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DOE Department of Energy · **m** metre, a length unit · **%** percent, parts per hundred · **×** multiplied by · **m^3** cubic metre, a volume unit · **SI** Système international d'unités, the International System of Units · **m^2** square metre, an area unit · **NZERTF** Net-Zero Energy Residential Test Facility · **NIST** National Institute of Standards and Technology · **kWh** kilowatt-hour, energy · **kW** kilowatt, 1,000 watts

here is the sum of those reported figures. Annual net energy does not establish islanding capability, stored energy or outage endurance.

D573 U.S. Department of Energy: Consumer Guide to Home Energy Assessments DOE/EE-2477, 2021. A whole-home assessment uses utility records, occupant concerns and building inspection; professional methods can include blower-door testing and thermography. The six-card household audit in this lesson is an author-designed record method. It is not an energy rating, electrical inspection or pressure-test procedure.

D574 NIST: Domestic Water Heating at the Residential Test Facility Describes solar thermal and heat-pump water heating, plumbing distribution and monitored system interactions. A heat-pump water heater takes heat from surrounding air and can increase the space-heating burden in winter. Pipe layout, ambient conditions and equipment mode therefore belong in the same service record; component presence alone does not prove performance.

Photographs are documentary records. The service section, ledger, route, clearances and tabletop model are teaching constructions.

Return to home audit Return to inspection

NZERTF: Net-Zero Energy Residential Test Facility The measurement house operated by the United States National Institute of Standards and Technology.

kWh, Kilowatt-hour A unit of energy. One kilowatt supplied for one hour equals one kilowatt-hour, or 1,000 watt-hours. kW, Kilowatt A unit of power equal to one thousand watts. It states the rate of energy use or delivery. DOE, Department of Energy The United States government department responsible for the energy reference cited here. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D575 Walt Jennings / FEMA: Midland Beach recovery, 10 November 2012 Staten Island, New York; photo ID 783097, VIRIN 121110-S-0349J-001. The catalogue identifies residents removing water-soaked furniture after Hurricane Sandy. Public domain; credit Walt Jennings/FEMA. Full-frame published 2,000-pixel rendition, unretouched by the book; the catalogue master is larger. The photograph is not a clearance certificate or an instruction to copy the handling shown. Use does not imply agency endorsement.

D576 U.S. Environmental Protection Agency: Coming Home Flood re-entry guidance: inspect from outside for damage such as sagging roofs, leaning walls, new cracks and missing supports; obtain appropriate clearance before entering. Electrical, structural, gas and water hazards require separate decisions. U.S. guidance is a hazard reference, not a substitute for local authorities or Argentine, European or other building requirements.

D577 CDC: Reentering Your Flooded Home Safely Guidance dated 24 August 2026. Use daylight or battery lighting; do not enter water to reach electrical controls. Damaged electrical equipment needs qualified assessment before restoration. Suspected gas leakage requires leaving the area and contacting the utility or emergency service from safety. Water and contamination checks remain separate from visible dryness.

D578 U.S. Fire Administration: Home Fire Escape Plans Map doors and windows, identify usable escape alternatives, keep routes clear, choose an outside meeting place and practise with the household. The 8 × 6

ON THIS PAGE

NIST National Institute of Standards and Technology · **NZERTF** Net-Zero Energy Residential Test Facility · **kWh** kilowatt-hour, energy · **kW** kilowatt, 1,000 watts · **FEMA** Federal Emergency Management Agency · **VIRIN** Visual Information Record Identification Number · **m** metre, a length unit · **×** multiplied by

m plan is invented for instruction. A drawn window does not become a usable exit until its opening, sill, landing and the occupant's ability have been checked; the plan does not certify any building.

D579 U.S. Fire Administration: Fire Safety for People with Disabilities Plan around actual movement, hearing, sight and assistance needs, including suitable alarm modes and practice. The 850 mm opening, 650 mm occupied envelope and 1:25 tabletop model are explicit teaching assumptions. Their arithmetic is not a building-code minimum, wheelchair specification or accessibility approval. Validate a real route with its user and appropriate professional advice.

TERMS ON THIS PAGE FEMA: Federal Emergency Management Agency The United States agency that provides the cited emergency-preparedness guidance.

VIRIN: Visual Information Record Identification Number The identifier used for United States military imagery.

CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

m: Metre The base unit of length in the International System of Units.

SHELTER: SOURCES, OBJECTS AND MEASUREMENTS

D575 Walt Jennings / FEMA: Midland Beach recovery, 10 November 2012 Staten Island, New York; photo ID 783097, VIRIN 121110-S-0349J-001. The catalogue identifies residents removing water-soaked furniture after Hurricane Sandy. Public domain; credit Walt Jennings/FEMA. Full-frame published 2,000-pixel rendition, unretouched by the book; the catalogue master is larger. The photograph is not a clearance certificate or an instruction to copy the handling shown. Use does not imply agency endorsement.

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D578 U.S. Fire Administration: Home Fire Escape Plans Map doors and windows, identify usable escape alternatives, keep routes clear, choose an outside meeting place and practise with the household. The 8 × 6 m plan is invented for instruction. A drawn window does not become a usable exit until its opening, sill, landing and the occupant's ability have been checked; the plan does not certify any building.

D579 U.S. Fire Administration: Fire Safety for People with Disabilities Plan around actual movement, hearing, sight and assistance needs, including suitable alarm modes and practice. The 850 mm opening, 650 mm occupied envelope and 1:25 tabletop model are explicit teaching assumptions. Their arithmetic is not a building-code minimum, wheelchair specification or accessibility approval. Validate a real route with its user and appropriate professional advice.

ON THIS PAGE

m metre, a length unit · **×** multiplied by · **mm** millimetre, 0.001 metre · **FEMA** Federal Emergency Management Agency · **VIRIN** Visual Information Record Identification Number

Photographs are documentary records. The service section, ledger, route, clearances and tabletop model are teaching constructions.

Return to home audit Return to inspection

TERMS ON THIS PAGE FEMA: Federal Emergency Management Agency The United States agency that provides the cited emergency-preparedness guidance.

ID: Identifier or identification A label that distinguishes one record, object or sample from another.

VIRIN: Visual Information Record Identification Number The identifier used for United States military imagery.

U.S.: United States of America Identifies the country or jurisdiction of the source, price or institution.

D580 Sharon C. Park / NPS: Maintaining the Exteriors of Small and Medium Size Historic Buildings Preservation Brief 47, June 2007, page 2, Figure 1: protection of paint during brass polishing and a patinated fitting that should not be polished. Photographs credited to Sharon C. Park under the publication's default attribution. NPS permits reproduction of the publication and author photographs. Native-resolution extraction of the two printed photographic figures, without retouching. Publication date is not capture date. Hinge and ledger are separate teaching constructions.

D581 Canadian Centre for Occupational Health and Safety: Hand Tools, Screwdrivers Match driver type and size to the screw head; keep the shaft aligned, secure loose stock and use appropriate eye protection. Damaged tips, improvised prying and excessive force can cause injury or damage. A plastic handle alone is not electrical insulation. The six-hole hinge is an illustrative part, not a rated fitting; its drawing supplies no replacement screw dimensions or torque.

D582 Smithsonian: Edison bamboo filament lamp, about 1880 National Museum of American History, EM.310579.01, accession 123470. About 1880; wooden-mogul base, bamboo filament and platinum clamps; catalogue height 17.78 cm. Gift from Frank A. Wardlaw, Jr. and Frank A. Wardlaw. Image NMAH-RWS2011-00734-004, Smithsonian Open Access, public domain. Full-frame 2,662 × 4,000-pixel rendition, unretouched; a larger catalogue master exists. No light output, power or life rating is inferred.

D583 U.S. Energy Information Administration: Measuring Electricity Watts describe power; watt-hours and kilowatt-hours describe energy over time. The 5 W lamp, 3 W radio, 50 Wh store, 80% usable fraction and 2 W standby draw are explicit teaching assumptions. They are not measured product performance. Load energy is summed as power multiplied by operating time; usable energy and output-power capability are different constraints.

D584 Federal Trade Commission: Shopping for Light Bulbs Consumer guidance, August 2023. Compare lumens for light output and watts for electrical demand. Its approximate comparison is 800 lumens from a traditional 60 W bulb or a roughly 9 W LED. The four-hour energy calculation is added here for instruction. These are comparison examples, not ratings of the Smithsonian object. Colour appearance and light distribution also affect task suitability.

Photographs document identified objects or treatments. New diagrams, the repair entry and energy budgets are teaching constructions.

Return to repair register Return to light and power

ON THIS PAGE

NPS National Park Service, United States · **cm** centimetre, 0.01 metre · **×** multiplied by · **W** watt, power · **Wh** watt-hour, energy · **%** percent, parts per hundred · **LED** Light-emitting diode

TERMS ON THIS PAGE NPS: National Park Service The United States agency responsible for the park, site or historical interpretation cited here.

cm: Centimetre A unit of length equal to one hundredth of a metre.

NMAH, National Museum of American History The Smithsonian museum holding the object named in the catalogue entry. U.S., United States of America Identifies the country or jurisdiction of the source, price or institution. Wh: Watt-hour A unit of energy. One watt delivered for an hour supplies one watt-hour.

LED, Light-emitting diode An electronic component that emits light when electric current passes in its conducting direction. W, Watt The unit of power. One watt equals one joule of energy transferred per second. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D580 Sharon C. Park / NPS: Maintaining the Exteriors of Small and Medium Size Historic Buildings Preservation Brief 47, June 2007, page 2, Figure 1: protection of paint during brass polishing and a patinated fitting that should not be polished. Photographs credited to Sharon C. Park under the publication's default attribution. NPS permits reproduction of the publication and author photographs. Native-resolution extraction of the two printed photographic figures, without retouching. Publication date is not capture date. Hinge and ledger are separate teaching constructions.

D581 Canadian Centre for Occupational Health and Safety: Hand Tools, Screwdrivers Match driver type and size to the screw head; keep the shaft aligned, secure loose stock and use appropriate eye protection. Damaged tips, improvised prying and excessive force can cause injury or damage. A plastic handle alone is not electrical insulation. The six-hole hinge is an illustrative part, not a rated fitting; its drawing supplies no replacement screw dimensions or torque.

D582 Smithsonian: Edison bamboo filament lamp, about 1880 National Museum of American History, EM.310579.01, accession 123470. About 1880; wooden-mogul base, bamboo filament and platinum clamps; catalogue height 17.78 cm. Gift from Frank A. Wardlaw, Jr. and Frank A. Wardlaw. Image NMAH-RWS2011-00734-004, Smithsonian Open Access, public domain. Full-frame 2,662 × 4,000-pixel rendition, unretouched; a larger catalogue master exists. No light output, power or life rating is inferred.

D583 U.S. Energy Information Administration: Measuring Electricity Watts describe power; watt-hours and kilowatt-hours describe energy over time. The 5 W lamp, 3 W radio, 50 Wh store, 80% usable fraction and 2 W standby draw are explicit teaching assumptions. They are not measured product performance. Load energy is summed as power multiplied by operating time; usable energy and output-power capability are different constraints.

D584 Federal Trade Commission: Shopping for Light Bulbs Consumer guidance, August 2023. Compare lumens for light output and watts for electrical demand. Its approximate comparison is 800 lumens from a traditional 60 W bulb or a roughly 9 W LED. The four-hour energy calculation is added here for instruction. These are comparison examples, not ratings of the Smithsonian object. Colour appearance and light distribution also affect task suitability.

Photographs document identified objects or treatments. New diagrams, the repair entry and energy budgets are teaching constructions.

Return to repair register Return to light and power

ON THIS PAGE

NPS National Park Service, United States · **cm** centimetre, 0.01 metre · **×** multiplied by · **W** watt, power · **Wh** watt-hour, energy · **%** percent, parts per hundred · **LED** Light-emitting diode

TERMS ON THIS PAGE NPS: National Park Service The United States agency responsible for the park, site or historical interpretation cited here.

SHELTER: SOURCES, OBJECTS AND MEASUREMENTS

D585 Electrical Safety First: Power Banks and Portable Chargers Follow the product instructions, use the intended devices and supplied or manufacturer-approved connections, and protect packs from heat, water and damage. Do not dismantle or attempt to repair a faulty pack. Charge uncovered in a ventilated location while attended; stop using a damaged or abnormally hot pack. Pass-through operation must be supported by the product. The compatibility chain is an explanatory diagram, not a battery assembly or mains installation plan.

D586 U.S. Food and Drug Administration: Home Use Devices and Power Outages Home Use Devices: How to Prepare for and Handle Power Outages for Medical Devices that Require Electricity. Record each device, supplier, clinician and emergency contacts. Establish approved alternative power, expected backup duration, treatment interruption instructions and where to go. The lamp-and-radio energy example cannot establish medical-device backup adequacy.

D587 U.S. Consumer Product Safety Commission: Winter Weather Safety Tips Release 26-326, 16 March 2026. Portable fuel generators belong outdoors, at least 20 ft from the house, with exhaust directed away from buildings' entrances; never in a garage, shed, porch or carport. Twenty feet equals 6.096 m, rounded here to 6.1 m. Follow weather and operating instructions and maintain working carbon-monoxide alarms. The distance is not a guarantee against every site-specific exposure.

D588 Occupational Safety and Health Administration: Using Portable Generators Safely Fact sheet FS-3286, September 2005. A generator must not energize a building electrical system without a properly installed transfer switch and qualified electrician. Direct attachment can energize external wiring and endanger utility workers. Used here for the connection boundary, not as a complete current Argentine, European or U.S. installation specification.

D589 FoodSafety.gov: Food Safety During Power Outage Closed-door guidance: a refrigerator keeps food safe for up to four hours; a full freezer approximately 48 hours, a half-full freezer approximately 24 hours. Evaluate food using the item-specific time and temperature tables, not appearance or taste. A return of power does not erase earlier temperature exposure. The teaching battery budget includes no refrigeration load.

TERMS ON THIS PAGE U.S.: United States of America Identifies the country or jurisdiction of the source, price or institution.

m: Metre The base unit of length in the International System of Units.

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SHELTER: SOURCES, OBJECTS AND ARGENTINE MATERIALS

D590 Argentina: Servicio Meteorológico Nacional, temperature-extreme alerts SAT-Temperaturas Extremas distinguishes heat and cold risks by locality. Consult the latest warning and its validity, then record indoor conditions and vulnerable occupants. An outdoor alert colour is not a measured indoor temperature. The locality-specific planning prompts on reference 43 are editorial applications, not regional design temperatures.

D591 Argentina: Secretaría de Energía, Calefacción Guidance on draught seals, use of curtains and shutters, clothing and solar protection. Its 20-22 °C winter comfort range for much of Argentina is not a clinical safety threshold. The removable mesh screen and sewn roll are original workshop examples. Neither has a certified thermal, fire, structural or wind rating; required combustion ventilation must remain open.

https://www.argentina.gob.ar/energia/eficiencia-energetica/calefaccion

https://www.argentina.gob.ar/node/317635

D592 Hospital Posadas: carbon-monoxide prevention Official guidance dated 23 May 2022. Gas appliances require a gasista matriculado; ventilation and exhaust paths must remain clear. Carbon monoxide is invisible and odourless. Suspected exposure requires leaving the space and urgent medical assessment. A draught roll must never seal a required air supply. The preceding generator and electrical-connection limits remain in force.

D593 CDC: About Heat and Your Health Heat action, hydration, medicines and vulnerable occupants. CDC limits fan use to indoor temperatures below 90 °F, about 32.2 °C; a lower reading alone does not establish safety. Follow personal fluid restrictions and medication advice. A fan moves air and does not refrigerate a room. The local Argentine SMN warning is the forecast source for this chapter.

ON THIS PAGE

m metre, a length unit · **°C** degree Celsius, a temperature unit · **SMN** Servicio Meteorológico Nacional

D594 CDC: Preventing Hypothermia Signs include shivering, exhaustion, confusion, fumbling, slurred speech and drowsiness. Hypothermia can occur in cool, wet conditions, not just freezing weather. Seek urgent care, move gently to shelter, remove wet clothes and warm the body's centre. Do not give drinks to an unconscious person. These pages do not replace a full first-aid course.

Original diagrams and stock arithmetic are teaching examples. Listed prices do not establish product suitability or a complete installed cost.

Return to heat and cold Return to sanitation

TERMS ON THIS PAGE SAT-Temperaturas Extremas: Sistema de Alerta Temprana por Temperaturas Extremas The Argentine weather service's early warning system for extreme temperatures.

SMN, Servicio Meteorológico Nacional Argentina's national weather service. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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D595 NIOSH: Heat-related Illnesses Confusion, altered consciousness, seizures and hot skin, with or without sweating, can indicate heat stroke. Obtain emergency medical help and begin rapid cooling without waiting for a thermometer. The chapter uses cool wet cloths and removal from heat as immediate actions. Local emergency contacts must be recorded before an outage; U.S. service numbers are not imported as Argentine coverage.

D596 World Heritage site: Maison du Docteur Curutchet La Plata, Argentina; project dated 1949. Le Corbusier organised the doctor's work and living spaces separately and protected street-facing glass with solar-control elements. The identified photograph supports observation of the facade, not measured energy savings. The mesh example is a different, temporary device; it does not reproduce this building's concrete construction.

Photographed 25 September 2013. JPEG: 4,000 × 3,000 pixels; displayed upright using its EXIF orientation. Own-work photograph, CC BY-SA 3.0 Unported: https://creativecommons.org/licenses/by-sa/3.0/. Full frame, scaled for the page, with no retouching or generative alteration. The work remains under its stated licence. Credit and original are linked here in the closing reference library.

D598 Pilemar: 90% shade mesh, two metres wide Catalogue snapshot, 5 November 2026: ARS 5,000 per linear metre, supplied as 1 m long × 2 m wide. Seller describes Raschel mesh with UV treatment and a nominal 90% shade specification. This is not a 90% reduction in room temperature, cooling demand or transmitted heat. Displayed price is a procurement observation, not a reserved quote.

D599 Pilemar: twenty reinforced plastic shade clips Catalogue snapshot, 5 November 2026: ARS 4,000 for twenty grampas plásticas. The example uses eight, leaving twelve. Neither the listing nor the diagram supplies a wind-load capacity for the finished installation. Attachment locations and support strength

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°C degree Celsius, a temperature unit · **NIOSH** National Institute for Occupational Safety and Health · **JPEG** Joint Photographic Experts Group · **EXIF** Exchangeable image file format · **BY-SA** Creative Commons Attribution-ShareAlike · **×** multiplied by · **ARS** Argentine peso · **UV** Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light · **%** percent, parts per hundred · **m** metre, a length unit

require assessment. The basket includes the whole purchased pack, not a fictitious purchase of eight loose clips.

Return to heat and cold Return to sanitation Photo licence

D597 Federico Pinto: Frente Casa Curutchet

D599 Pilemar: twenty reinforced plastic shade clips Catalogue snapshot, 5 November 2026: ARS 4,000 for twenty grampas plásticas. The example uses eight, leaving twelve. Neither the listing nor the diagram supplies a wind-load capacity for the finished installation. Attachment locations and support strength require assessment. The basket includes the whole purchased pack, not a fictitious purchase of eight loose clips.

TERMS ON THIS PAGE NIOSH: National Institute for Occupational Safety and Health The United States agency conducting research on workplace health and safety.

JPEG: Joint Photographic Experts Group The group whose name identifies a widely used photographic image-compression format.

EXIF: Exchangeable image file format The metadata convention that can store camera settings, dates and location in a photograph.

CC BY-SA: Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. UV, Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light. m: Metre The base unit of length in the International System of Units.

D600 Centro de Materiales: four-millimetre polypropylene cord Catalogue snapshot, 5 November 2026: soga trenzada polipropileno 4 mm, ARS 175 per metre; catalogue states prices include IVA. Five metres cost ARS 875. Eight illustrative 0.60 m ties use 4.80 m, leaving 0.20 m before cutting losses. Diameter does not establish certified breaking strength, wind resistance or safe support spacing.

D601 Banco de la Nación Argentina: banknote exchange rate Displayed banknote selling rate for 4 November 2026, updated 17:00: ARS 1,570 per USD. Dividing the ARS baskets by this rate gives comparison equivalents, not dollar selling prices or the pesos obtained when selling dollars. No fees, delivery or exchange spread are included. This is distinct from the blue-dollar reference retained elsewhere in the book.

D602 Public Health, Seattle and King County: emergency toilets Temporary containment: two heavy-duty bags, absorbent cover, closed lids and secure removal at least daily. Handwashing belongs nearby; food areas stay separate. Local U.S. burial distances and garbage permissions are not transferred to Argentina. This lesson selects an intact existing toilet as the support, with no sewer backup; a new user-supporting frame needs a separate assessed design.

D603 Argentina: Resolución 378-E/2017 and dry-toilet guidelines National health guidance approved 4 April 2017, published 7 April. The annex concerns urine-diverting dry sanitation, including isolation, storage, treatment, operation and local oversight. A bag-lined emergency toilet is not that complete system. Climate, flooding, groundwater and removal arrangements matter. No universal burial permission, composting time or safe agricultural reuse follows from this example.

ON THIS PAGE

ARS Argentine peso · **BY-SA** Creative Commons Attribution-ShareAlike · **IVA** Impuesto al valor agregado Argentine value-added tax · **mm** millimetre, 0.001 metre · **m** metre, a length unit · **USD** United States dollar

D604 John Snow: map from the 1855 parish cholera report Wellcome Collection, image L0072917, Public Domain Mark. Map from pages 106-107 of the report on the autumn 1854 cholera outbreak in St James, Westminster, presented in July 1855. Lithograph credited on the sheet to C. F. Cheffins. Full-frame unretouched digital image. Death marks and water pumps support spatial investigation; the map alone does not establish a complete causal mechanism.

ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

IVA, Impuesto al valor agregado Argentine value-added tax. A listed price may include it or show it separately. USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

SHELTER: SOURCES, OBJECTS AND ARGENTINE MATERIALS

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Original diagrams and stock arithmetic are teaching examples. Listed prices do not establish product suitability or a complete installed cost.

Return to heat and cold Return to sanitation

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D605 Brewery Supplies: twenty-litre bucket with lid Catalogue snapshot, 5 November 2026: ARS 13,980 including the lid, displayed total price; two cost ARS 27,960. Sanitario in this catalogue describes an alimentary transfer bucket, not a certified human-supporting toilet. The example assigns buckets only to labelled waste containment. Check the actual closure and usable capacity; never return a waste container to drinking-water or food service.

D606 Papelera Manapel: 80 × 110 cm refuse bags, ten-pack Catalogue snapshot, 5 November 2026: ARS 2,700 per ten-pack before payment discounts; advertised minimum order ARS 10,000. Four packs cost ARS 10,800. The listing does not establish thickness or suitability for human waste. This is a price benchmark only: confirm heavy-duty specification, closure, fit and waste-handler acceptance before selection. Different bags may change the price.

D607 CDC: About Handwashing Wash with soap and clean running water after toilet use, waste handling and glove removal. Scrub for at least twenty seconds, rinse and dry cleanly. Handwashing water is additional to drinking and cooking stocks. Reference 47 begins the separate handwashing and clean-zone topic. The counted starter supplies here do not predict a household's duration of service.

D608 Washington Department of Health: Toilet Use During Emergencies A functioning alternative toilet is preferable when available. Emergency options include converting an existing fixture or using a suitable container, double bagging, absorbent material and secure storage. This book uses the intact fixture only without backup, keeps the trap and prohibits flushing into a failed system. It does not transfer Washington's temporary burial advice or waste permissions to Argentina. Bags and dry cover do not establish pathogen treatment.

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cm: Centimetre A unit of length equal to one hundredth of a metre.

CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

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Return to heat and cold Return to sanitation

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HANDWASHING: EVIDENCE, MATERIALS AND IMAGE CREDITS

D609 Argentina, Ministry of Health: Lavado de manos National instructions specify network or potabilised water, soap, twenty seconds of rubbing including wrists, rinsing and clean drying. Wash after toilet use, handling waste and before food contact. Supervise children. The station is an assembly example for a household, not approval for a commercial food business or healthcare service.

D610 CDC: Personal Hygiene During an Emergency Guidance dated 5 August 2024 supports handwashing with a large water jug when piped water is unavailable. Follow local water advisories. Soap, rubbing, rinsing and drying are distinct operations. Alcohol hand rub is not a complete substitute when hands are visibly dirty or contaminated with some chemicals or organisms. No sanitizer recipe is given in this pair.

D611 WHO and UNICEF: Guidelines on hand hygiene in community settings, chapter 4 Recommendations address accessible facilities, reliable soap and water, drainage, maintenance and protection of supplies. Reported study water use is not a universal household ration. Reference 48 uses explicitly assumed trial readings and an author-selected contingency. The quantity must be measured again with the actual tap and users; it excludes drinking, cooking and other household water.

D612 Veronica Bekoe: biographical account The inventor’s site identifies the Ghanaian biological scientist and her Ghana Health Service career, 1972-2008. It records a Ghana Health Service award in 2005 for the Veronica Bucket. The chapter gives that documented milestone rather than an uncertain invention year. A photographed later installation is not asserted to be the original prototype or a tested Argentine design.

Teaching calculations are explicitly assumed. Supplier prices are dated observations; an assembled station still requires local checks.

Return to handwashing Return to assembly and quantities

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WHO: World Health Organization The United Nations agency for international public health.

UNICEF: United Nations Children’s Fund The organisation’s initials come from its original name, United Nations International Children’s Emergency Fund.

HANDWASHING: EVIDENCE, MATERIALS AND IMAGE CREDITS

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Return to handwashing Return to assembly and quantities

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D614 Industrias Soch: ten-litre water jug with tap Argentine manufacturer catalogue, checked 4 November 2026. Displayed total ARS 32,800 before delivery; price is not a reserved quote. Listed length 28 cm, width 16 cm, height 34 cm; volume 10 L. The tap is shipped reversed inside the orange cap. Manufacturer instructions place the tap and O-ring outwards and refit the white nut. Air vent permits flow. Certification claims were not independently audited.

D615 Brewery Supplies: twenty-litre lidded bucket Catalogue checked 4 November 2026: ARS 13,980 including lid, before delivery. Assigned solely to used handwashing water in this example. A nominal twenty-litre capacity is not a safe lifting load. Mark an actual five-litre emptying level with a measuring jug; lower it for the person handling it. Once used for wastewater, do not return it to food or drinking-water service.

D616 Masterlim, Rosario: Signo glycerine toilet soap, 90 g Catalogue checked 4 November 2026: one ninety-gram bar, displayed ARS 710. A price and product description do not establish comparative antimicrobial performance or a fixed number of washes. Use a draining soap dish, keep it out of dirty splash and replenish before it is exhausted. The example does not require an antibacterial marketing claim.

D613 Jwale2: Veronica Bucket Own-work photograph dated 3 May 2021, uploaded 13 May 2021. Original JPEG, 3456 × 4608 pixels; Ghana catalogue context. Jwale2, CC BY-SA 4.0 International

JPEG, Joint Photographic Experts Group The group whose name identifies a widely used photographic image-compression format. CC BY-SA, Creative Commons Attribution-ShareAlike

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g: Gram A unit of mass equal to one thousandth of a kilogram.

HANDWASHING: EVIDENCE, MATERIALS AND IMAGE CREDITS

D617 Papelera Manapel: 2,500 interfolded paper towels Catalogue checked 4 November 2026: single-ply sheets 19 × 24 cm. Listed pack price ARS 29,840; a promotional ARS 25,364 was also displayed. The basket deliberately uses the undiscounted list price and buys the complete pack. Protect the stock from splashes and handle only the sheet used. Neither the pack count nor bar mass predicts a service duration.

D618 Banco de la Nación Argentina: banknote exchange quotation Displayed quotation dated 4 November 2026, updated 17:00: USD banknote selling ARS 1,570, buying ARS 1,520. The ARS 77,330 list-price basket divided by 1,570 is USD 49.25. This is a comparison equivalent, not a dollar invoice, a blue-dollar rate or the pesos received when selling dollars. Freight, payment fees, installation and omitted operating items are additional.

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D619 Alaska Department of Environmental Conservation: Building a Handwashing Station Official practical example includes a jug with a flowing tap, soap, drying paper, catch container and rubbish bin. The lesson adapts these components to Argentine supplies and local wastewater arrangements. Alaska food-service requirements, disinfectant recipes and legal permissions are not imported as Argentine rules. No universal support height or load capacity is assigned to reused furniture.

D620 Creative Commons: Attribution-ShareAlike 4.0 International Licence for the Jwale2 photograph in D613. Attribution, original source and licence are supplied in this rear reference library; no endorsement by the photographer is implied. The photograph remains available under its stated licence. It is reproduced without cropping, retouching or generative alteration. Original explanatory diagrams are distinct teaching constructions, not documentary photographs or surveyed plans.

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Return to handwashing Return to assembly and quantities

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HANDWASHING: EVIDENCE, MATERIALS AND IMAGE CREDITS

D617 Papelera Manapel: 2,500 interfolded paper towels Catalogue checked 4 November 2026: single-ply sheets 19 × 24 cm. Listed pack price ARS 29,840; a promotional ARS 25,364 was also displayed. The basket deliberately uses the undiscounted list price and buys the complete pack. Protect the stock from splashes and handle only the sheet used. Neither the pack count nor bar mass predicts a service duration.

D618 Banco de la Nación Argentina: banknote exchange quotation Displayed quotation dated 4 November 2026, updated 17:00: USD banknote selling ARS 1,570, buying ARS 1,520. The ARS 77,330 list-price basket divided by 1,570 is USD 49.25. This is a comparison equivalent, not a dollar invoice, a blue-dollar rate or the pesos received when selling dollars. Freight, payment fees, installation and omitted operating items are additional.

D619 Alaska Department of Environmental Conservation: Building a Handwashing Station Official practical example includes a jug with a flowing tap, soap, drying paper, catch container and rubbish bin. The lesson adapts these components to Argentine supplies and local wastewater arrangements. Alaska food-service requirements, disinfectant recipes and legal permissions are not imported as Argentine rules. No universal support height or load capacity is assigned to reused furniture.

D620 Creative Commons: Attribution-ShareAlike 4.0 International Licence for the Jwale2 photograph in D613. Attribution, original source and licence are supplied in this rear reference library; no endorsement by the photographer is implied. The photograph remains available under its stated licence. It is reproduced without cropping, retouching or generative alteration. Original explanatory diagrams are distinct teaching constructions, not documentary photographs or surveyed plans.

Teaching calculations are explicitly assumed. Supplier prices are dated observations; an assembled station still requires local checks.

Return to handwashing Return to assembly and quantities

ON THIS PAGE

ARS Argentine peso · **cm** centimetre, 0.01 metre · **×** multiplied by · **USD** United States dollar

D618 Banco de la Nación Argentina: banknote exchange quotation Displayed quotation dated 4 November 2026, updated 17:00: USD banknote selling ARS 1,570, buying ARS 1,520. The ARS 77,330 list-price basket divided by 1,570 is USD 49.25. This is a comparison equivalent, not a dollar invoice, a blue-dollar rate or the pesos received when selling dollars. Freight, payment fees, installation and omitted operating items are additional.

PASSIVE SECURITY: EVIDENCE, MATERIALS AND IMAGE CREDITS

D621 SINAGIR: Plan Familiar de Emergencias National household planning guidance: draw the dwelling and nearby streets, identify hazards, agree routes and meeting places, assign responsibilities and rehearse. Include children, older people and people needing assistance. Reference 49 is an original teaching plan, not a surveyed property or a certified evacuation design. Keep exact household routines and key information private.

D622 Bomberos de la Ciudad: Cómo actuar ante una emergencia CABA emergency guidance supports planned evacuation, stairs rather than lifts during a fire and assistance for vulnerable occupants. CABA contact numbers and building requirements do not automatically apply to every province. This pair addresses household inspection; confirm the actual municipio, building use, consorcio requirements and competent local fire authority before modifying a common or fire-rated door.

D623 Buenos Aires Turismo: Casa Mínima Official city catalogue: Pasaje San Lorenzo 380, San Telmo, CABA; frontage 2.5 m, depth 13 m, built in the second decade of the nineteenth century. The small iron balcony and green two-leaf entrance are architectural features. The catalogue calls the popular freed-slave ownership account a myth. Neither the facade nor its age establishes escape performance or resistance to entry.

Own-work photograph taken 15 December 2007 and uploaded 22 December 2007. Original JPEG, 2444 × 3668 pixels. Reproduced full frame, unretouched and scaled only under CC BY-SA 2.5 Generic: https://creativecommons.org/licenses/by-sa/2.5/. The source also offers other licences; this edition uses CC BY-SA 2.5. No endorsement is implied. The facade is documentary; the adjacent inspection drawing is an original teaching construction.

Plans and dimensions are teaching examples. Confirm the actual building, users, hardware, local requirements and supplier quotation.

Return to the entrance survey Return to inspection and quantities

D624 Barcex: Buenos Aires - San Telmo - La Casa

TERMS ON THIS PAGE SINAGIR: Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil Argentina's national system for disaster risk management and civil protection.

D622 Bomberos de la Ciudad: Cómo actuar ante una emergencia CABA emergency guidance supports planned evacuation, stairs rather than lifts during a fire and assistance for vulnerable occupants. CABA contact numbers and building requirements do not automatically apply to every province. This pair addresses household inspection; confirm the actual municipio, building use, consorcio requirements and competent local fire authority before modifying a common or fire-rated door.

D623 Buenos Aires Turismo: Casa Mínima Official city catalogue: Pasaje San Lorenzo 380, San Telmo, CABA; frontage 2.5 m, depth 13 m, built in the second decade of the nineteenth century. The small iron balcony

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USD United States dollar · **ARS** Argentine peso · **SINAGIR** Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil · **CABA** Ciudad Autónoma de Buenos Aires · **m** metre, a length unit · **JPEG** Joint Photographic Experts Group · **BY-SA** Creative Commons Attribution-ShareAlike · **×** multiplied by

and green two-leaf entrance are architectural features. The catalogue calls the popular freed-slave ownership account a myth. Neither the facade nor its age establishes escape performance or resistance to entry.

https://turismo.buenosaires.gob.ar/es/otros-establecimientos/casa-m%C3%ADnima

https://commons.wikimedia.org/wiki/File:Buenos_Aires_-_San_Telmo_-_La_Casa_M%C3%ADnima.jpg

D623 Buenos Aires Turismo: Casa Mínima Official city catalogue: Pasaje San Lorenzo 380, San Telmo, CABA; frontage 2.5 m, depth 13 m, built in the second decade of the nineteenth century. The small iron balcony and green two-leaf entrance are architectural features. The catalogue calls the popular freed-slave ownership account a myth. Neither the facade nor its age establishes escape performance or resistance to entry.

D624 Barcex: Buenos Aires - San Telmo - La Casa

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CABA: Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area.

CC BY-SA: Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

JPEG: Joint Photographic Experts Group The group whose name identifies a widely used photographic image-compression format.

D625 Yale Argentina: Kit para instalación de cerraduras Manufacturer catalogue describes a template kit for wood doors 35-45 mm thick and nominal 60 or 70 mm backsets. These figures show why dimensions must be checked before selecting hardware. The diagram uses an assumed 40 mm leaf and 60 mm backset, not a drilling template. No lock model, fire-door certification, structural capacity or burglary-resistance rating is specified or transferred from this catalogue.

D626 Easy: Stanley three-metre measuring tape, reference 119964 Catalogue checked 4 November 2026, Argentina local date. Latest retrieved page displayed list price ARS 10,900 and promotional ARS 8,720. The basket uses the undiscounted list price; an earlier search result displayed ARS 12,350 and was superseded. Availability and delivery require a selected locality. A tape records dimensions; it does not test lock strength or prove regulatory compliance.

D627 Easy: Stanley Phillips PH2 × 100 mm screwdriver, reference 1250815 Catalogue checked 4 November 2026. List price ARS 4,990, promotional ARS 3,992. The basket uses the list price. PH2 is appropriate only where the existing screw head matches. A driver is not a substitute for the correct fastener, sound substrate, specified torque or qualified repair. Reuse an appropriate existing tool. This is not an electrically insulated tool selection.

ON THIS PAGE

CABA Ciudad Autónoma de Buenos Aires · **m** metre, a length unit · **JPEG** Joint Photographic Experts Group · **BY-SA** Creative Commons Attribution-ShareAlike · **×** multiplied by · **mm** millimetre, 0.001 metre · **ARS** Argentine peso

D628 Banco de la Nación Argentina: banknote quotation Displayed 4 November 2026, updated 17:00: USD banknote selling ARS 1,570 and buying ARS 1,520. The two-tool list basket is ARS 10,900 + 4,990 = 15,890; divided by 1,570, USD 10.12. This is a comparison equivalent, not a blue-dollar quotation or the pesos received when selling dollars. Freight, batteries, repairs, replacement hardware and labour are additional.

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https://www.easy.com.ar/destornillador-ph-2x100-stanley-1250815/p

https://www.bna.com.ar/Personas

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D629 INDEC: ¿Qué es el Gran Buenos Aires?, 2003 Historical statistical terminology distinguishes CABA plus 24 complete partidos from the physically continuous agglomeration. Do not silently equate a partido, locality, conurbano, agglomeration or metropolitan region. The 24-partido definition is explicitly dated here. Later statistical regionalisation must be checked separately, including the SIES explanation in D632.

D630 Argentina.gob.ar, DAMI: AMBA This national metropolitan-programme page identifies CABA and 40 Buenos Aires municipalities. It is a different coverage definition from the historical 24-partido GBA. The chapter therefore asks readers to record the exact partido, locality and site. A metropolitan boundary is not a flood, crime, service-access or land-suitability rating. No current population or area total is copied from this page.

D631 Argentina.gob.ar: Provincias The national overview distinguishes 23 provinces and the Autonomous City of Buenos Aires, 24 jurisdictions. Province-wide descriptions cannot decide the suitability of one parcel. Record the jurisdiction, municipality or commune, locality and precise site, then use dated infrastructure and hazard evidence at the applicable scale. Keep city, periurban and rural observations distinct and identify unknown conditions.

ON THIS PAGE

USD United States dollar · **ARS** Argentine peso · **=** equals · **mm** millimetre, 0.001 metre · **×** multiplied by · **CABA** Ciudad Autónoma de Buenos Aires · **SIES** Sistema Integrado de Estadísticas Sociales · **DAMI** Desarrollo de Áreas Metropolitanas del Interior An Argentine metropolitan-development programme credited in the cited source · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **GBA** Gran Buenos Aires Greater Buenos Aires

D632 INDEC: Sistema Integrado de Estadísticas Sociales, regionalisation The SIES explanation dates the GBA regional grouping of CABA plus 24 partidos to 2003-2015 and describes an extension to 31 partidos from 2016, adding Cañuelas, Escobar, General Rodríguez, Marcos Paz, Pilar, Presidente Perón and San Vicente. Use the geography specified by each dataset. Keep the 24-partido, 31-partido and 40-municipality boundaries as separate definitions, not interchangeable maps.

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https://www.argentina.gob.ar/dami/centro/amba

https://www.argentina.gob.ar/pais/provincias

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TERMS ON THIS PAGE INDEC: Instituto Nacional de Estadística y Censos Argentina's national statistics and census institute.

SIES: Sistema Integrado de Estadísticas Sociales Argentina's integrated social statistics system, cited for its geographic groupings.

DAMI: Desarrollo de Áreas Metropolitanas del Interior An Argentine metropolitan-development programme credited in the cited source.

AMBA: Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area. The boundary depends on the definition and date cited.

GBA: Gran Buenos Aires Greater Buenos Aires. The statistical grouping depends on the authority and year cited.

HABITABLE HOMES AND TARP SHELTERS: EVIDENCE

D633 SINAGIR: Plan Familiar de Emergencias Map the dwelling and its surroundings, identify hazards, assign responsibilities, plan assistance and rehearse escape. The room drawing at 51 is an original two-adult arrangement with assumed dimensions. It is not an occupancy, fire or accessibility standard. Survey actual clear widths and the complete route before using a room.

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GBA Gran Buenos Aires Greater Buenos Aires · **CABA** Ciudad Autónoma de Buenos Aires · **DAMI** Desarrollo de Áreas Metropolitanas del Interior An Argentine metropolitan-development programme credited in the cited source · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **SINAGIR** Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil

D634 Dirección Nacional de Migraciones: El Hotel The Buenos Aires complex combined arrival, employment, administration, medical care, accommodation and onward travel. Construction began in 1906; its hotel had ground-floor dining and upper-floor dormitories. Lodging was normally free for five days, with extensions in some circumstances. The lesson draws a functional comparison with household services, not a proposal to reproduce historic crowding or routines.

D635 Silvinarossello: Vista externa del ex Hotel de Inmigrantes, Buenos Aires Own-work photograph dated 12 November 2009. Original 3872 × 2444 JPEG, reproduced full frame and scaled only; no edits added by this edition. CC BY-SA 3.0 Unported, https://creativecommons.org/licenses/by-sa/3.0/. Historic vehicles in the scene do not date the photograph to the early twentieth century. The exterior documents the institution, not a surveyed interior or a present occupancy approval.

D636 Argentine gas regulator: Monóxido de carbono Guidance requires gas appliances, flues and ventilation to be inspected by a gasista matriculado; permanent ventilation must remain open. Stoves and ovens must not be used as space heaters. Long-closed dwellings need inspection before appliances are returned to use. Neither a visible flame nor an open window proves that an installation is safe.

Prices checked 4 November 2026. Worked dimensions are assumptions. Confirm locality, materials and users before implementation.

Return to the habitable home Return to the tarp shelter

D634 Dirección Nacional de Migraciones: El Hotel The Buenos Aires complex combined arrival, employment, administration, medical care, accommodation and onward travel. Construction began in 1906; its hotel had ground-floor dining and upper-floor dormitories. Lodging was normally free for five days, with extensions in some circumstances. The lesson draws a functional comparison with household services, not a proposal to reproduce historic crowding or routines.

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D637 SINAGIR: Qué hacer después de una inundación Return only when authorities advise it. Flooded electrical connections, damaged walls, floors and roofs require assessment. This lesson does not give a DIY electrical reconnection procedure or reproduce the source's approximate disinfectant recipe. Structural damage, gas odour or unsafe access are reasons to leave the affected area and seek competent help.

D638 CDC: How to Create an Emergency Water Supply, 27 June 2025 United States reference: at least one US gallon per person per day for three days, with more for heat, illness and other needs. One US gallon is about 3.785 L. This lesson rounds to 4 L for a worked reserve calculation, not a universal daily need. Store in suitable clean food-contact containers; never reuse chemical containers. Follow local water notices and the actual product label. This small reserve does not supply ordinary bathing, laundry or toilet flushing.

D639 Industrias Soch: Bidón 10 litros - AGUA Manufacturer's Argentine 10 L water container, 28 × 16 × 34 cm, with dispensing tap and vent button. Direct page retrieved 4 November 2026 displayed ARS 32,800 each, including national tax; this supersedes the search-rendered ARS 30,900. Three empty containers total

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JPEG Joint Photographic Experts Group · **BY-SA** Creative Commons Attribution-ShareAlike · **×** multiplied by · **SINAGIR** Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil · **L** litre, a volume unit · **ARS** Argentine peso · **cm** centimetre, 0.01 metre

ARS 98,400. Check the actual drinking-water suitability and assembly instructions, including the tap's transport position. Water, delivery and other household equipment are additional.

D640 Banco de la Nación Argentina: Cotización Billetes Displayed 4 November 2026, updated 17:00: USD banknote selling ARS 1,570; buying ARS 1,520. Comparison equivalents divide peso costs by 1,570: ARS 98,400 = USD 62.68; ARS 69,990 = USD 44.58; the listed promotional ARS 60,490 = USD 38.53. These are comparison amounts, not a forecast or an alternative-market exchange quote.

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CDC, Centers for Disease Control and Prevention The United States public health agency credited with the cited information. US, United States of America Identifies the country or jurisdiction of the source, price cm: Centimetre

DIY: Do it yourself A label for an activity or project undertaken by the reader.

CDC, Centers for Disease Control and Prevention The United States public health agency credited with the cited information. US, United States of America Identifies the country or jurisdiction of the source, price or institution. cm: Centimetre A unit of length equal to one hundredth of a metre.

ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. USD, United States dollar The currency used for a price or conversion. One dollar

HABITABLE HOMES AND TARP SHELTERS: EVIDENCE

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Prices checked 4 November 2026. Worked dimensions are assumptions. Confirm locality, materials and users before implementation.

Return to the habitable home Return to the tarp shelter

TERMS ON THIS PAGE SINAGIR: Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil Argentina's national system for disaster risk management and civil protection.

ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

L: Litre One cubic decimetre of volume, or one thousand millilitres.

HABITABLE HOMES AND TARP SHELTERS: EVIDENCE

D641 DD Hammocks: Setting up your DD Tarp Manufacturer's A-frame method: suspend the ridge between suitable supports, then tension corners and additional side points where needed. The 3 × 3 m reference geometry uses a chosen 1 m ridge with edges at ground level. Full ideal span = 2 × sqrt(1.5^2 - 1^2) = 2.236 m. This calculation supplies no anchor capacity, wind rating or certified sleeping capacity.

D642 DD Hammocks: tarp product warnings, Spanish Inspect sheet, pegs and cordage before use. Avoid sharp or abrasive contact, keep lines visible, keep flame and direct heat away and never cook inside. Dry equipment before storage. Manufacturer warnings apply to the named products; no strength or temperature rating is transferred to the author's sewn example.

Own-work photograph taken 5 May 2012, 3456 × 2592 pixels. A tarp roof and poles lashed to two trees are visible. Reproduced full frame and scaled only under CC BY-SA 3.0 Unported: https://creativecommons.org/licenses/by-sa/3.0/. Location and tarp dimensions are not established here. The raised platform and direct tree lashings are documentary details, not construction recommendations or the 3 × 3 m teaching design.

D644 Codisur: Tarp impermeable 3 × 3 m, SKU 8070 Argentine seller page retrieved 4 November 2026: list ARS 69,990 and promotion ARS 60,490. Includes one nominal 3 × 3 m polyester sheet, six steel pegs, six 1.90 m guy lines and one bag. The list-price benchmark excludes ridgeline, support straps or poles, groundsheet, bedding and freight. Listing dimensions and weights conflict in auxiliary fields; no inferred wind rating or installed shelter capacity is used.

Prices checked 4 November 2026. Worked dimensions are assumptions. Confirm locality, materials and users before implementation.

Return to the habitable home Return to the tarp shelter

D643 Jomegat: Pole tarp and rope shelter

TERMS ON THIS PAGE DD Hammocks: DD Hammocks The manufacturer's trading name used to identify the cited shelter and setup instructions.

ON THIS PAGE

USD United States dollar · **ARS** Argentine peso · **=** equals · **m** metre, a length unit · **×** multiplied by · **BY-SA** Creative Commons Attribution-ShareAlike

CC BY-SA: Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

m: Metre The base unit of length in the International System of Units.

HABITABLE HOMES AND TARP SHELTERS: EVIDENCE

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BY-SA Creative Commons Attribution-ShareAlike · **m** metre, a length unit · **=** equals · **×** multiplied by · **ARS** Argentine peso

D645 Sailrite Fabric Calculator: Tarp Tips The supplier describes overlapping or semi-flat-felled joins and double-fold hems. The adjacent metric pattern is original: two 3100 × 1500 mm panels, one 25 mm overlap, and two 25 mm folds at each outside edge yield a nominal 3000 × 2875 mm sheet. Confirm usable cloth width, fraying, coating, seam method and sample performance before cutting the full sheet. The pattern is a workshop example, not a tested commercial product.

D646 GEAR AID: Which Sealant Should I Use? Sealant must match the coating, not merely the fibre name. Silicone-coated and polyurethane-coated surfaces need different compatible products; mixed coatings may differ by side. Ask the fabric supplier if the coating is unspecified. Follow the selected product's ventilation, application and cure instructions. A water-spray check can reveal leaks but cannot certify seam strength or storm performance.

D647 Telas Once: Silver impermeable, CABA Seller identifies 1.50 m nominal-width material sold by the metre and mentions tents and covers as uses. It does not establish coating chemistry, tear strength or hydrostatic performance. No price is published on the retrieved page; obtain a dated quote for the actual lot. The worked cutting plan needs at least 1.50 m usable width, not just roll width including unusable selvages.

D648 Administración de Parques Nacionales: Campamentos Check availability, permitted sites and the specific park's current conditions before arrival. Fires are allowed only where and when the park permits; pack out waste. Park permissions do not authorize camping on private land or elsewhere. A roof does not supply sanitation, drinking water, insulation or protection from every hazard.

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https://www.gearaid.com/blogs/learn/which-sealant-should-i-use

https://telasonce.com/products/detail/80/Silver-impermeable

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ON THIS PAGE

mm millimetre, 0.001 metre · **×** multiplied by · **CABA** Ciudad Autónoma de Buenos Aires · **m** metre, a length unit

CABA, Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area. m, Metre The base unit of length in the International System of Units. D + number: Book evidence record

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HABITABLE HOMES AND TARP SHELTERS: EVIDENCE

D649 Provincia de Buenos Aires: La Gran Inmigración, material para estudiantes The provincial education account distinguishes the earlier Rotonda from the Hotel de Inmigrantes opened in 1911. Its historical account is used only for that opening date and the lodging context. Modern household space, ventilation, privacy and access must be assessed for actual residents, rather than copied from historic institutional density.

D650 IFRC: The IFRC Shelter Kit, 2010 International humanitarian reference for shelter assessment, material selection, fixing and temporary configurations. Its kits and structural examples are not the same as the camping sheet or sewn practice pattern in this lesson. Site conditions, climate, drainage, land permission, sanitation and users' needs determine whether a temporary shelter is appropriate. No universal Argentine foundation or anchorage design is inferred.

Prices checked 4 November 2026. Worked dimensions are assumptions. Confirm locality, materials and users before implementation.

Return to the habitable home Return to the tarp shelter

TERMS ON THIS PAGE IFRC: International Federation of Red Cross and Red Crescent Societies The humanitarian federation credited with the cited guidance.

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HOUSEHOLD SERVICES AND WATER: EVIDENCE

D651 Buenos Aires City: history of Usina del Arte Official account of the former electricity station in La Boca. The first building opened in 1916 with boilers and turbines; expansion continued later. The household dependency diagram is an original teaching model, not a plan of this industrial plant.

D652 Andrés Bonafina: Usina del Arte, 21 September 2014 Documentary photograph, Wikimedia Commons, CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/). Full frame; 3543 × 2362 source pixels retained, with no new retouching. The source file has its own editing history. The pictured cultural venue is not an operating emergency power station.

D653 Argentina: efficient household heating National energy advice supports draught sealing, curtains and appropriate use of sunlight. The sewn 1020 × 320 mm pattern is an original worked example, without

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IFRC International Federation of Red Cross and Red Crescent Societies · **BY-SA** Creative Commons Attribution-ShareAlike · **×** multiplied by · **ENARGAS** Ente Nacional Regulador del Gas · **mm** millimetre, 0.001 metre

measured thermal performance. Required gas ventilation must remain open; see ENARGAS record D636 at reference 1448.

D654 Las Mil Telas: cotton calico, 1.50 m wide Direct listing checked 4 November 2026: ARS 4,600 per linear metre, nominal 1.50 m width. Usable width and shrinkage must be checked. One metre can yield three 1020 × 320 mm blanks only if these dimensions remain available after preparation. Thread, filling, tools, labour and delivery are additional.

Return to household services Return to the water reserve

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mm: Millimetre A unit of length equal to one thousandth of a metre.

ENARGAS, Ente Nacional Regulador del Gas The Argentine gas regulator named in the source. ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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https://www.argentina.gob.ar/energia/eficiencia-energetica/calefaccion

https://www.lasmiltelas.com.ar/producto/210-lienzo-de-algodn-150-mts-de-ancho

D655 Xiaomi: 10000mAh Mi Power Bank 3 Ultra Compact specifications Model PB1022ZM: cell energy 37 Wh at 3.7 V; rated output capacity 5500 mAh at 5 V / 3 A. Multiplying gives 27.5 Wh at that test condition. Dividing by a nominal 3 W lamp gives an arithmetic comparison, not a guaranteed runtime at another load, temperature or battery age. No Argentine bank price is established here.

D656 Mega Cuper: mini USB LED lamp Supplier advertises 5 V and 3 W; displayed price ARS 810, or ARS 769.50 by transfer, checked 4 November 2026. The rendered listing also says Sin stock while its embedded metadata says InStock. Availability is unresolved. This is a dated component comparison, not an available complete lighting-kit quotation; electrical performance was not independently tested.

D657 Banco Nación: exchange-rate table Banknote USD selling rate: ARS 1,570 per USD, displayed 4 November 2026 at 17:00. Divide the stated ARS component amounts by 1570 for comparison. This is not a future rate,

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D658 CDC: creating and storing an emergency water supply 27 June 2025: emergency reserve quantities, suitable vessels, preparation and rotation. The rounded 4 L planning input is not a consumption ceiling. Household sanitation and drinking-water treatment are separate tasks.

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BY-SA Creative Commons Attribution-ShareAlike · **×** multiplied by · **ENARGAS** Ente Nacional Regulador del Gas · **mm** millimetre, 0.001 metre · **ARS** Argentine peso · **m** metre, a length unit · **Wh** watt-hour, energy · **V** volt, electrical potential difference · **A** ampere, electric current · **W** watt, power · **USB** Universal Serial Bus, the wired interface used for data and device power · **LED** Light-emitting diode · **USD** United States dollar · **L** litre, a volume unit

TERMS ON THIS PAGE Wh: Watt-hour A unit of energy. One watt delivered for an hour supplies one watt-hour.

mAh: Milliampere-hour A unit of electric charge equal to one thousandth of an ampere-hour.

USB: Universal Serial Bus A standard family of connections used to carry data or power between devices.

LED: Light-emitting diode An electronic component that emits light when electric current passes in its conducting direction.

V: Volt The unit of electric potential difference.

A, Ampere The unit of electric current. One ampere transfers one coulomb of charge per second. W, Watt The unit of power. One watt equals one joule of energy transferred per second.

L, Litre One cubic decimetre of volume, or one thousand millilitres. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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Return to household services Return to the water reserve

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HOUSEHOLD SERVICES AND WATER: EVIDENCE

D659 Soch: Argentine-made 20 L water bidón with tap Direct listing checked 4 November 2026: ARS 36,900 each; 330 × 250 × 390 mm; tap and air vent. The supplier explains reversing the transport-position tap and O-ring and retightening the nut. Three vessels cost ARS 110,700. Food-contact suitability and all seals must be confirmed for the purchased item; a fuel-container variant is unsuitable.

D660 Dario Alpern: aljibe at Museo Molino Forclaz Photograph taken 21 July 2014 in Entre Ríos. Full frame; 4608 × 3456 source pixels retained without new retouching. Used under the offered CC BY-SA 4.0 licence (creativecommons.org/licenses/by-sa/4.0/). The heritage structure is historical context, not evidence of current drinking-water quality or a construction specification.

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USB Universal Serial Bus, the wired interface used for data and device power · **LED** Light-emitting diode · **ARS** Argentine peso · **V** volt, electrical potential difference · **W** watt, power · **USD** United States dollar · **L** litre, a volume unit · **mm** millimetre, 0.001 metre · **×** multiplied by · **BY-SA** Creative Commons Attribution-ShareAlike

D661 National heritage register: Molino Forclaz ensemble Official account identifies the house, sheds, mills and aljibe as an ensemble. The windmill completed in 1890 performed poorly with the local winds and mule-powered milling resumed. That date is not assigned to the aljibe. The lesson is to measure a local resource before copying imported equipment.

D662 National Health Ministry: BEN 757, section VII.6 May 2025 bulletin, printed page 67 (PDF page 73): follow the registered water-disinfection product label; the example uses 2 drops per litre for 55 g Cl/L bleach and a 30-minute wait. Boiling guidance is 2-3 minutes. This edition uses 3 minutes. The separate millilitre doses for washing vegetables are not drinking-water doses.

TERMS ON THIS PAGE ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

mm: Millimetre A unit of length equal to one thousandth of a metre.

CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. BEN, Boletín Epidemiológico Nacional Argentina's national epidemiological bulletin reporting disease surveillance information. PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

L, Litre One cubic decimetre of volume, or one thousand millilitres. g, Gram A unit of mass equal to one thousandth of a kilogram. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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D663 CDC: making water safe in an emergency Boiling and disinfection address microbes, not fuel, toxic chemicals or radioactive contamination. Cloudy water needs settling or particle removal before treatment. Chlorine is less effective against some parasites, including Cryptosporidium. Clear appearance, a cloth filter and chlorine smell do not establish potability; follow the local advisory.

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PDF Portable Document Format · **g** gram, 0.001 kilogram · **BY-SA** Creative Commons Attribution-ShareAlike · **ARS** Argentine peso · **L** litre, a volume unit · **mm** millimetre, 0.001 metre · **×** multiplied by

D664 Código Alimentario Argentino, Chapter XII Current official chapter linked from the national CAA index, updated November 2025; Article 982 sets drinking-water characteristics. Commission a local laboratory panel and interpretation appropriate to the source, including microbial and relevant chemical parameters. Neither a historical aljibe nor a household taste test establishes compliance.

D665 Belelli and Vázquez: captación de agua de lluvia INTA guide, Ediciones INTA 2019 catalogue entry, with 2018 on the cover; based on family agriculture in the NEA. Supports roof collection, separation of initial runoff and protected storage. The 40 m^2 × 20 mm × 0.80 calculation is this book's assumed event example. The diagram is functional, not a foundation, roof-load or plumbing design.

D666 National agriculture programme: aljibes in Vera, Santa Fe 3 December 2018 announcement planned 85 family aljibes in Vera department, including Fortín Charrúa and Las Chilcas, where groundwater salts and arsenic limited use. A planned programme is not proof that all units were completed, nor a claim that all Santa Fe groundwater is unsafe.

TERMS ON THIS PAGE CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

CAA: Código Alimentario Argentino The Argentine Food Code cited for national food or drinking-water provisions.

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. NEA, Noreste Argentino Northeastern Argentina. The abbreviation locates the region discussed. m^2: Square metre The area of a square with sides one metre long.

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D667 CNEA: water-filter research near Ingeniero Jacobacci 24 October 2023 report concerns rural Río Negro sites with arsenic and fluoride and sampling in wet and dry periods. The treatment material was under development. It is not evidence that any homemade sand, charcoal or diatomaceous-earth filter will remove these contaminants reliably.

D668 AySA: cleaning and disinfecting a household tank Utility guidance distinguishes the network boundary from responsibility for internal installations and recommends periodic tank cleaning. Its large-tank cleaning procedure is not the drinking-water dose on reference 59. Roof access, internal tank entry and repairs require appropriate competent service; do not enter a confined tank.

D669 Hobbycraft: sewing a draught excluder Steph Parker's tutorial supports the general sew, turn, fill and close sequence. The single-piece metric pattern, seam allowances, three-blank cloth layout and window-sill application in this book are independently worked examples, not a reproduction of the tutorial's patchwork pattern.

ON THIS PAGE

CAA Código Alimentario Argentino, the Argentine Food Code · **INTA** Instituto Nacional de Tecnología Agropecuaria · **NEA** Noreste Argentino Northeastern Argentina · **m^2** square metre, an area unit · **mm** millimetre, 0.001 metre · **×** multiplied by · **CNEA** Comisión Nacional de Energía Atómica

D670 CDC: carbon monoxide prevention Current page updated 26 October 2026: fuel generators belong outdoors more than 20 ft (6.096 m) from doors, windows and vents, never in a home or garage. CO alarms supplement safe equipment and ventilation. The rounded instruction here is more than 6.1 m; neighbouring openings also matter. Use competent electrical installation for any building connection.

TERMS ON THIS PAGE CNEA: Comisión Nacional de Energía Atómica Argentina's national atomic energy commission, credited with the environmental sampling research.

AySA: Agua y Saneamientos Argentinos The water and sanitation provider named in the Buenos Aires context.

CDC, Centers for Disease Control and Prevention The United States public health agency credited with the cited information. CO, Carbon monoxide A poisonous gas produced by incomplete combustion. Its chemical formula identifies one carbon atom and one oxygen atom. m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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WEATHER REPAIRS AND GARDEN PLANNING: EVIDENCE

D671 SINAGIR: precautions during intense rain National guidance on sheltering, electricity and floodwater. The repair sequence here is an original household work plan. Isolate electricity only from a dry, safe position; do not cross water to reach a switch. Roof access and structural repairs require competent assessment.

D672 Historic England: inspecting and repairing rainwater systems 23 July 2024. A roof/drainage plan, routine clearing, storm inspection and access for repairs support maintenance. A repeated overflow may require a capacity or layout redesign. This is an English conservation comparison, not an EU regulation or an Argentine design approval.

D673 US Department of Energy: stormwater gutters and downspouts US teaching guidance describes surface discharge at least 5 ft from foundations and underground catchment at least 10 ft away. These are 1.524 m and 3.048 m. Apply local Argentine drainage permissions, soil and site constraints. The 60 m², 120 mm/h and 30-minute storm are assumed arithmetic inputs, not local design rainfall.

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D674 Andy and mel: Casa Beban photograph Wikimedia Commons, CC BY-SA 3.0 (creativecommons.org/licenses/by-sa/3.0/). Full 1024 × 580 source frame retained without new retouching.

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m metre, a length unit · **SINAGIR** Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil · **EU** European Union · **US** United States · **m²** square metre, an area unit · **mm** millimetre, 0.001 metre · **BY-SA** Creative Commons Attribution-ShareAlike · **EXIF** Exchangeable image file format · **×** multiplied by

Listed date is 4 October 2011; EXIF instead says 10 March 2011. Caption therefore uses 2011 only. The image records architecture, not current condition or certified snow/wind performance.

Prices checked 5 November 2026; USD comparisons use the displayed 4 November BNA rate. Example dimensions require site checks.

Return to weather repairs Return to garden planning

TERMS ON THIS PAGE SINAGIR: Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil Argentina's national system for disaster risk management and civil protection.

EU: European Union The political and economic union responsible for the European reference or rule cited.

m^2: Square metre The area of a square with sides one metre long.

mm, Millimetre A unit of length equal to one thousandth of a metre. CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

EXIF: Exchangeable image file format The metadata convention that can store camera settings, dates and location in a photograph.

USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. BNA, Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation.

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WEATHER REPAIRS AND GARDEN PLANNING: EVIDENCE

D675 Ushuaia Tourism: Casa Beban Municipal tourism account: Swedish prefabricated house brought disassembled, erected between 1911 and 1913, subsequently restored and moved. Cultural-centre

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BY-SA Creative Commons Attribution-ShareAlike · **EXIF** Exchangeable image file format · **×** multiplied by · **USD** United States dollar · **BNA** Banco de la Nación Argentina · **m^2** square metre, an area unit · **US** United States · **m** metre, a length unit · **mm** millimetre, 0.001 metre

inauguration: 4 November 1994. The example demonstrates exchange of building knowledge; it does not establish that a Swedish detail is automatically suitable anywhere in Argentina.

D676 Megaflex / Weber: Megafácil technical sheet Three-page manufacturer sheet, especially small-roll instructions on page 2: sound, clean, dry substrate; compatible asphalt primer/emulsion; press the tape into full contact; application between 10 and 30°C without rain or frost. The 350 × 100 mm single patch is an original measuring example, not a manufacturer minimum. Match the actual roll and current label. The 8 cm/15 cm overlaps elsewhere in the sheet concern full-width roof rolls.

D677 Tecnoperfil: Megaflex adhesive membrane, 10 cm × 10 m Displayed ARS 31,843.91 on 5 November 2026; supplier in Santa Fe/Colastiné. SKU MFXPWS1010; text also uses the older No Crack Power Stick name. Confirm formulation and applicable technical sheet before use. The listing mistakenly labels 10 cm as thickness; its title and dimensions establish width. 0.35 m consumes 3.5% of a nominal 10 m roll.

D678 Banco Nación: displayed banknote exchange rates Checked 5 November 2026. The displayed table was still dated 4 November 2026, 17:00: selling rate ARS 1,570 per USD. Dollar comparisons divide ARS by 1570. They are not a new 5 November fixing, future quotations, import costs or installed project totals.

cm: Centimetre A unit of length equal to one hundredth of a metre.

ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. SKU, Stock keeping unit A seller's code for identifying a product or variant in inventory.

USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

BNA, Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation. m, Metre The base unit of length in the International System of Units.

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°C degree Celsius, a temperature unit · **mm** millimetre, 0.001 metre · **cm** centimetre, 0.01 metre · **×** multiplied by · **ARS** Argentine peso · **m** metre, a length unit · **%** percent, parts per hundred · **USD** United States dollar

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D679 INTA: La huerta orgánica familiar INTA/Pro-Huerta manual preserved on a municipal website. Printed page 34 discusses sun, water, animal exclusion, containers and a maximum 1.20 m bed width for access from two sides. The four-bed dimensions and 0.80 m paths are this book's worked example. The manual's family-area statement is not a verified yield or complete-diet guarantee here.

D680 Universidad Nacional de Luján: Huerta-Jardín manual 2021 teaching manual. Page 17 shows preparation, pegged/string layouts, narrower beds of 0.80-1.00 m and paths at least 0.70 m. Dimensions vary with users. The original layout here uses 1.20 m only where both sides are reachable; reduce it otherwise. Stakes and the spacing ruler are independent workshop examples.

D681 INTA: growing fresh food in southern Patagonia 17 October 2022 report from Río Grande, Tierra del Fuego, and Río Turbio, Santa Cruz: short seasons, wind protection, frost exposure and local soil characterisation. Advice is locality-specific. Do not transfer its water or seasonal values to the entire country; the lesson uses no universal daily watering dose.

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D682 INTA: Mi casa, mi huerta Urban growing guide. Printed page 57 documents containers in Balvanera, CABA, and beds at Villa Martelli, Vicente López. Printed pages 35 and 41 address compost and weather protection. These are documented examples, not public visitor sites or proof of current activity. Roof/balcony growing needs a load and drainage assessment; compost volume must be calculated independently.

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

ON THIS PAGE

USD United States dollar · **BNA** Banco de la Nación Argentina · **°C** degree Celsius, a temperature unit · **mm** millimetre, 0.001 metre · **cm** centimetre, 0.01 metre · **×** multiplied by · **ARS** Argentine peso · **m** metre, a length unit · **%** percent, parts per hundred · **INTA** Instituto Nacional de Tecnología Agropecuaria · **CABA** Ciudad Autónoma de Buenos Aires

CABA: Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area.

BNA, Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation. m, Metre The base unit of length in the International System of Units. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D683 University of Minnesota Extension: raised-bed gardens US comparison: choose width by actual reach, allow access to water and appropriate light, avoid unsuitable old treated timber, and recognise that elevated soil can dry faster. Clean soil and site assessment matter where contamination is suspected. A new bed does not remove the surrounding contamination. Soil-test results govern amendments, not an arbitrary layer depth.

D684 Teagasc, Ireland: growing tomatoes EU comparison from Ireland: its example sows in mid-March to early April and plants in mid/late May, with suitable plant development and frost risk resolved. Irish tomatoes often need protection. These are Irish conditions, not Argentine dates. The Argentine adaptation is to check local frost, soil warmth, cultivar and exposure, not simply shift every date by six months.

D685 LTrus: Buenos Aires community garden Documentary photograph dated 9 April 2020, uploaded in 2024. Wikimedia Commons, CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/). Full 939 × 701 source pixels retained, with no new retouching. The source identifies Buenos Aires, Argentina, but no specific neighbourhood. Do not identify this as the Balvanera or Villa Martelli garden.

D686 Centro de Materiales: Nº 21 builder's line, 10 m 5 November 2026 displayed price ARS 613 including VAT per 10 m pack. Four packs cost ARS 2,452. Four bed perimeters total 33.6 m, plus a chosen 0.5 m for tying each gives 35.6 m. Measure actual pack lengths. Stakes, ruler, tools, seeds, water, analysis, fencing, labour and freight are additional.

EU: European Union The political and economic union responsible for the European reference or rule cited.

CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded.

VAT: Value-added tax A consumption tax collected in stages. Whether a price includes it affects comparisons.

USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. BNA, Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation.

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https://teagasc.ie/crops/horticulture/vegetables/tomatoes-greenhouse-salad-crops/

https://commons.wikimedia.org/wiki/File:Huerta_agroecol%C3%B3gica.jpg

D685 LTrus: Buenos Aires community garden Documentary photograph dated 9 April 2020, uploaded in 2024. Wikimedia Commons, CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/). Full 939 × 701 source pixels retained, with no new retouching. The source identifies Buenos Aires, Argentina, but no specific neighbourhood. Do not identify this as the Balvanera or Villa Martelli garden.

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D687 Sra. Huerta: compost, 20 L 5 November 2026 displayed ARS 3,500 per 20 L, explicitly out of stock. Fifteen nominal bags represent 300 L and ARS 52,500 as a price comparison only. For a hypothetical 20 mm layer across 14.4 m^2, volume is 288 L. The listing is not evidence of maturity, contaminant testing, suitability or available supply; obtain a suitable current quote.

D688 Harlan P. Banks: Liberty Hyde Bailey, NAS memoir National Academy of Sciences biographical memoir, 1994. Gives birth on 15 March 1858 and death on 25 December 1954, youth in Michigan orchards, horticultural teaching, writing and the development of Cornell's agricultural college. The area and water equations in this lesson are basic dimensional arithmetic, not a formula invented by Bailey.

D689 Liberty Hyde Bailey: portrait published in 1915 Portrait reproduced in William James Beal's History of the Michigan Agricultural College (1915), printed page 422. Source: Internet Archive Book Images / Library of Congress scan, via Wikimedia Commons. Listed as no known copyright restrictions. Full 813 × 1065 downloaded image retained without further alteration; the source is an extracted historic scan, not a newly generated portrait.

D690 L. H. Bailey: Manual of Gardening, second edition, 1910 Public-domain book, Chapter I, The Point of View. Verified quotation: "The satisfaction of a garden does not depend on the area, nor, happily, on the cost or rarity of the plants." Its northeastern-US context is acknowledged in the author's explanation. Historical pesticide advice is not reproduced or endorsed.

TERMS ON THIS PAGE ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

m^2: Square metre The area of a square with sides one metre long.

NAS: National Academy of Sciences The United States scientific academy publishing the cited biographical memoir.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. BNA: Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation.

L, Litre One cubic decimetre of volume, or one thousand millilitres. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D689 Liberty Hyde Bailey: portrait published in 1915 Portrait reproduced in William James Beal's History of the Michigan Agricultural College (1915), printed page 422. Source: Internet Archive Book Images / Library of Congress scan, via Wikimedia Commons. Listed as no known copyright restrictions. Full 813 × 1065 downloaded image retained without further alteration; the source is an extracted historic scan, not a newly generated portrait.

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Prices checked 5 November 2026; USD comparisons use the displayed 4 November BNA rate. Example dimensions require site checks.

Return to weather repairs Return to garden planning

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AN ANNUAL FOOD LEDGER: EVIDENCE

D691 NC State Extension: instructions for tracking the garden harvest Community-garden record resource, published online 19 February 2025. Its attached instructions say to retain one counting or weighing method through the season, record each harvest and total two-week periods. This book adds its own kilogram-based batch, stock and reconciliation examples; none of the chosen quantities is a forecast yield.

D692 NC State Extension: counting or weighing vegetables Measurement guide, published online 19 February 2025. Count and mass are different measures; retain the actual method and unit. The book uses measured kilograms rather than converting a US count or pound total into an assumed Argentine harvest. Fresh carrots, dried carrots and dry shelled beans are separate stock items.

D693 ANMAT: food traceability and recall records Educational explanation of tracing inputs and suppliers, internal processing, and outgoing lots and recipients. The household ledger borrows that logic. It is not a complete commercial compliance system or permission to manufacture, distribute or sell food. A dated lot record helps identify affected stock; it does not prove safety.

D694 Argentina: updated MERCOSUR food-labelling provisions Joint Resolutions 149/2005 and 683/2005, updated official text checked 5 November 2026. Sections 6.5-6.6 address lots, date wording and special storage conditions, including after opening. Copy the actual label and storage instructions. Do not assume EU or US date phrases have identical Argentine legal meanings; check product-specific rules and competent local authority.

Checked 5 November 2026; USD comparisons use the displayed 4 November BNA rate. Chosen quantities are not forecast yields.

Return to the food ledger Return to annual planning

TERMS ON THIS PAGE NC State: North Carolina State University The United States university credited with horticultural or extension information.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

ANMAT, Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina’s agency for medicines, food and medical technology. MERCOSUR, Mercado Común del Sur The Southern Common Market, a South American regional bloc relevant to the cited provisions.

EU: European Union The political and economic union responsible for the European reference or rule cited.

ON THIS PAGE

USD United States dollar · **BNA** Banco de la Nación Argentina · **US** United States · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **MERCOSUR** Mercado Común del Sur · **EU** European Union

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D695 La Matanza: locally developed garden planner Municipal tool developed with Prohuerta promoters and INTA EEA AMBA technicians using data from La Matanza. Crop sheets cover sowing, harvest, spacing and seed production. These are local planning references, not guaranteed output or a national calendar. Annual ledger values and the monthly bean schedule are original hypothetical examples.

D696 INTA: agroclimatic information tools National access page for agrometeorological reports, SIGA and SEPA. It identifies INTA stations, institutional networks, SMN and international climate inputs. Use the relevant station, period and site conditions. A household loss rate, harvest month or delivery interruption must be observed locally; it cannot be assigned to an entire province from this page.

D697 Library of Congress: pamphlet-stitch teaching sheet Pamphlet Stitch, instruction sheet printed page 37 (PDF page 2), credited a. forbes. It shows the three-hole route and thread about three times the book length. The four-booklet arrangement, 25/105/185 mm hole positions, 630 mm thread lengths and page allocation are this book's original measured adaptation. Illustrations are newly drawn, not copied.

D698 Systel Argentina: Clipse capacities, resolution and tare Manufacturer page distinguishes the 5 kg model from the Clipse 30 V2 with 31 kg capacity. For the latter it states 5 g resolution up to 15 kg and 10 g above 15 kg. Resolution is not a calibration certificate. Confirm the exact offered model, maximum gross load, tare, instructions and any trade-use requirements. An 8.75 kg gross load exceeds a 5 kg scale.

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

EEA: Estación Experimental Agropecuaria An agricultural experiment station. The following place name identifies the station in the Argentine institute's network.

AMBA: Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area. The boundary depends on the definition and date cited.

SIGA: Sistema de Información y Gestión Agrometeorológica Argentina's agricultural weather information and management system.

ON THIS PAGE

ANMAT Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **MERCOSUR** Mercado Común del Sur · **EU** European Union · **US** United States · **INTA** Instituto Nacional de Tecnología Agropecuaria · **EEA** Estación Experimental Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **SIGA** Sistema de Información y Gestión Agrometeorológica · **SEPA** Seguimiento de la Producción Agropecuaria An Argentine agricultural monitoring service that makes satellite and weather observations available for production monitoring · **SMN** Servicio Meteorológico Nacional · **PDF** Portable Document Format · **mm** millimetre, 0.001 metre · **kg** kilogram, a mass unit · **g** gram, 0.001 kilogram

SEPA: Seguimiento de la Producción Agropecuaria An Argentine agricultural monitoring service that makes satellite and weather observations available for production monitoring.

SMN: Servicio Meteorológico Nacional Argentina's national weather service.

PDF, Portable Document Format A file format used to preserve the layout of a document when it is shared or printed. mm, Millimetre A unit of length equal to one thousandth of a metre. kg, Kilogram A unit of mass equal to one thousand grams. USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

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Return to the food ledger Return to annual planning

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AN ANNUAL FOOD LEDGER: EVIDENCE

D699 De Francesco: Argentine scale-price comparison 5 November 2026 listing: Systel Clipse 31 kg, code 26-01-002, ARS 326,713.25 displayed price; a separate lower price excludes national taxes. The book uses the displayed full price. Confirm model generation, availability, verification and delivered cost before purchase. This is a measuring instrument comparison, not a recommendation to fabricate a calibrated scale at home.

ON THIS PAGE

PDF Portable Document Format · **mm** millimetre, 0.001 metre · **kg** kilogram, a mass unit · **g** gram, 0.001 kilogram · **USD** United States dollar · **BNA** Banco de la Nación Argentina · **ARS** Argentine peso

D700 Librería Flash: A4 paper, 80 g/m², 500 sheets 5 November 2026 product display: ARS 9,500 per 500-sheet ream, with one item shown in stock; transfer and instalment offers differ. The undiscounted displayed price is used. Sixteen sheets consume 3.2% of a ream, allocated ARS 304. A new ream still costs ARS 9,500. Covers, thread, needle, awl, bowl, labels, tools and freight are excluded.

D701 Banco Nación: displayed banknote exchange table Checked 5 November 2026. The banknote table was dated 4 November 2026, 17:00: selling rate ARS 1,570 per USD. Comparisons divide ARS by 1570. Paper USD 6.05; scale USD 208.10; combined displayed purchases ARS 336,213.25, USD 214.15. These are partial dated comparisons, not future quotes or a complete installed system.

D702 Mercado Central: wholesale fruit and vegetable price records Official observations by the Statistics and Prices Department at the Mercado Central de Buenos Aires, Tapiales. The page publishes dated fruit and vegetable files. Use the specific date, product, grade, origin and sale unit when comparing offers. A wholesale observation is not a delivered household retail quote. No uninspected price-series value is reproduced here.

m²: Square metre The area of a square with sides one metre long.

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ARS Argentine peso · **g** gram, 0.001 kilogram · **%** percent, parts per hundred · **m²** square metre, an area unit · **USD** United States dollar · **kg** kilogram, a mass unit

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D703 Gervacio Rosales: Mercado Central, Nave 2 photograph Photographed 9 August 2013 in Tapiales, Buenos Aires Province. Panoramio photograph retained by Wikimedia Commons, CC BY 3.0 (creativecommons.org/licenses/by/3.0/). Full 4000 × 3000 source frame and pixels retained without new retouching. It documents a procurement setting, not present prices, stock, hygiene performance or the example harvest.

D704 European Food Safety Authority: use-by and best-before dates EU consumer guidance distinguishes safety-related use-by from quality-related best-before. Food must not be eaten after a use-by date even if it looks or smells acceptable; stated storage conditions matter. This is a comparison of EU terminology, not an instruction to reinterpret or extend an Argentine label. No universal storage life is assigned by the ledger.

D705 US FDA: reducing food waste while retaining food safety US consumer guidance discusses the variety of date phrases and supports Best if Used By for quality. Contact the producer about uncertain labels. The book uses this as a US

D705 US FDA: reducing food waste while retaining food safety US consumer guidance discusses the variety of date phrases and supports Best if Used By for quality. Contact the producer about uncertain labels. The book uses this as a US comparison, not a claim that all US states have identical rules or that Argentine dates may be ignored. Planning quantities does not override safe handling or recalls.

D706 University of Minnesota Extension: harvest and vegetable storage Reviewed in 2026. Avoid bruising and rotting produce; storage depends on the crop, temperature and humidity, and published keeping times are estimates. The ledger records actual conditions, losses and inspections. Minnesota storage estimates are not transferred into a guaranteed Argentine shelf life. Drying example weights are accounting assumptions, not a validated preservation procedure.

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FDA: Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here.

BUILDING THE SOIL: EVIDENCE

D707 INTI and INTA Córdoba: domestic compost production Joint eight-page digital guide. It compares open corrals, containers and small enclosed systems; discusses access, tools, rain protection, moisture and aeration. The two-ring dimensions, cut allowances and quantities in this chapter are an original measured adaptation, not an institutional construction drawing. Nominal capacity: $\pi \times 0.60^2 \times 1.00 = 1.131\ m^3$, about 1,131 L. This is geometric space, not predicted compost output or mass. Garden compost does not replace a soil and crop nutrient assessment.

D708 Buenos Aires City: Guía de compostaje domiciliario Municipal guide, 16 PDF pages. Pages 4-5 distinguish household decomposition from reliable high-temperature sanitisation; pages 10 and 13-15 cover

ON THIS PAGE

ARS Argentine peso · **USD** United States dollar · **BY** Attribution condition in a Creative Commons licence · **×** multiplied by · **EU** European Union · **US** United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **INTI** Instituto Nacional de Tecnología Industrial · **INTA** Instituto Nacional de Tecnología Agropecuaria · **m^3** cubic metre, a volume unit · **L** litre, a volume unit · **=** equals · **PDF** Portable Document Format

rain protection, moisture, compaction and troubleshooting. A gloved squeeze test is a practical observation, not a laboratory moisture percentage. Kitchen scraps need a suitable contained system in dense urban settings; the open wire rings illustrated here accept clean garden residues only.

D709 UNNE, Instituto Agrotécnico: household compost management 22 March 2023; technical guidance by María Corina Leconte. Explains carbon-rich and nitrogen-rich materials, air, moisture, particle size and temperature observations. It warns that small household batches may not heat sufficiently and therefore advises excluding manure, diseased plants and meat. The book also excludes seeded weeds and contaminated cuttings. A hot reading is not proof that every part has been sanitised.

D710 University of Florida IFAS: wire compost bin US extension construction method: galvanised wire mesh, folded sharp ends, wire ties and supporting stakes; gloves, snips, pliers and hammer. The chapter recalculates its own metric ring and overlap, rather than rounding the US dimensions. Four supports per ring and all quantities shown are the book's chosen example. The open base, top and 13 mm mesh do not exclude rodents.

Checked 5 November 2026; USD comparisons use the displayed 4 November BNA rate. Chosen dimensions are not a guarantee of yield or sanitary quality.

Return to the compost build Return to batch management

TERMS ON THIS PAGE INTI: Instituto Nacional de Tecnología Industrial Argentina's industrial technology institute. It provides technical and measurement services.

INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

UNNE, Universidad Nacional del Nordeste Argentina's National University of the Northeast. IFAS, Institute of Food and Agricultural Sciences The University of Florida institute that provides agricultural research and extension.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. mm, Millimetre A unit of length equal to one thousandth of a metre. USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

D708 Buenos Aires City: Guía de compostaje domiciliario Municipal guide, 16 PDF pages. Pages 4-5 distinguish household decomposition from reliable high-temperature sanitisation; pages 10 and 13-15 cover rain protection, moisture, compaction and troubleshooting. A gloved squeeze test is a practical observation, not a laboratory moisture percentage. Kitchen scraps need a suitable contained system in dense urban settings; the open wire rings illustrated here accept clean garden residues only.

https://buenosaires.gob.ar/sites/default/files/media/document/2022/06/27/8bdc7b94579399e3d9ea7bfc5c1de94009fb5ed3.pdf

https://agrotecnico.unne.edu.ar/item/178-en-el-mes-del-compostaje-alistamos-nueva-compostera-y-continuamos-promoviendo-esta-practica

D708 Buenos Aires City: Guía de compostaje domiciliario Municipal guide, 16 PDF pages. Pages 4-5 distinguish household decomposition from reliable high-temperature sanitisation; pages 10 and 13-15 cover

ON THIS PAGE

PDF Portable Document Format · **UNNE** Universidad Nacional del Nordeste · **IFAS** Institute of Food and Agricultural Sciences · **US** United States · **mm** millimetre, 0.001 metre · **USD** United States dollar · **BNA** Banco de la Nación Argentina

rain protection, moisture, compaction and troubleshooting. A gloved squeeze test is a practical observation, not a laboratory moisture percentage. Kitchen scraps need a suitable contained system in dense urban settings; the open wire rings illustrated here accept clean garden residues only.

D709 UNNE, Instituto Agrotécnico: household compost management 22 March 2023; technical guidance by María Corina Leconte. Explains carbon-rich and nitrogen-rich materials, air, moisture, particle size and temperature observations. It warns that small household batches may not heat sufficiently and therefore advises excluding manure, diseased plants and meat. The book also excludes seeded weeds and contaminated cuttings. A hot reading is not proof that every part has been sanitised.

https://agrotecnico.unne.edu.ar/item/178-en-el-mes-del-compostaje-alistamos-nueva-compostera-y-continuamos-promoviendo-esta-practica

https://sfyl.ifas.ufl.edu/sarasota/natural-resources/waste-reduction/composting/what-is-composting/compost-bins/wire-compost-bin/

D709 UNNE, Instituto Agrotécnico: household compost management 22 March 2023; technical guidance by María Corina Leconte. Explains carbon-rich and nitrogen-rich materials, air, moisture, particle size and temperature observations. It warns that small household batches may not heat sufficiently and therefore advises excluding manure, diseased plants and meat. The book also excludes seeded weeds and contaminated cuttings. A hot reading is not proof that every part has been sanitised.

D710 University of Florida IFAS: wire compost bin US extension construction method: galvanised wire mesh, folded sharp ends, wire ties and supporting stakes; gloves, snips, pliers and hammer. The chapter recalculates its own metric ring and overlap, rather than rounding the US dimensions. Four supports per ring and all quantities shown are the book's chosen example. The open base, top and 13 mm mesh do not exclude rodents.

D711 US EPA: Composting at Home Guidance includes two to three volumes of browns for one of greens and at least four weeks of curing after the material no longer reheats following mixing. The book uses a three-to-one loose-volume starting charge, not a measured carbon-to-nitrogen ratio. The EPA rodent guidance calls for a lid, potentially a floor, and no gaps over one-quarter inch, about 6.35 mm; the illustrated 13 mm open ring does not meet that description.

D712 Ireland EPA: A Household Guide to Composting, third edition 2017 Irish guide, especially PDF pages 14-17. Varied fine and coarse materials, moisture control, rain covers and aeration matter; bought activators are not essential. Irish seasonal turning intervals are not an Argentine timetable. The EU comparison concerns Ireland's household practice, not a uniform EU construction rule or a claim that all European climates behave alike.

D713 Ferretería Vazquez: 1.20 m by 5 m galvanised mesh roll Checked 5 November 2026: 13 mm hexagonal mesh, 1.20 m high, 5 m long; displayed undiscounted price ARS 49,000. Two rolls calculate to ARS 98,000, USD 62.42. The page shows both a one-unit stock counter and unavailable wording, so supply of two rolls is unconfirmed. Each roll yields a 4.12 m cut and 0.88 m offcut. Confirm wire gauge, actual dimensions, continuous length and delivered price.

D714 Ferretería Vazquez: mesh sold by the linear metre Alternative listing, checked 5 November 2026: one unit is one linear metre of 1.20 m-high, 13 mm mesh, ARS 7,400. Nine whole metre units would cost ARS 66,600, USD 42.42, if supplied as sufficient continuous lengths for two 4.12 m cuts. The page shows four

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units and unavailable wording; that does not establish the required stock. This alternative is not added to the two-roll cost example.

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

EPA: Environmental Protection Agency The United States environmental authority responsible for the cited material.

mm: Millimetre A unit of length equal to one thousandth of a metre.

PDF, Portable Document Format A file format used to preserve the layout of a document when it is shared or printed. EU, European Union The political and economic union responsible for the European reference or rule cited.

ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. BNA: Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation.

m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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Checked 5 November 2026; USD comparisons use the displayed 4 November BNA rate. Chosen dimensions are not a guarantee of yield or sanitary quality.

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Return to the compost build Return to batch management

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BUILDING THE SOIL: EVIDENCE

D715 Don Agro: TFA analogue compost thermometer Listing code 3393, checked 5 November 2026; displayed update 4 November. One-payment price ARS 72,578.04 including IVA, USD 46.23; a 400 mm steel probe is specified. Confirm the exact model and delivered availability. The seller's fixed process times and temperature narrative are not adopted. Two mesh rolls plus this instrument total ARS 170,578.04, USD 108.65, before the excluded components and work.

D716 TFA Dostmann: compost thermometer 19.2008 German manufacturer specifies a 400 mm probe and overall dimensions 51 × 51 × 410 mm. It recommends measurements at different points. Verify that the offered Argentine instrument is this model. In a nominal 1.20 m-diameter pile filled 1.00 m high, the geometric centre is 600 mm from a side and 500 mm below the top; this probe cannot reach that centre from either surface. Record actual insertion depth and location.

D717 Banco Nación: dated banknote exchange table Checked 5 November 2026. Displayed banknote table: 4 November 2026 at 17:00, USD selling rate ARS 1,570 per USD. Divide the Argentine amounts by 1570 for the comparisons. These dated component calculations are not a complete installed-system quotation, a future exchange rate or confirmation of available stock. Stakes, ties, covers, tools, freight, work and any longer probe remain unpriced.

D718 Pavel Ševela: Compost bin (2), documentary photograph Pavel Ševela / Wikimedia Commons; 23 August 2011; Czech Republic, as recorded in the Commons location category. CC BY-SA 3.0, https://creativecommons.org/licenses/by-sa/3.0/. Original 3456 × 2592 frame and pixels retained without new retouching. The photograph shows a wooden compost enclosure, not the measured wire-ring design, present-day capacity or verified compost maturity. The photo retains its stated licence.

TERMS ON THIS PAGE TFA: TFA Dostmann The name of the instrument manufacturer credited with the compost thermometer; its model number identifies the product.

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IVA: Impuesto al valor agregado Argentine value-added tax. A listed price may include it or show it separately.

mm, Millimetre A unit of length equal to one thousandth of a metre. CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

BNA, Banco de la Nación Argentina The Argentine bank whose exchange-rate quotation provides a reference for the calculation. m, Metre The base unit of length in the International System of Units. D +

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Return to the compost build Return to batch management

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D719 INTI: Manual de buenas prácticas para producir compost hogareño Violeta Silbert Voldman and co-authors, 2018, ISBN 978-950-532-383-8. Household composting reference for choosing a system and separating filling from final maturation. The chapter's two-module operating sequence is its own explanation. Do not add fresh residues to a lot being assessed for completion, or mistake unfinished material for a mature soil amendment.

D720 Comodoro Rivadavia: municipal composting guidance Local Patagonian municipal guidance describes an aerated container with a cover and alternating dry and moist plant materials. Its seasonal duration estimates are not used as a completion guarantee. For an exposed site, record wind, drying and cold conditions; protect the container and judge the batch itself. This is a named local example, not a climate assessment of all Patagonia.

D721 Colorado State University Extension: Making Compost Reviewed October 2022. Discusses partial shade, water access, wind protection, the tendency of wire structures to dry and removable covers. Its discussion of abundant fine grass explains why grass mats should be broken up and mixed with coarser dry residues. No historical dollar cost, Colorado setback rule, fertiliser recipe or manure treatment is imported into this Argentine example.

D722 US EPA: compostable and biodegradable plastics Consumer explanation distinguishes industrial compostability from behaviour in a home pile. A compostable label alone does not establish suitability for this garden system. Exclude bags, packaging, synthetic fibres, produce labels and other plastics from the illustrated batch. Acceptance in a municipal or commercial collection must be checked with the actual receiving operator.

TERMS ON THIS PAGE INTI: Instituto Nacional de Tecnología Industrial Argentina's industrial technology institute. It provides technical and measurement services.

ISBN: International Standard Book Number An identifier distinguishing a book edition and format.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. EPA, Environmental Protection Agency The United States environmental authority responsible for the cited material.

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BY-SA Creative Commons Attribution-ShareAlike · **×** multiplied by · **INTI** Instituto Nacional de Tecnología Industrial · **ISBN** International Standard Book Number · **US** United States · **EPA** Environmental Protection Agency, United States

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CALORIE CROPS: EVIDENCE AND METHODS

D723 La Matanza / INTA EEA AMBA: potato planner Local La Matanza guidance: planting windows, spacing, seed-piece mass, hilling and a guide yield. The measured pilot uses original dimensions; it is not a promised harvest.

D724 INTA: Manual de cultivos para la huerta orgánica familiar Sweet-corn and batata entries distinguish the harvested organ, crop stage and propagation method. A fresh-choclo schedule cannot be substituted for a dry-grain maize specification.

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US United States · **EPA** Environmental Protection Agency, United States · **USD** United States dollar · **BNA** Banco de la Nación Argentina · **INTA** Instituto Nacional de Tecnología Agropecuaria · **EEA** Estación Experimental Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area

D725 EEAOC: Cultivo de poroto, Avance 42-4, December 2021 C. M. Espeche, L. E. Tarulli and M. R. Devani. Regional seed quality, drainage, crop habit, rotation, row spacing and Tucumán sowing period. Historical regional guidance, not a current nationwide prescription.

D726 Purdue: Grain Fill Stages in Corn R. L. Nielsen. Kernel black layer marks physiological maturity, not safe storage dryness. Approximately 55-65 days after silking is a US observation, not days after planting or an Argentine calendar.

Checked 5 November 2026. Field dimensions, rations, yields, retained fractions and buffers are declared examples, not guaranteed production or a complete diet.

Return to crop production Return to demand and costs

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

EEA: Estación Experimental Agropecuaria An agricultural experiment station. The following place name identifies the station in the Argentine institute's network.

AMBA: Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area. The boundary depends on the definition and date cited.

EEAOC: Estación Experimental Agroindustrial Obispo Colombres The agroindustrial experiment station in Tucumán, Argentina.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D727 USDA FoodData Central: SR Legacy data download Official April 2018 CSV archive, published records 1 April 2019: FDC 170026, raw potato flesh and skin; 170288, yellow corn grain; 173734, raw mature black beans. Energy: 77, 365 and 341 kcal/100 g. Archived selected rows retained. These food states are not instructions to eat raw beans.

D728 UC Davis: Potato, Early Crop Early harvested potatoes are more perishable than mature late crops. Storage specifications depend on maturity and culinary use. This source does not substantiate twelve-month storage of the worked example.

D730 Río Negro: Sembrar local planting calendar Lists potato planting in October. Compare with the La Matanza calendar rather than shifting every northern-hemisphere month by six. The table is not a site assessment for all Patagonia.

TERMS ON THIS PAGE USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

SR: Standard Reference The name of the United States agriculture department's legacy food composition dataset.

CSV: Comma-separated values A plain-text table format in which a separator divides one data field from the next.

FDC: FoodData Central The United States agriculture database whose food records carry individual identification numbers.

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EEAOC Estación Experimental Agroindustrial Obispo Colombres · **US** United States · **USDA** United States Department of Agriculture · **CSV** Comma-separated values · **g** gram, 0.001 kilogram · **UC** University of California

UC, University of California The university system whose researchers or extension offices are cited. INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. mm: Millimetre A unit of length equal to one thousandth of a metre.

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D731 INASE: certification stamps and potato sale authorisations Official seed certification pathway covers origin, production inspections, harvest, conditioning and labels. Buy identifiable certified planting material. Commercial multiplication requires its own applicable authorisations.

D732 Teagasc, Ireland: Potato planting and cultivation Supports preparation in suitable soil conditions and the relation between clods, compaction and harvesting. Irish row systems, chemicals and varieties are not adopted as Argentine specifications.

D733 Teagasc, Ireland: Condensation in potato stores Explains condensation when humid air encounters tubers below its dew point, including temperature differences within stores. Ventilation must be selected from measured crop and air conditions.

D734 University of Minnesota: Harvesting and storing home garden vegetables Reviewed 2026. Potato curing at 50-60°F for 14 days converts to 10-15.6°C. Frying potatoes require different storage temperatures. Home-garden estimates do not certify a commercial store or its service life.

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UC University of California · **INASE** Instituto Nacional de Semillas · **°C** degree Celsius, a temperature unit

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TERMS ON THIS PAGE INASE: Instituto Nacional de Semillas Argentina's national seed institute, responsible for seed and cultivar records.

D735 Purdue / Iowa State: Managing Dry Grain in Storage, AED-20 For good-quality clean grain in aerated storage: maize 14% moisture for 6-12 months; edible beans 14% beyond six months. Moisture is wet basis. These conditional US figures are not a warm-climate bag-storage guarantee.

D736 EFSA: Lectins in food and undercooked beans 28 January 2026. Soak dry pulses 6-12 hours, replace the water, boil at 100°C for at least 30 minutes and continue until soft. Variety changes cooking time. Altitude requires a suitable validated process.

D737 Finnish Food Authority: Glycoalkaloids in potatoes Exclude green and sprouted potatoes from the food lot and protect potatoes from light. A storage acceptance record must include condition as well as weight.

D738 Argentina Ministry of Health: Healthy eating graphic and GAPA Argentina's guidance includes multiple food groups. The three-crop calculation is only one part of a food supply plan, not a complete diet or an individual nutrition prescription.

TERMS ON THIS PAGE AED: Automated external defibrillator A device designed to analyse heart rhythm and prompt an appropriate response.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

GAPA: Guías Alimentarias para la Población Argentina Argentina's national dietary guidelines.

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CALORIE CROPS: EVIDENCE AND METHODS

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Return to crop production Return to demand and costs

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US United States · **%** percent, parts per hundred · **EFSA** European Food Safety Authority · **°C** degree Celsius, a temperature unit · **GAPA** Guías Alimentarias para la Población Argentina

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D739 Banco de la Nación Argentina: banknote exchange table Observed 5 November 2026. Displayed banknote selling rate: 4 November 2026, 17:00, ARS 1,570 per USD. Divide ARS by 1,570 for the chapter's comparison. Fees, taxes and future exchange movements are excluded.

D740 Mercado Central de Buenos Aires: November 2026 wholesale vegetables RH041126.XLS, 4 November 2026: PAPA / SPUNTA / V.DOLOR. / BO / 18 kg / 2A / MEDIANO. MO column: ARS 19,000 per bag; minimum 18,000, maximum 20,000. This is a wholesale observation, not an estate-delivered quotation. Original workbook and extracted row retained.

D741 Don Agro: Wile 55 grain moisture meter, code 257 Observed 5 November 2026: ARS 1,080,186.82 including IVA; page's own last-update label 16 June 2026. One component, not a complete store budget. Listed scales do not establish calibration for common black beans; confirm model, crop scale, stock and delivery.

D742 Wile, Finland: Wile 55 manufacturer guidance Check representative samples against an oven reference before harvest; average several readings. Grain and instrument temperatures should closely match. Calibration and supplied grain scales must suit the intended crop.

TERMS ON THIS PAGE ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

XLS: Excel binary spreadsheet format The file extension identifies an older Microsoft Excel workbook used as a data source.

MO, Modal price (precio modal) The wholesale market's representative price column, printed alongside the minimum and maximum for the specified grade and packaging. IVA, Impuesto al valor agregado Argentine value-added tax. A listed price may include it D + number: Book evidence record

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GAPA Guías Alimentarias para la Población Argentina · **ARS** Argentine peso · **USD** United States dollar · **kg** kilogram, a mass unit · **IVA** Impuesto al valor agregado Argentine value-added tax · **MO** Modal price, precio modal in the market table

kg: Kilogram A unit of mass equal to one thousand grams.

MO, Modal price (precio modal) The wholesale market's representative price column, printed alongside the minimum and maximum for the specified grade and packaging. IVA, Impuesto al valor agregado Argentine value-added tax. A listed price may include it or show it separately. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title,

CALORIE CROPS: EVIDENCE AND METHODS

D739 Banco de la Nación Argentina: banknote exchange table Observed 5 November 2026. Displayed banknote selling rate: 4 November 2026, 17:00, ARS 1,570 per USD. Divide ARS by 1,570 for the chapter's comparison. Fees, taxes and future exchange movements are excluded.

D740 Mercado Central de Buenos Aires: November 2026 wholesale vegetables RH041126.XLS, 4 November 2026: PAPA / SPUNTA / V.DOLOR. / BO / 18 kg / 2A / MEDIANO. MO column: ARS 19,000 per bag; minimum 18,000, maximum 20,000. This is a wholesale observation, not an estate-delivered quotation. Original workbook and extracted row retained.

D741 Don Agro: Wile 55 grain moisture meter, code 257 Observed 5 November 2026: ARS 1,080,186.82 including IVA; page's own last-update label 16 June 2026. One component, not a complete store budget. Listed scales do not establish calibration for common black beans; confirm model, crop scale, stock and delivery.

D742 Wile, Finland: Wile 55 manufacturer guidance Check representative samples against an oven reference before harvest; average several readings. Grain and instrument temperatures should closely match. Calibration and supplied grain scales must suit the intended crop.

Checked 5 November 2026. Field dimensions, rations, yields, retained fractions and buffers are declared examples, not guaranteed production or a complete diet.

Return to crop production Return to demand and costs

TERMS ON THIS PAGE ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

XLS: Excel binary spreadsheet format The file extension identifies an older Microsoft Excel workbook used as a data source.

MO, Modal price (precio modal) The wholesale market's representative price column, printed alongside the minimum and maximum for the specified grade and packaging. IVA, Impuesto al valor agregado Argentine value-added tax. A listed price may include it or show it separately. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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MO Modal price, precio modal in the market table · **ARS** Argentine peso · **USD** United States dollar · **kg** kilogram, a mass unit · **IVA** Impuesto al valor agregado Argentine value-added tax

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D743 Verum: Potato harvest near Fulda, Germany, 29 August 2016 Wikimedia Commons; CC BY-SA 3.0, https://creativecommons.org/licenses/by-sa/3.0/. Full 5428 × 3619 source frame retained, no new retouching. Documentary machinery example, not an endorsement or specification for the proposed Argentine estate.

D744 Bean appreciator: Black beans, uncooked, 27 November 2024 Wikimedia Commons; CC0 1.0, https://creativecommons.org/publicdomain/zero/1.0/. Full 6000 × 4000 source pixels retained, no new retouching; EXIF orientation respected. Identified by the photographer from commercial packaging; not a test of species, moisture, nutrients or seed fitness.

D745 University of Minnesota: Proper spring grain drying and storage March 2024 US extension guidance. Summer storage, temperature management and moisture targets depend on conditions; it does not validate a sealed container filled with wet grain or transplant US winter cooling to Argentina.

D746 Colorado State University: High Elevation Food Preparation Guide Reviewed October 2025. Water boils at lower temperatures at elevation and beans take longer to cook. The NOA kitchen must not treat visible boiling as proof of 100°C or apply a sea-level lectin-control time unmodified.

TERMS ON THIS PAGE CC BY-SA: Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

CC0: Creative Commons Zero A public-domain dedication by which a rights holder waives rights to the extent legally possible.

EXIF: Exchangeable image file format The metadata convention that can store camera settings, dates and location in a photograph.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

NOA, Noroeste Argentino Northwestern Argentina. The abbreviation locates the region discussed. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

LIVESTOCK AND STRUCTURES: EVIDENCE

D747 INTA Formosa: heat and poultry management, 2025 14 January 2025. Regional evidence for shade, ventilation, protected fresh water and life-stage feeding. The chapter does not adopt its low building heights or extreme water figure as a universal design. Pilot water allowances are stated assumptions and must be replaced with measured hot-weather demand.

ON THIS PAGE

ARS Argentine peso · **IVA** Impuesto al valor agregado Argentine value-added tax · **BY-SA** Creative Commons Attribution-ShareAlike · **×** multiplied by · **CC0** Creative Commons Zero, a public-domain dedication tool · **EXIF** Exchangeable image file format · **US** United States · **NOA** Noroeste Argentino Northwestern Argentina · **°C** degree Celsius, a temperature unit · **INTA** Instituto Nacional de Tecnología Agropecuaria

D748 University of Minnesota: raising chickens for eggs US comparison: balanced feed, continuous water, one nest per four to five birds and 3-5 ft² indoor area per bird. Conversion: 0.279-0.465 m². The example selects 20 nests for 100 hens and reserves 34 m² of usable bird area; local breed, climate and welfare review still governs.

D749 University of New Hampshire: small-flock health Small-flock care and observation. About 1/4 lb feed per bird daily is indicative, with water increasing in heat. The original 120 g/day feed, 0.50 L/day drinking water, 75% laying rate and 5% rejection/loss assumptions are calculation inputs, not prescriptions or promised performance.

D750 SENASA Resolution 1699/2019, updated text Reviewed 5 November 2026. Commercial poultry establishments require sanitary approval. Article 2 exempts listed categories, including household self-consumption, from that approval but retains RENSPA and conditions of management. A community estate must obtain a classification for its actual operation; the 100-bird example is not an exemption test.

Checked 5 November 2026. Example quantities and operating assumptions require local validation; building briefs require site design and approvals.

Return to livestock Return to structures

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

m², Square metre The area of a square with sides one metre long. SENASA, Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods. RENSPA, Registro Nacional Sanitario de Productores Agropecuarios Argentina's register that identifies agricultural producers and their production sites for sanitary oversight. D + number, Book evidence record

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D751 SENASA: register or update RENSPA The official procedure covers producers and animal holders regardless of tenure, production system, destination or scale; registration is listed as free. Record the property and operator correctly. Registration does not replace provincial or municipal land-use, water, building, waste or food permissions.

D752 SENASA: biosecurity and early reporting, 2026 1 September 2026 campaign. Control access, protect feed and water from wild birds, use dedicated clothing and report suspicious mortality or illness promptly. Check current local restrictions before moving birds; this publication is not a live disease-status certificate.

D753 USDA APHIS: biosecurity basics US comparator for controlling people, clothing, equipment, vehicles, wildlife and other routes of infection. The chapter applies those practical principles through a local veterinary plan; US reporting and approval routes do not substitute for SENASA requirements.

ON THIS PAGE

US United States · **m²** square metre, an area unit · **g** gram, 0.001 kilogram · **L** litre, a volume unit · **%** percent, parts per hundred · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **RENSPA** Registro Nacional Sanitario de Productores Agropecuarios · **USDA** United States Department of Agriculture · **APHIS** Animal and Plant Health Inspection Service

D754 EU laying-hen welfare: Directive 1999/74/EC Article 4 alternative-system figures include 9 hens/m² maximum usable area, one individual nest per seven hens and 15 cm perch per hen. Article 1 excludes establishments below 350 hens and breeding hens from this specific directive, while other welfare duties remain. These are comparisons, not Argentine rules or the proposed density.

TERMS ON THIS PAGE SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

RENSPA: Registro Nacional Sanitario de Productores Agropecuarios Argentina's register that identifies agricultural producers and their production sites for sanitary oversight.

USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

APHIS: Animal and Plant Health Inspection Service The United States agriculture service responsible for animal and plant health.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. EU, European Union The political and economic union responsible for the European reference or rule cited. EC, European Community The suffix identifies the European Community legal instrument in the directive number. m², Square metre The area of a square with sides one metre long. cm: Centimetre A unit of length equal to one hundredth of a metre.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D755 SENASA: family-agriculture goat health guide Goat feeding, water, hygiene and pregnancy/kidding precautions. Use a veterinarian to establish herd-specific prevention and treatments. The chapter explains recurring work and records; it does not provide drug doses or transfer a poultry ration to ruminants.

D756 INTA: dairy-goat production, management and health INTA Salta/Jujuy technical manual. Dairy goats require hygienic milking, animal identification, segregation of unsuitable milk and control of treated animals. Use the professional herd plan and withdrawal instructions. A small goat herd still needs a functioning dairy service.

D757 INTA Chubut: sheep, steppe and wet meadows 29 October 2013. Historical field evidence explains why grazing capacity varies with rainfall, vegetation, land condition and management. No 2013 peso values or stocking rate is reused as a current site budget. Separate wet meadows from steppe in a measured forage assessment.

D758 Teagasc: value of trained dairy staff, 2026 30 March 2026, Ireland. Regular relief milking creates a substitute who knows the herd and parlour, and excessive workload postpones essential tasks. Irish wage examples are not used as Argentine wage quotes. The chapter's poultry minutes and 25% staffing allowance are original test assumptions.

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INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

ON THIS PAGE

EU European Union · **cm** centimetre, 0.01 metre · **m²** square metre, an area unit · **EC** European Community, in this legal citation · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **INTA** Instituto Nacional de Tecnología Agropecuaria · **%** percent, parts per hundred

D759 SENASA Resolution 1035/2024: pig feed controls National controls prohibit specified hazardous inputs for pig feeding, including carcasses, raw viscera and household waste. Establish a legal feed supply, pest control and approved slaughter/testing route. Kitchen refuse is not treated as a free-feed business model.

D760 SENASA: eggs and egg products Fresh edible eggs require, among other criteria, a naturally clean intact shell and cuticle. The guide separates acceptable eggs, rejects and investigation records. Egg handling, packing or processing requires its own local sanitary classification; the produce-wash room is not an egg-washing plant.

D761 Santa Fe ASSAL: handling higher-risk foods Household egg guidance: refrigerate, protect from heat, and do not wash before storage. Commercial washing follows a separate approved process, not this household routine. The estate kitchen must set acceptance, storage and preparation rules for its service and consumers.

D762 University of Vermont: efficient wash/pack planning US planning methods for product, worker and container flow, durable surfaces and dedicated equipment. The 8 × 6 m building, zones, throughput and staffing in this chapter are original briefs. They do not reproduce a surveyed farm or constitute a ready-to-build structural design.

ASSAL: Agencia Santafesina de Seguridad Alimentaria The food-safety agency of Santa Fe Province, Argentina.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. m, Metre The base unit of length in the International System of Units. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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D763 University of Vermont: wash/pack floor design Drainage, slip resistance, cleanable transitions and avoiding standing water. The 1% test fall over 3 m gives 30 mm elevation difference; it is an explicit example for coordination, not a universal floor requirement. Specify structural slab design, actual falls and discharge approval locally.

D764 University of Vermont: hygienic design Equipment should be visible, reachable, cleanable, drainable and suitable for repeated cleaning. Avoid inaccessible joints, trapped water and hollow sections that admit contamination. Specify materials, finishes, dismantling and a cleaning trial with the actual operators.

ON THIS PAGE

SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **ASSAL** Agencia Santafesina de Seguridad Alimentaria · **US** United States · **m** metre, a length unit · **×** multiplied by · **%** percent, parts per hundred · **mm** millimetre, 0.001 metre

D765 Argentina: BPA amendment, Resolution 22/2025 Current Article 154 tris expands the scope of agricultural good practices across listed fresh produce activities. Includes potable handwashing water and separation of animal hazards. Article 3 grants 730 days for adaptation from entry into force. Confirm the operation's classification, transition and locally applicable requirements.

D766 INTI CIRSOC: structural regulation service Argentina's structural reference framework includes loads, wind, snow, materials and seismic design with INPRES. Obtain the locally adopted edition for the site. Room dimensions and calculated surface areas are a commissioning brief; member sizes, foundations, anchorage and wind bracing require project design.

TERMS ON THIS PAGE mm: Millimetre A unit of length equal to one thousandth of a metre.

BPA: Buenas Prácticas Agrícolas Good agricultural practices. In the Argentine farming context these are measures for producing and handling crops responsibly.

INTI, Instituto Nacional de Tecnología Industrial Argentina's industrial technology institute. It provides technical and measurement services. CIRSOC, Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles The Argentine body associated with national structural

LIVESTOCK AND STRUCTURES: EVIDENCE

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Checked 5 November 2026. Example quantities and operating assumptions require local validation; building briefs require site design and approvals.

Return to livestock Return to structures

INTI, Instituto Nacional de Tecnología Industrial Argentina's industrial technology institute. It provides technical and measurement services. CIRSOC, Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles The Argentine body associated with national structural safety regulations.

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BPA Buenas Prácticas Agrícolas Good agricultural practices · **INTI** Instituto Nacional de Tecnología Industrial · **CIRSOC** Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles · **INPRES** Instituto Nacional de Prevención Sísmica · **%** percent, parts per hundred · **m** metre, a length unit · **mm** millimetre, 0.001 metre

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INPRES: Instituto Nacional de Prevención Sísmica Argentina's national earthquake-prevention and seismic-information institute.

m: Metre The base unit of length in the International System of Units.

LIVESTOCK AND STRUCTURES: EVIDENCE

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D767 Argentina Resolution 11/2026: CIRSOC approval Approves CIRSOC 101-2025, 102-2025, 200-2024 and 201-2025 at national level and invites provincial, municipal and CABA adoption. Do not assume an older 2005 wind code or automatic identical local adoption. Record the approved jurisdictional basis in the construction contract.

D768 Angelitos del Norte: dated feed price list Salvador Mazza, Salta; list dated 16 October 2026, checked 5 November. "Ponedora", 25 kg, ARS 25,000 per bag. Nutrition, brand, lot, availability, tax treatment and delivered price require confirmation. Sixteen bags cost ARS 400,000; this is 400 kg purchased, not exactly the calculated monthly feed use.

D769 Avícola Rosarossa: 10 kg feeder quotation Observed 5 November 2026: 10 kg hopper, 38 cm plate, ARS 50,000 each. Seller states capacity for 50 animals. Four selected units cost ARS 200,000. This is a component price; access around the feeder and actual flock behaviour must be checked. No offer is guaranteed or purchase made.

D770 Banco Nación: exchange comparison Observed 5 November 2026: banknote USD selling ARS 1,570, table dated 4 November at 17:00. All USD equivalents in this batch divide ARS by 1,570. This is a dated comparison basis, not a forecast, guaranteed settlement rate or statement of all transaction charges.

TERMS ON THIS PAGE CIRSOC: Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles The Argentine body associated with national structural safety regulations.

CABA: Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area.

kg: Kilogram A unit of mass equal to one thousand grams.

ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. cm, Centimetre A unit of length equal to one hundredth of a metre. USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

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CIRSOC Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles · **CABA** Ciudad Autónoma de Buenos Aires · **ARS** Argentine peso · **kg** kilogram, a mass unit · **cm** centimetre, 0.01 metre · **USD** United States dollar

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CABA: Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area.

D771 University of Minnesota: meat chickens Broiler enterprises require brooding, suitable litter, age-specific space and an arranged processing endpoint. They create batches of meat rather than daily eggs. The chapter does not assume a universal finishing age, strain or slaughter capacity for Argentina.

D772 University of Minnesota: chicks and pullets Explains staged feeding, brooding, water and equipment changes, body-weight monitoring and flock separation. Buying documented ready-to-lay pullets can remove the on-site rearing phase; it does not remove arrival checks, veterinary planning or replacement costs.

D773 SENASA: animal transit document The DT-e procedure covers animal movements and specified animal-origin products within Argentina. Confirm origin, destination, identity, current movement conditions and applicable accompanying records before dispatch. A transporter's booking alone does not authorize movement.

D774 Sanitarios Bonomi: 500 L tank listing Observed 5 November 2026: Forteplas tricapa gris 500 L, Rotoplas, displayed ARS 212,960; a separate cash offer is listed. The standard displayed price is used, approximately USD 135.64. Confirm exact model, fittings, support, delivery and terms. The 80% usable-volume fraction is an original test assumption.

DT-e: Documento de Tránsito electrónico Argentina's electronic documentation for the movement of animals under the applicable sanitary system.

L: Litre One cubic decimetre of volume, or one thousand millilitres.

LIVESTOCK AND STRUCTURES: EVIDENCE

D775 University of Vermont: container landing platforms Raised supports keep harvest containers off the floor and can reduce lifting and bending. Materials and cleanability depend on whether produce contacts them directly. The bench and crate dimensions in this chapter are declared choices for a physical mock-up; load rating and fabrication details require confirmation.

D776 INTA: building a mobile poultry house 2019 practical construction article. Used for the principle of accessible feeders, bedding maintenance and adapting housing to the work. Its homemade feeding suggestions are not reproduced as a nutritionally complete ration. The fixed 100-hen room layout and quantities are original.

D777 Photograph: Rhode Island Red hens, New York SteveStrummer, Red Hens Coop, Stone Barns Center, Pocantico Hills, New York. File description dated 4 September 2013; embedded camera date differs. CC0 1.0: https://creativecommons.org/publicdomain/zero/1.0/. Full 1937 × 1724 source image retained without new retouching. Documentary comparison, not the proposed Argentine installation.

D778 Photograph: Wash Common Farm, England Oscar Taylor / Wash Common Farm / Geograph, 24 March 2023, Enborne, England. CC BY-SA 2.0: https://creativecommons.org/licenses/by-sa/2.0/. Full 4080 × 3060 source image retained without new retouching. The historic barn illustrates an existing building; its hidden structure and fitness for food use are not inferred from the photograph.

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SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **DT-e** Documento de Tránsito electrónico, Argentine animal-transit documentation · **ARS** Argentine peso · **USD** United States dollar · **L** litre, a volume unit · **%** percent, parts per hundred · **INTA** Instituto Nacional de Tecnología Agropecuaria · **CC0** Creative Commons Zero, a public-domain dedication tool · **×** multiplied by · **BY-SA** Creative Commons Attribution-ShareAlike

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Return to livestock Return to structures

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FARM PLAN AND INPUTS: EVIDENCE

D779 IGN: POSGAR 07 national geodetic frame Argentina adopted POSGAR 07 in 2009. Specify coordinate reference system, survey date, vertical datum and accuracy in the commissioned survey. A phone coordinate, satellite image or original rectangular example does not establish a legal boundary.

D780 IGN: MDE-Ar version 2.1 elevation model National elevation model: 30 m spatial resolution and approximately 2 m vertical accuracy. Useful for regional screening; unsuitable for setting a small floor fall or drain invert. Replace screening data with a site survey for construction levels.

D781 INTA Balcarce: establishment-scale cartography Geomatics service integrates and analyses spatial information for farm decisions. The chapter's layer register, field identification, observation log and procurement sequence are original operating methods, not a copied INTA site plan.

D782 INTA: SisINTA georeferenced soil profiles 26 June 2025. More than 7,000 soil profiles support regional investigation. Nearby profiles do not replace samples and field assessment on the purchased parcel. Keep soil zones, past use and sample coordinates together.

Return to farm plan Return to farm inputs

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CC0 Creative Commons Zero, a public-domain dedication tool · **INTA** Instituto Nacional de Tecnología Agropecuaria · **×** multiplied by · **BY-SA** Creative Commons Attribution-ShareAlike · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **POSGAR** Posiciones Geodésicas Argentinas · **MDE-Ar** Modelo Digital de Elevaciones de la República Argentina · **m** metre, a length unit

MDE-Ar, Modelo Digital de Elevaciones de la República Argentina A gridded elevation model published by Argentina's national mapping institute. INTA, Instituto Nacional de Tecnología Agropecuaria

TERMS ON THIS PAGE IGN: Instituto Geográfico Nacional Argentina's national mapping agency and the source for the cartographic or survey reference.

MDE-Ar, Modelo Digital de Elevaciones de la República Argentina A gridded elevation model published by Argentina's national mapping institute. INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and

POSGAR: Posiciones Geodésicas Argentinas Argentina's national geodetic reference framework for survey coordinates.

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D783 Buenos Aires Province: water-approval framework 2019 ADA framework separates water prefeasibility, fitness of proposed works and permissions. Historical primary text is cited for the structure of review, not as a complete current filing checklist. Confirm amendments, fees, classification and present procedure with ADA before commitment.

D784 CABA: water-management permission Official procedure for the Autonomous City of Buenos Aires, checked 5 November 2026. Includes professional/project documentation. CABA is a different jurisdiction from Buenos Aires Province; this route does not authorise a rural provincial well or discharge.

D785 Córdoba APRHI: exploitation of water resources Official route addresses new permissions and existing uses, with documentation according to the use and works. The estate must identify the responsible provincial authority. No national automatic drilling entitlement or universal extraction rate is assumed.

D786 University of Missouri: livestock and poultry sites US comparison for considering neighbours, access, drainage, soils and environmental constraints before locating livestock buildings. Local separation distances and approvals must be established for the Argentine property; Missouri provisions are not transferred as Argentine law.

TERMS ON THIS PAGE ADA: Autoridad del Agua The water authority of Buenos Aires Province in this permitting context.

CABA, Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area. APRHI, Administración Provincial de Recursos Hídricos Córdoba's provincial water-resources authority. US, United States of America Identifies the country or jurisdiction of the source,

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IGN Instituto Geográfico Nacional, Argentina's national geographic institute · **ADA** Autoridad del Agua, Buenos Aires Province · **CABA** Ciudad Autónoma de Buenos Aires · **APRHI** Administración Provincial de Recursos Hídricos Córdoba's provincial water-resources authority · **US** United States

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D787 Teagasc: managing the farmyard Irish comparison: prevent clean rainwater becoming contaminated and keep it out of effluent storage. The chapter's clean and dirty routes are original diagrams; actual levels, authorised outfalls and environmental conditions govern implementation.

D788 INTA Reconquista: Y porá water-planning platform 30 September 2025. Integrates animal demand, additional uses, evaporation/infiltration and distribution variables such as pipe length and tank height; exports planning data. A useful local design aid, not proof that this chapter's example supplies a particular property.

D789 INTA: livestock management in summer Regional summer guidance includes 14,000-16,000 L/day for 200 cows and reserve planning. The original ten-cow case selects 70 L/head/day plus 100 L cleaning and three days of storage. It is a calculation assumption, not a maximum need or guarantee for lactating cattle.

D790 INTA and CREA: a livestock water plan Water planning considers source, quantity, quality, storage and distribution together. Commission source and endpoint sampling, seasonal yield and delivery assessment. Water acceptable for one use is not automatically potable or appropriate for every animal category.

CREA: Consorcios Regionales de Experimentación Agrícola Argentina's network of regional farm experimentation groups, credited with the livestock planning source.

D791 Kansas State: sizing a livestock watering system US comparison distinguishes daily demand, usable storage, refill rate, access and pipe/head constraints. The chapter uses original bucket tests and a short-bout mass balance; it does not adopt a US herd-density rule or declare a catalogue diameter adequate.

D792 Nebraska Extension: feed dry-matter conversions G2093, revised October 2022. As-fed mass equals required dry matter divided by dry-matter fraction. The chapter's 500 kg cattle, 2.2% intake, 85% hay dry matter and 5% handling loss are chosen arithmetic inputs, not a balanced ration.

D793 SENASA: animal feed and registered products Official animal-feed information and registration routes, checked 5 November 2026. Verify supplier, product, species, life stage, lot, instructions and the current regulatory route for the intended manufacture or use. Registration alone does not establish suitability for an individual herd.

ON THIS PAGE

CABA Ciudad Autónoma de Buenos Aires · **APRHI** Administración Provincial de Recursos Hídricos Córdoba's provincial water-resources authority · **US** United States · **INTA** Instituto Nacional de Tecnología Agropecuaria · **L** litre, a volume unit · **CREA** Consorcios Regionales de Experimentación Agrícola · **kg** kilogram, a mass unit · **%** percent, parts per hundred · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

D794 Oregon State: minerals for mixed livestock November-December 2021 extension newsletter discusses copper differences among sheep, cattle and goats. Provide controlled species-specific access and a professionally balanced whole diet. The chapter gives no improvised mineral dose or universal mixed-herd supplement.

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

kg: Kilogram A unit of mass equal to one thousand grams.

SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

FARM PLAN AND INPUTS: EVIDENCE

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Return to farm plan Return to farm inputs

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

D795 University of Minnesota: manure sampling and analysis Testing distinguishes total nutrient content, available fractions, moisture and reporting units. The original 10 t case uses invented lab inputs solely to demonstrate calculation. Elemental P × 2.29 gives P2O5 equivalent; do not confuse dry-weight and as-received results.

D796 USDA NRCS: Nutrient Management, practice 590 The official page directs users to locally adopted technical standards rather than applying the national document as an installation design. Used as a US planning comparator; local Argentine agronomy, water protection and approvals determine the estate plan.

D797 INTA Córdoba: spatial manure N and P contributions 2026 research presented at the Argentine Soil Science Congress examines spatial contributions to nitrogen and phosphorus balances. Regional abundance is not parcel-specific application permission; use measured stock, analysis, soil tests and crop demand.

ON THIS PAGE

US United States · **kg** kilogram, a mass unit · **%** percent, parts per hundred · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **×** multiplied by · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service · **INTA** Instituto Nacional de Tecnología Agropecuaria

D798 INTA: environmental management of feedlots Local work addresses manure and effluent management in intensive cattle systems. The chapter's measured-collection example excludes manure left on pasture. Storage calculations do not constitute a liner, foundation, drainage or treatment design.

TERMS ON THIS PAGE USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

NRCS: Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information.

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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D799 Argentina: BPA, Joint Resolution 22/2025 Article 154 tris addresses agricultural water, animals and organic amendments. It requires treatment of own-produced organic amendments to reduce sanitary risk and prohibits untreated amendments and sewage/septic residues. Published 15 April 2025; 730-day adaptation provision from entry into force. Confirm the actual crop and activity obligations.

D800 Teagasc: nutrient and fertiliser management Irish/EU comparison links nutrient plans to soil information, crop need and pathways to water. Irish regulatory limits and spreading calendars are not Argentine prescriptions. The worked case demonstrates why meeting nitrogen demand alone can over-apply phosphorus.

D801 University of Florida: forage moisture testing Methods of Forage Moisture Testing describes moisture as a control on harvest timing, storage and ration calculation. Moisture targets depend on product and preservation method. Use representative testing and the selected system's specification; the chapter does not offer one universal safe bale moisture.

D802 NC State: conserving hay and silage Explains different preservation mechanisms: drying for hay and controlled anaerobic fermentation for silage. Select a process suited to crop, climate, machinery and feeding rate. Equal dry matter does not mean equal nutrition or that wet forage can share hay-storage conditions.

TERMS ON THIS PAGE BPA: Buenas Prácticas Agrícolas Good agricultural practices. In the Argentine farming context these are measures for producing and handling crops responsibly.

EU: European Union The political and economic union responsible for the European reference or rule cited.

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service · **US** United States · **BPA** Buenas Prácticas Agrícolas Good agricultural practices

NC State: North Carolina State University The United States university credited with horticultural or extension information.

D803 Don Agro: Vulplast circular 500 L drinker Page opened 5 November 2026: ARS 468,994.17 including IVA, one-payment price; listed out of stock. Includes a 1-inch Torrent valve and float. Comparison only; not an orderable budget commitment. Earlier search extraction showed another price, so the opened product page governs.

D804 Don Agro: Crossio 3/4-inch valve and float kit Page observed 5 November 2026: ARS 85,324.36 including IVA, one payment, valve/float/rod assembly. Nominal connection size does not certify discharge at low head. Not assumed interchangeable with the 1-inch assembly in D803.

D805 Construcción Vía Web: PN10 PEAD rolls Observed 5 November 2026: 100 m Entubando rolls, 32 mm ARS 332,203.66 and 50 mm ARS 801,648.62, IVA included. These are material-price comparisons, not pipe-selection approval. Freight, fittings, trench, bedding, testing, installation and supplier confirmation are additional.

D806 Banco Nación: banknote exchange-rate display Displayed 5 November 2026, 09:49: US dollar banknote selling rate ARS 1,570/USD. USD equivalents divide ARS by 1,570 for comparison only; this is not a forward rate, payable import price or reimbursement entitlement.

IVA: Impuesto al valor agregado Argentine value-added tax. A listed price may include it or show it separately.

PN10, Nominal pressure designation, PN 10 The pipe or fitting's nominal pressure class. Actual service limits depend on material and operating conditions. PEAD, Polietileno de alta densidad High-density polyethylene, a plastic used for pipe and other durable products.

mm, Millimetre A unit of length equal to one thousandth of a metre. US, United States of America Identifies the country or jurisdiction of the source, price or institution. USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents. L, Litre One cubic decimetre of volume, or one thousand millilitres.

m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D807 SMN: climate normals, 1991-2020 Use appropriate station climate normals for regional temperature, rainfall and wind context, then obtain site-specific extremes and observations. Climate normals do not establish a design flood, a particular year's water supply or conditions in every part of a province.

D808 University of Minnesota: measuring forage quality Forage analysis supports decisions that colour or smell alone cannot settle. Sample representative lots and relate laboratory information to the feed actually issued. Keep ration approval, receiving checks and batch traceability separate from an attractive purchase price.

D809 Mario Martin Sbarbaro: Puerto Alvear, Entre Ríos Documentary photograph, 10 January 2017; 4160 × 2340 pixels; CC BY-SA 4.0, https://creativecommons.org/licenses/by-sa/4.0/. Original full frame retained

ON THIS PAGE

ARS Argentine peso · **IVA** Impuesto al valor agregado Argentine value-added tax · **L** litre, a volume unit · **PEAD** Polietileno de alta densidad High-density polyethylene, a plastic used for pipe and other durable products · **m** metre, a length unit · **mm** millimetre, 0.001 metre · **US** United States · **USD** United States dollar · **SMN** Servicio Meteorológico Nacional · **BY-SA** Creative Commons Attribution-ShareAlike · **×** multiplied by

without new retouching. Visible standing water and cattle illustrate questions for a survey; no parcel boundary, flood frequency, ownership or sale offer is inferred.

D810 USDA / Lance Cheung: cattle water point, South Carolina Spring Steel Farm, Wagener, 17 November 2020; 4000 × 3000 pixels. USDA employee work, public domain in the US. Original full frame retained. Close view documents animals at a ball-type waterer; it cannot establish buried services, refill performance, hygiene results or applicability in Argentina.

TERMS ON THIS PAGE SMN: Servicio Meteorológico Nacional Argentina's national weather service.

CC BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. USDA, United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

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Checked 5 November 2026. Example quantities and operating assumptions require local validation; building briefs require site design and approvals.

Return to farm plan Return to farm inputs

D809 Mario Martin Sbarbaro: Puerto Alvear, Entre Ríos Documentary photograph, 10 January 2017; 4160 × 2340 pixels; CC BY-SA 4.0, https://creativecommons.org/licenses/by-sa/4.0/. Original full frame retained without new retouching. Visible standing water and cattle illustrate questions for a survey; no parcel boundary, flood frequency, ownership or sale offer is inferred.

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FIELD PHOTOGRAPHS AND IMAGE EVIDENCE

D811 Carlos Verbelen: Tandil rocky-pasture photograph

inferred.

D812 Carlos Verbelen: wider Tandil landscape photograph

D813 Consejo Federal de Inversiones: Sierras de Tandilia Regional landscape description addresses ranges, valleys and productive land. Used only for regional context. It does not identify the author's exact location or classify the rocks, trees or land capability visible in his photographs. Current land-use rights and engineering conditions require separate records.

D814 Municipalidad de Tandil: IDE GeoServicios Official municipal WMS/WFS information explains accessing geographic layers through a GIS. The book's proposed survey and due-diligence packet is an original commissioning method. Public layers support investigation; they are not presented as certified title, a cadastral survey or planning permission.

Checked 5 November 2026. Original examples are labelled; archival identity, documentary photography and interpretation remain distinct.

Return to Tandil Return to historical image

User supplied , 1600 × 900 pixels. Author identifies Tandil, Argentina. Exact viewpoint and capture date unconfirmed. Permission to use in this book

User supplied , 1600 × 900 pixels. Author identifies Tandil, Buenos Aires Province. Date and precise viewpoint are not established. Original complete

TERMS ON THIS PAGE IDE: Infraestructura de Datos Espaciales A spatial-data infrastructure for publishing and sharing geographic data and map services.

WMS: Web Map Service A standard for requesting rendered map images from a geographic information service.

WFS: Web Feature Service A standard for accessing geographic features and their attributes as data.

GIS, Geographic information system A system for organising, analysing and displaying information tied to geographic locations. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D815 IGN: Manual de signos cartográficos Official Argentine cartographic manual, section 268, distinguishes contour interval and types including figurative contours that convey approximate shape without a survey. CT1's concentric hill and CT2's route calculations are original invented examples. A printed scale must be checked after resizing.

D816 USGS: US Topo map symbol guide US comparison for topographic conventions, contour interpretation and map context. Contours represent equal elevation; their spacing must be read with interval, units and scale. CT1's 30 m rise over 60 m run is 50%, approximately 26.6 degrees. No real property elevations are supplied.

D817 Bosch: automotive integrated circuits Manufacturer describes distinct power, sensor, actuator, restraint and network functions. VE1 is an original functional teaching diagram, not a reproduction of a Bosch vehicle topology. No universal connector assignments, wire sizes, fuse ratings or safety certification are asserted.

ON THIS PAGE

IDE Infraestructura de Datos Espaciales, spatial-data infrastructure · **×** multiplied by · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **USGS** United States Geological Survey · **US** United States · **m** metre, a length unit · **%** percent, parts per hundred

D818 Bosch: electronic engine control unit Manufacturer describes management of fuel supply, air, injection and ignition, with application-dependent integration. Used for the distinction between a controller's functions and

D818 Bosch: electronic engine control unit Manufacturer describes management of fuel supply, air, injection and ignition, with application-dependent integration. Used for the distinction between a controller's functions and a physical harness. The actual vehicle identity, service documentation and configuration govern repairs.

TERMS ON THIS PAGE IGN: Instituto Geográfico Nacional Argentina's national mapping agency and the source for the cartographic or survey reference.

USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

m: Metre The base unit of length in the International System of Units.

D818 Bosch: electronic engine control unit Manufacturer describes management of fuel supply, air, injection and ignition, with application-dependent integration. Used for the distinction between a controller's functions and a physical harness. The actual vehicle identity, service documentation and configuration govern repairs.

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USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

FIELD PHOTOGRAPHS AND IMAGE EVIDENCE

D819 DENSO: alternator troubleshooting Manufacturer guidance discusses loaded voltage-drop testing and vehicle-specific standards. No numerical charging-system limit is transferred to every vehicle or circuit. VE2's job-card and procurement workflow is original. The guidance is a European technical comparator, not an Argentine homologation record.

D822 Fluke: Ohm's law Instrument manufacturer explains V = I × R. VE3 independently calculates 5.00 V / 100 Ω = 0.050 A and 0.250 W. Actual resistance tolerance, measured voltage, mounting and temperature affect the result. Current is read from the supply; a current-configured meter must not be connected across its output.

TERMS ON THIS PAGE NHTSA: National Highway Traffic Safety Administration The United States road and vehicle safety agency.

DTN: Detiannuo A shortened manufacturer name on air-bag inflator markings described by the United States vehicle safety authority.

DC: Direct current Electric current that flows in one direction. A battery provides a familiar example.

ON THIS PAGE

IGN Instituto Geográfico Nacional, Argentina's national geographic institute · **V** volt, electrical potential difference · **Ω** ohm, electrical resistance · **A** ampere, electric current · **W** watt, power · **=** equals · **×** multiplied by · **NHTSA** National Highway Traffic Safety Administration, the United States road-vehicle safety agency

mA, Milliampere One thousandth of an ampere, a unit of electric current. V, Volt The unit of electric potential difference. W, Watt The unit of power. One watt equals one joule of energy transferred per second. A, Ampere The unit of electric current. One ampere transfers one coulomb of charge per second.

D823 Zentralbibliothek Zürich: Basel broadside, 1566 Samuel Apiarius and Samuel Coccius; Basel, 1566; PAS II 6/5; woodcut and letterpress, 18.2 × 23.8 cm. Catalogue describes reports on 27-28 July and 7 August. Public Domain Mark. Complete institution-supplied IIIF scan, including reference target, used without retouching. Original object and modern interpretations must be distinguished.

D824 US Naval Observatory: calendars Distinguishes solar, lunar, luni-solar and special-purpose calendars and their adjustment rules. Existing calendar companion 1343-1353 remains the assigned home for the new calendar uploads. An old printed concordance is not automatic evidence that its month names exactly match modern civil dates.

D825 USNO: Explanatory Supplement, Calendars chapter E. G. Richards, Calendars, in the Explanatory Supplement to the Astronomical Almanac, third edition. Around epoch 2000 the mean synodic month is about 29.53059 days. Thirteen 28-day periods total 364 days; that schedule is not identical to thirteen observed lunations. Retain cultural and astronomical descriptions separately.

D826 Mashantucket Pequot Museum: Thirteen Moons Named community source for the turtle-calendar teaching. Use the existing calendar companion with attribution to the particular tradition, not a claim that every Indigenous nation or every turtle follows one universal system. This is a cultural source, not a 28-day measurement of the mean synodic month.

TERMS ON THIS PAGE PAS: Library shelfmark prefix PAS In the Zürich catalogue the prefix and following numbers locate the Basel broadside. The cited record supplies the shelfmark.

cm: Centimetre A unit of length equal to one hundredth of a metre.

IIIF, International Image Interoperability Framework Standards that allow digital images and collection viewers to work together. US, United States of America Identifies the country or jurisdiction of the source, price or institution. USNO, United States Naval Observatory The United States service providing the cited astronomical time or ephemeris reference. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

FIELD PHOTOGRAPHS AND IMAGE EVIDENCE

D827 Oregon Poison Center: plants and mushrooms

D829 Argentine gas regulator: internal-installation questions

D830 NASA Goddard SVS: origins of the elements

Checked 5 November 2026. Original examples are labelled; archival identity, documentary photography and interpretation remain distinct.

Return to Tandil Return to historical image

excluded from instructions. Proposed placement is Book V, identity before use, with expert identification and verified species/part records.

TERMS ON THIS PAGE NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

ON THIS PAGE

cm centimetre, 0.01 metre · × multiplied by · **US** United States · **NASA** National Aeronautics and Space Administration · **SVS** Scientific Visualization Studio

SVS: Scientific Visualization Studio The NASA group that produces the cited scientific visualisation.

D831 Dmitry G: Citroën Jumper wiring photograph 24 October 2013; own-work photograph; 3648 × 2736 source pixels, EXIF orientation retained. CC BY-SA 3.0, https://creativecommons.org/licenses/by-sa/3.0/. Original file reproduced at full frame without retouching. It illustrates physical wiring access, not an approved repair or identifiable pin assignments.

D832 Library of Congress: Roudanez automobile-wiring guide George Roudanez, The genuine blue print guide to correct automobile wiring, Chicago, Automobile Engineering Co., 1920. Catalogue: 491 blueprints; TL272 .R6. LOC identifies the collection as public domain. Catalogue metadata was retrieved; direct page retrieval returned 403, so no internal plate was copied or claimed as inspected.

TERMS ON THIS PAGE EXIF: Exchangeable image file format The metadata convention that can store camera settings, dates and location in a photograph.

CC BY-SA: Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

LOC: Library of Congress The United States national library, which holds the cited photograph or manuscript.

PRESERVATION, ORCHARDS AND WINDBREAKS

D833 SENASA | Botulism and preserved vegetables, 3 February 2026 Argentine warning: botulinum toxin cannot be detected by sight, smell or taste. Establishment and product identity matter. This consumer article is not a processing schedule.

D834 NCHFP | Ensuring Safe Canned Foods US research-based distinction between low-acid and acid foods. A pH reading, closed lid or boiling-water bath alone does not validate an invented low-acid recipe.

D835 NCHFP | Using Pressure Canners Equipment suitability, ten-minute steam venting, pressure monitoring, full timing restart after a pressure drop and natural cooling. Follow the complete instructions and the matched

D835 NCHFP | Using Pressure Canners Equipment suitability, ten-minute steam venting, pressure monitoring, full timing restart after a pressure drop and natural cooling. Follow the complete instructions and the matched manufacturer manual.

D836 NCHFP | Snap and Italian beans: green and wax Exact NCHFP green-bean pressure-canning tables. The worked example retains the specified food, hot pack, US pint container, dial gauge and elevation band.

Checked 5 November 2026. Worked examples are labelled. Food processes, regional guidance, price dates and image rights retain their source scope.

Return to preservation Return to orchard

TERMS ON THIS PAGE SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

NCHFP: National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

ON THIS PAGE

NASA National Aeronautics and Space Administration · **EXIF** Exchangeable image file format · **BY-SA** Creative Commons Attribution-ShareAlike · **×** multiplied by · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **NCHFP** National Center for Home Food Preservation · **US** United States · **pH** A logarithmic measure of hydrogen-ion activity

pH, A measure of acidity or alkalinity The scale is based on hydrogen-ion activity. A change of one pH unit corresponds to a tenfold change in that activity. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D837 NCHFP | Cooling jars and testing seals Undisturbed cooling for 12-24 hours, no hot-lid retightening and seal checks after cooling. A seal is a closure check, not evidence that the heat process was adequate.

D838 NCHFP | Freezing green, snap or wax beans Select and prepare tender pods; water blanch three minutes; cool, drain and package with half-inch headspace. Derived from So Easy to Preserve, sixth edition, 2014. This is a freezing preparation, not a canning process.

D839 NCHFP | Blanching vegetables Blanching controls quality changes associated with enzymes. Use vegetable-specific timing, sufficient boiling water and prompt cooling. Do not interpret blanching as commercial sterilisation.

D840 NCHFP | Packaging and labelling foods Suitable freezer packaging, expansion allowance where required, product identity, date, quantity and added ingredients. The book adds an original lot code and inventory location system.

TERMS ON THIS PAGE NCHFP: National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

D841 FDA | Food and water safety during power outages and floods US household guidance: about 48 hours for a full closed freezer, 24 for half-full; these are estimates. Ice crystals or food at 40°F or colder can support refreezing under this guidance. Unknown exposure is not cleared by appearance.

D842 Argentina Health | How to store and preserve food Keep raw and cooked foods separate, portion and label freezer stock, and thaw in the refrigerator. The national page advises against thawing at room temperature.

D843 Food Safety Authority of Ireland | Temperature Control EU example from Ireland: food-business freezers at −18°C or colder, refrigerated thawing and calibrated food-temperature checks. Routine advice against refreezing thawed food is distinct from the US emergency assessment.

D844 Gafa | FGHF freezer manufacturer operating manual FGHF200B-M table: 200 L net, 15.5 kg per 24 hours freezing capacity, 290 kWh/year and 220-240 V, 50 Hz. Rated capacity is not measured site performance. Use Argentine food-safety guidance for thawing; the manual includes conflicting room-temperature advice.

D842 Argentina Health | How to store and preserve food Keep raw and cooked foods separate, portion and label freezer stock, and thaw in the refrigerator. The national page advises against thawing at room temperature.

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ON THIS PAGE

pH A logarithmic measure of hydrogen-ion activity · **NCHFP** National Center for Home Food Preservation · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **US** United States · **EU** European Union · **°C** degree Celsius, a temperature unit · **L** litre, a volume unit · **kg** kilogram, a mass unit · **kWh** kilowatt-hour, energy · **V** volt, electrical potential difference · **Hz** hertz, cycles per second

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TERMS ON THIS PAGE FDA: Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here.

FGHF / FGHF200B-M: Gafa freezer model designation The letter-number marking identifies a product family or variant. Use the specific model's operating manual.

kg: Kilogram A unit of mass equal to one thousand grams.

kWh, Kilowatt-hour A unit of energy. One kilowatt supplied for one hour equals one kilowatt-hour, or 1,000 watt-hours. Hz, Hertz Frequency in cycles per second. L, Litre One cubic decimetre of volume, or one thousand millilitres. V, Volt The unit of electric potential difference. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

PRESERVATION, ORCHARDS AND WINDBREAKS

D845 Leogar | Gafa FGHF200B-M advertised price Observed 5 November 2026: ARS 578,999 in one payment, excluding delivery. Page contains conflicting stock messages; availability is unconfirmed. A dated price reference, not a quotation or assurance of supply.

D846 Banco de la Nación Argentina | Banknote exchange board Observed board dated 5 November 2026 at 09:49: US dollar banknote selling rate ARS 1,570 per USD. Conversions are dated comparisons; fees, tax and actual transaction terms can differ.

D847 US National Agricultural Library | Historical pressure canners The institutional exhibit identifies a pressure-canner discussion in Farmers' Bulletin 1211, Home Canning of Fruits and Vegetables, 1921. Historical equipment documentation is not a current safety standard.

D848 SENASA | Authorised food products and establishments Explains jurisdictional authorisation and the RNE/RNPA system. Confirm the route appropriate to an estate kitchen, processing establishment and intended distribution with the competent Argentine authority.

Checked 5 November 2026. Worked examples are labelled. Food processes, regional guidance, price dates and image rights retain their source scope.

Return to preservation Return to orchard

TERMS ON THIS PAGE FGHF200B-M: Gafa freezer model designation The letter-number marking identifies a product family or variant. Use the specific model's operating manual.

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EU European Union · **US** United States · **°C** degree Celsius, a temperature unit · **L** litre, a volume unit · **kg** kilogram, a mass unit · **kWh** kilowatt-hour, energy · **V** volt, electrical potential difference · **Hz** hertz, cycles per second · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **ARS** Argentine peso · **USD** United States dollar · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

RNE: Registro Nacional de Establecimientos The Argentine food-establishment registration identifying an authorised production establishment.

RNPA: Registro Nacional de Productos Alimenticios Argentina's registration for an authorised food product.

PRESERVATION, ORCHARDS AND WINDBREAKS

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D847 US National Agricultural Library | Historical pressure canners The institutional exhibit identifies a pressure-canner discussion in Farmers' Bulletin 1211, Home Canning of Fruits and Vegetables, 1921. Historical equipment documentation is not a current safety standard.

D849 ANMAT | Who must obtain a food-handler credential Explains the Carnet de Manipulador requirement for food-handling activities in the specified establishments. A food-handler credential does not itself authorise a new product or thermal process.

D850 Nutrition, Food Safety & Health | Pressure canner and canning jars Documentary photograph dated 26 April 2016, original Flickr source, CC0 1.0: https://creativecommons.org/publicdomain/zero/1.0/. Full image

ON THIS PAGE

ARS Argentine peso · **US** United States · **USD** United States dollar · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **CC0** Creative Commons Zero, a public-domain dedication tool · **EXIF** Exchangeable image file format

retained and oriented from EXIF, with no new retouching. It does not identify a model approved for the worked recipe.

D851 INTA Alto Valle | Apple rootstocks, 2018 Verónica De Angelis and Paula Calvo: rootstock choice changes vigour, anchorage, bearing and adaptation. EM9 requires support and careful irrigation. New diagrams are original schematic drawings; INTA illustrations are not reproduced.

D852 Luis Iannamico, INTA | Cultivo del nogal, 2015 Northern Patagonia guide: site and drainage investigation, healthy nursery plants, wind pollination and cultivar flowering overlap. Regional planting and spacing examples are not national prescriptions; dated market statistics are not used as current forecasts.

TERMS ON THIS PAGE ANMAT: Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology.

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EXIF: Exchangeable image file format The metadata convention that can store camera settings, dates and location in a photograph.

INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

D853 INTA | Nut-crop zoning and productive development platform The programme evaluates geographic suitability and limitations for nut crops. Use zoning to screen an investment, then investigate the actual parcel, cultivar, water and management requirements.

D854 SENASA | Electronic plant transit document, DTV-e Official service describes propagation material documentation, transport and recipient closure. Consult current commodity and regional requirements before dispatch. Later-dated links on the dynamic page are not treated as evidence of law in force on the book's access date.

D855 SENASA | Nursery and propagation-material frequently asked questions RENFO registration supports phytosanitary oversight and traceability of propagation operators. Verify the nursery and supplied material; a healthy appearance alone does not establish phytosanitary status.

D856 University of Minnesota Extension | Growing apples US comparison for cultivar cross-pollination, root inspection, graft placement and planting care. Minnesota calendar months and cultivar recommendations are not copied into Argentina. About 4 in above soil is its apple-graft example, not a universal rule for all trees.

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

DTV-e: Documento de Tránsito Vegetal electrónico Argentina's electronic document for the movement of regulated plant material.

RENFO, Registro Nacional Fitosanitario de Operadores de Material de Propagación, Micropropagación y/o Multiplicación Vegetal Argentina's plant-health register for nurseries and other operators that propagate plants. US, United States of America Identifies the country or jurisdiction of the source, price or institution.

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D857 Teagasc, Ireland | Commercial apple production Irish example uses 1.25 m within rows and 3.25 m between rows, with trees, support, guards, machinery and facilities in the capital model. Dated Irish prices, grant assumptions and free-land assumptions are not Argentine costs.

D858 Gervacio Rosales | Espaldera en otoño, 26 April 2014 Argentine orchard photograph from Panoramio, CC BY 3.0: https://creativecommons.org/licenses/by/3.0/. Catalogue tag General Roca; the recorded coordinate is not used to assert an exact property. Full frame unchanged; cultivar, rootstock and spacing unverified.

D859 INTA | New poplar clone for windbreaks, 16 July 2024 Alto Valle demonstration of Ragonese 22 INTA and Triplo poplars. Describes perpendicular orientation to prevailing west/southwest winds in northern Patagonian valleys. Reported trial performance is not a height or survival guarantee at another site.

D860 CIEFAP | Forest windbreaks in Patagonia Regional windbreak resource covering irrigated valleys in Río Negro, Neuquén, Chubut and Santa Cruz. Supports the Argentine setting; species, water supply and management still require a site decision.

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INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. CIEFAP, Centro de Investigación y Extensión Forestal Andino Patagónico The forest research and extension centre for the Andean Patagonian region. m: Metre The base unit of length in the International System of Units.

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SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **DTV-e** Documento de Tránsito Vegetal electrónico, Argentine plant-transit documentation · **RENFO** Registro Nacional Fitosanitario de Operadores de Material de Propagación, Micropropagación y/o Multiplicación Vegetal · **US** United States · **m** metre, a length unit · **BY** Attribution condition in a Creative Commons licence · **INTA** Instituto Nacional de Tecnología Agropecuaria · **CIEFAP** Centro de Investigación y Extensión Forestal Andino Patagónico

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. CIEFAP, Centro de Investigación y Extensión Forestal Andino Patagónico The forest research and extension centre for the Andean Patagonian region. m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D861 USDA NRCS | Windbreak/Shelterbelt Establishment and Renovation, 380, July 2021 Design relates to wind direction, mature height, density, purpose and maintenance. The 10H leeward and 2H windward convention appears under crop-protection criteria. It is not a guaranteed uniform velocity reduction or an Argentine construction approval.

D862 Savannainstitute | Young three-row windbreak in Illinois 2 August 2024. Credit Savannainstitute; EXIF author Wil Crombie. CC BY-SA 4.0: https://creativecommons.org/licenses/by-sa/4.0/. Full frame unchanged. Creator describes fruit/nut trees inside, evergreens centrally and hybrid poplars outside; no Argentine site is implied.

D863 Teagasc, Ireland | Strawberries: greenhouse salad crops Irish guidance distinguishes fruit production from runner production, keeps crowns at or just above soil level and keeps fruit away from wet surfaces. Fertiliser and soil amendments are not transferred as a blanket prescription.

D864 Enrique Goites, INTA | Manual de cultivos para la Huerta Orgánica Familiar, 2008 Frutilla entry begins on printed page 61. Supports identifying cultivar behaviour and propagation in an Argentine household-horticulture context. Upload folder date 2023 is not the publication date; the book's planting grid is an original example.

TERMS ON THIS PAGE USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

NRCS: Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information.

D862 Savannainstitute | Young three-row windbreak in Illinois 2 August 2024. Credit Savannainstitute; EXIF author Wil Crombie. CC BY-SA 4.0: https://creativecommons.org/licenses/by-sa/4.0/. Full frame unchanged. Creator describes fruit/nut trees inside, evergreens centrally and hybrid poplars outside; no Argentine site is implied.

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CULTIVATION, MAPS AND HISTORICAL BUILDINGS

D865 INTA | Aromáticas en la huerta orgánica, 2nd edition, 2008 Abdo and Riquelme. Argentine context and plant names. This edition does not adopt every pest-control or medicinal claim in this older manual.

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USDA United States Department of Agriculture · **NRCS** Natural Resources Conservation Service · **EXIF** Exchangeable image file format · **BY-SA** Creative Commons Attribution-ShareAlike · **INTA** Instituto Nacional de Tecnología Agropecuaria

D866 University of Minnesota Extension | Growing herbs in home gardens Species-dependent cultivation, division and care. Minnesota advice is a climatic comparison; its calendar and general watering schedule are not prescribed for Argentina.

D867 Royal Horticultural Society | Herbs: growing Seed, cutting and division methods; establishment and succession. UK months are not transferred directly to the Southern Hemisphere.

D868 Royal Horticultural Society | How to grow basil Warm growing conditions, protection from cold and gradual acclimatisation. No fixed Argentine sowing date or harvest yield is inferred.

Checked 5 November 2026. Worked examples are labelled. Regional guidance, price dates, historical identification and image rights retain their source scope.

Return to herb garden Return to plot

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and

UK: United Kingdom Identifies the country of the source, guidance or institution.

CULTIVATION, MAPS AND HISTORICAL BUILDINGS

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Return to herb garden Return to plot

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

D869 Royal Horticultural Society | How to grow mint Spreading habit and container management. A pot does not eliminate the need to inspect escaping growth or renew crowded plants.

D870 Royal Botanic Gardens, Kew | Salvia rosmarinus Accepted rosemary name; Rosmarinus officinalis retained as a synonym in accession records. Nomenclature does not authenticate an unknown specimen.

D871 INTA | Presentan un nuevo cultivar de romero con sello INTA 23 October 2025. Argentine rosemary breeding and propagation by cuttings in spring or autumn. Ornamental cultivar claims are not converted into kitchen approvals or medical claims.

D872 Buenos Aires Province | Manual de huertas, 2022 Provincial guidance on site selection, sowing, aromatic plants and cuttings. The chapter's 48-cell nursery, quantities and calculated results are original examples.

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D873 National Center for Home Food Preservation | Herbs University of Georgia guidance: tender herbs require prompt drying; methods and equipment matter. US household guidance is not a validated commercial Argentine shelf-life claim.

D874 INTA | Mi casa, mi huerta Ground and container cultivation, light and load considerations. No endorsement here of every reused-container material shown in the source.

D875 University of Maryland Extension | Growing vegetables in raised beds Bed width, access, soil and construction considerations. The four-bed plan is an original declared example, not a surveyed site or accessibility standard.

D876 University of Minnesota Extension | Raised bed gardens Soil, access and raised-bed moisture considerations. Soil contamination requires a site-specific assessment; adding clean fill alone is not assumed to resolve it.

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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INTA Instituto Nacional de Tecnología Agropecuaria · **US** United States

D877 INTA | Huertas: tools and irrigation references Official index includes Diseño e instalación de pequeños proyectos de riego por goteo en cultivos hortícolas. The 80-outlet arithmetic is original; select actual components from their manufacturer's pressure and filtration data.

D878 AndyScott | Museum of the Home, Herb Garden 4 October 2022, London. CC BY-SA 4.0: https://creativecommons.org/licenses/by-sa/4.0/. Full 3000 × 2250 frame preserved without retouching. The photograph does not identify the chapter's nursery plants.

D879 Easy Argentina | Landiner Huerta, 50 L, reference 1360339 Opened 5 November 2026: ARS 17,416.50 promotional price; ARS 20,490 regular price. Location, stock and freight unconfirmed. The opened page superseded the older search-snippet price.

D880 Banco Nación | Banknote exchange reference 5 November 2026, displayed update 15:01: USD banknote selling ARS 1,570. Material subtotals divided by this rate for comparison; not a transaction quote or forecast.

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D880 Banco Nación | Banknote exchange reference 5 November 2026, displayed update 15:01: USD banknote selling ARS 1,570. Material subtotals divided by this rate for comparison; not a transaction quote or forecast.

L: Litre One cubic decimetre of volume, or one thousand millilitres.

CULTIVATION, MAPS AND HISTORICAL BUILDINGS

D881 Université Laval | Mercator Arctic map, 1595, 11-c.170-1595-r

D882 Université Laval | Catalogue object 11-c.170-1595-r Holding catalogue linked by the image record. Historical object identity is distinct from the correctness of geographical claims within the map.

D884 Baldomer Gili i Roig | Sagrada Família, 1905 Museu d'Art Jaume Morera. Modern copy of a 1905 glass negative; full 1024 × 802 frame retained. Public-domain reproduction. Modern copy/upload date is distinct from capture date.

Checked 5 November 2026. Worked examples are labelled. Regional guidance, price dates, historical identification and image rights retain their source scope.

Return to herb garden Return to plot

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INTA Instituto Nacional de Tecnología Agropecuaria · **BY-SA** Creative Commons Attribution-ShareAlike · **×** multiplied by · **ARS** Argentine peso · **L** litre, a volume unit · **USD** United States dollar

Public-domain map from the Laval collection. A full-frame 1280 px repository derivative is used. This documented scan replaces the uncertain scan lineage of Photo 3 image the illustration.

TERMS ON THIS PAGE D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D885 Museu d'Art Jaume Morera | Sagrada Familia catalogue presentation Institutional contribution to Google Arts & Culture identifies Baldomer Gili i Roig and 1905. The foreground people are left unnamed.

D886 Sagrada Família | Official history of the basilica Foundation stone 19 March 1882; Gaudí from 1883; death in 1926; workshop destruction in 1936 and later reconstruction from surviving evidence. No present completion forecast is made.

D887 Flora de Filipinas | Atlas II, plate 407 1880-1883 plate from Blanco's Flora de Filipinas; Real Jardín Botánico digital source. Full historical plate retained, including old Ocimum names. Public-domain reproduction, not a modern specimen determination.

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D889 Carlos Verbelen | Tandil author photograph, TD2

D890 Ushuaia Tourism | Casa Beban Municipal account of the Swedish prefabricated house erected in Ushuaia in 1911-1913. Cover photo remains Andy and mel, 2011, CC BY-SA 3.0, as recorded in D674. Existing full image retained.

D891 Smithsonian | Morse-Vail key Collection EM.181411, image NMAH-JN2014-3911, Alfred Vail, 1844; CC0 image. Existing D394 attribution and pixels retained; the object link is retained from the verified source page, reference 1386.

Author-identified Tandil landscape recovered from the verified current edition. Full original image reused for the Book III opening. Capture date, parcel and property rights are not

D890 Ushuaia Tourism | Casa Beban Municipal account of the Swedish prefabricated house erected in Ushuaia in 1911-1913. Cover photo remains Andy and mel, 2011, CC BY-SA 3.0, as recorded in D674. Existing full image retained.

D892 Library of Congress | Allen family storage house Marion Post Wolcott, November 1940, near Barbourville, Kentucky. LC-USF34-056442-D. Public-domain FSA/OWI collection, no known restrictions. Full inherited image reused; containers do not prove food safety.

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EM: Smithsonian electrical collection identifier In the telegraph-key record, EM.181411 is the museum catalogue identifier for the object.

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NMAH: National Museum of American History The Smithsonian museum holding the object named in the catalogue entry.

CC0, Creative Commons Zero A public-domain dedication by which a rights holder waives rights to the extent legally possible. FSA/OWI, Farm Security Administration and Office of War Information The United States agencies behind the historical documentary photograph collection. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

LIVESTOCK, SOIL COVER AND PUBLIC CLOCKS

D893 SENASA: Registro Nacional Sanitario de Productores Agropecuarios Registration associates producer, activity and site; registration is free. It does not replace applicable establishment approvals. Current official entry point; check species and jurisdiction.

D894 SENASA: Documento de Tránsito Electrónico Official procedure for moving live animals and animal products within Argentina. RENSPA and the relevant movement documentation must be checked before transport.

D895 University of Maryland Extension: pasture stocking rate US guidance on feed demand, dry matter and available forage, updated 29 June 2021. The chapter's 20-animal, 90-day calculation uses declared assumptions, not a measured carrying capacity.

D896 University of California ANR: sheep on small acreage California guidance on feed, water and care. Consumption changes with conditions and production stage. No California acreage ratio is transferred to Argentina.

Return to livestock Return to clocks

TERMS ON THIS PAGE SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

RENSPA: Registro Nacional Sanitario de Productores Agropecuarios Argentina's register that identifies agricultural producers and their production sites for sanitary oversight.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

ANR: Agriculture and Natural Resources The University of California division offering the cited extension guidance.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D897 European Union: Council Directive 98/58/EC Comparative EU animal-welfare framework covering staffing, inspection, records, feed and water. Argentine legal requirements remain separate; no medication schedule is inferred.

D898 Carlos Antonio Writte: sheep in Patagonia File dated 5 September 2013, author writtecarlosantonio, CC BY 2.0: creativecommons.org/licenses/by/2.0/. Full source frame. Breed, precise holding and carrying capacity not established.

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D899 INTA: Pergamino cover-crop experimental platform Long-term local comparison of cover species and mixtures in rotations, established in 2005. Evidence for regional experimentation, not a universal sowing prescription.

D900 INTA: cover crops against wind erosion 6 May 2026. Sandy soils and post-peanut systems in southern Córdoba. Timing and water conservation belong to that context; avoid treating a trial threshold as a guarantee for all fields.

D898 Carlos Antonio Writte: sheep in Patagonia File dated 5 September 2013, author writtecarlosantonio, CC BY 2.0: creativecommons.org/licenses/by/2.0/. Full source frame. Breed, precise holding and carrying capacity not established.

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https://www.argentina.gob.ar/node/447951

https://www.argentina.gob.ar/noticias/cultivos-de-cobertura-para-mitigar-la-erosion-del-viento

TERMS ON THIS PAGE EC: European Community The suffix identifies the European Community legal instrument in the directive number.

EU: European Union The political and economic union responsible for the European reference or rule cited.

CC BY: Creative Commons Attribution A reuse licence requiring credit to the creator and compliance with its terms.

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **BY** Attribution condition in a Creative Commons licence · **EC** European Community, in this legal citation

D901 INTA: cover crops and weed control in soybean 15 October 2026. Marcos Juárez work on biomass, weeds and water within rotations. Results require their site, weather and management context.

D902 FAUBA: options for terminating service crops University guidance on termination methods and crop maturity, including reproductive-stage requirements for effective roller-crimping. It must be reconciled with the local water budget.

D903 USDA NRCS Indiana: Cover Crop Termination March 2024 technical guidance comparing termination methods and residue effects. Used for method distinctions; US calendar dates and chemical prescriptions are not imported.

D904 Kansas State: soil-health field assessment University laboratory manual: point-count estimation of surface cover and repeated sampling. The chapter's counts and dry-mass values are invented teaching observations.

FAUBA: Facultad de Agronomía de la Universidad de Buenos Aires The University of Buenos Aires faculty responsible for the cited agronomic information.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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D905 Royal Horticultural Society: mulches and mulching UK garden guidance on materials, depth, weed preparation and keeping mulch clear of stems. The 50 mm Argentine example is a selected quantity calculation, not a universal specification.

D906 Mr.1032: cover crop being crimped United States rye and hairy vetch, file dated 26 April 2017. CC BY-SA 4.0: creativecommons.org/licenses/by-sa/4.0/. Full frame; the photo does not establish successful termination.

D907 Prague City Tourism: Old Town Hall astronomical clock Official monument history and explanation of distinct time displays. Medieval core dates to 1410; later calendar and sculptural work must not be assigned that same date.

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **FAUBA** Facultad de Agronomía de la Universidad de Buenos Aires · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service · **US** United States · **UK** United Kingdom · **mm** millimetre, 0.001 metre · **BY-SA** Creative Commons Attribution-ShareAlike

D908 Czech Academy of Sciences astronomy guide: Prague clock Astronomical Institute-hosted guide credits Mikuláš of Kadaň and Jan Šindel; explains the astronomical display and later calendar. Historical guide, not a current operating-status report.

D906 Mr.1032: cover crop being crimped United States rye and hairy vetch, file dated 26 April 2017. CC BY-SA 4.0: creativecommons.org/licenses/by-sa/4.0/. Full frame; the photo does not establish successful termination.

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TERMS ON THIS PAGE UK: United Kingdom Identifies the country of the source, guidance or institution.

mm: Millimetre A unit of length equal to one thousandth of a metre.

CC BY-SA: Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

LIVESTOCK, SOIL COVER AND PUBLIC CLOCKS

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Checked 5 November 2026. Worked examples are labelled. Regional guidance, price dates, historical identification and image rights retain their source scope.

Return to livestock Return to clocks

TERMS ON THIS PAGE UK: United Kingdom Identifies the country of the source, guidance or institution.

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BY-SA Creative Commons Attribution-ShareAlike · **UK** United Kingdom · **mm** millimetre, 0.001 metre

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https://prague.eu/en/objevujte/old-town-hall-with-astronomical-clock-staromestska-radnice-s-orlojem

https://astro.cas.cz/bh2010/files/praha.pdf

D909 City of Rouen: Gros-Horloge Official description: Renaissance double dial, one hour hand, weekday figure appearing at noon, lunar globe and wool-trade symbolism. Architectural and mechanism dates are distinct.

D910 Rouen Normandie Tourisme: Le Gros-Horloge Dates the belfry mechanism to 1389 and records electrical operation from the 1920s with historic movement retained. Supports the maintenance-history lesson, not a modern accuracy claim.

D911 Jacek Halicki: Prague astronomical dial, 2015 23 August 2015; CC BY-SA 4.0: creativecommons.org/licenses/by-sa/4.0/. Full current repository image, including the photographer's recorded 2015 edits. No new retouching.

D912 Ytierny: Gros-Horloge detail, Rouen 13 September 2013; CC BY-SA 3.0: creativecommons.org/licenses/by-sa/3.0/. Full source frame, no new retouching. The corresponding intake image has unverified reproduction rights.

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https://commons.wikimedia.org/wiki/File:2015_Zegar_astronomiczny_w_Pradze_03.jpg

https://commons.wikimedia.org/wiki/File:Gros-Horloge,_d%C3%A9tail.jpg

D913 KHK: calculation of gear dimensions Manufacturer technical reference: standard spur-gear reference diameter and theoretical centre distance. The chapter's two-stage model is original; component drawings govern actual assembly.

D914 NASA Science: Moon phases Distinguishes the approximately 29.5-day phase cycle from the approximately 27.3-day orbit relative to the stars. The clock lesson does not conflate these with calendar months.

D915 NIST: timekeeping and clocks FAQs Explains counting periodic events and frequency division. The chapter's offset log and hand-turned gear train are original teaching examples, not precision-time certification.

D916 Original worked examples: livestock, soil cover and gears Author-developed arithmetic: 2,000 kg hay shortfall purchase; 5 m^3 mulch; 70.75% sampled cover; 12:1 gear reduction. Declared assumptions are not surveyed prices, tested rations or fabrication drawings. Return link opens LS2.

TERMS ON THIS PAGE KHK: Kohara Gear Industry The Japanese gear manufacturer credited with the reference on gear geometry.

NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references. FAQs, Frequently asked questions A source section organised as questions and answers. kg, Kilogram A unit of mass equal to one thousand grams. m^3, Cubic metre The volume of a cube with edges one metre long. It holds one thousand litres.

ORCHARD RECORDS AND ACCOUNTABLE PANTRIES

D917 INTA Alto Valle: indices of harvest maturity 30 March 2026. Maturity indices depend on species, cultivar and destination. Colour, firmness, soluble solids, acidity and starch degradation are interpreted together; this is not a universal harvest threshold.

D918 SENASA: Granny Smith harvest decision, Alto Valle 3 March 2021 historical example: the tentative 6 March start was advanced after local sampling and INTA analysis. The 2021 date is not permission or advice for a later season.

D919 USDA FAS: Argentina Fresh Deciduous Fruit Annual Argentina sector report for 2025/26. Broad apple cycle and principal cultivars provide context only. No national production forecast is used as an estate yield assumption.

ON THIS PAGE

BY-SA Creative Commons Attribution-ShareAlike · **NASA** National Aeronautics and Space Administration · **NIST** National Institute of Standards and Technology · **kg** kilogram, a mass unit · **m^3** cubic metre, a volume unit · **%** percent, parts per hundred · **INTA** Instituto Nacional de Tecnología Agropecuaria · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **USDA** United States Department of Agriculture · **FAS** Foreign Agricultural Service

D920 Michigan State University: checking apple maturity Phil Schwallier, 28 August 2012. Describes an 11 mm firmness probe, 8 mm insertion and the named Cornell 1-8 starch chart. US cultivar and storage thresholds are not transferred

D918 SENASA: Granny Smith harvest decision, Alto Valle 3 March 2021 historical example: the tentative 6 March start was advanced after local sampling and INTA analysis. The 2021 date is not permission or advice for a later season.

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Return to orchard records Return to pantry

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

FAS: Foreign Agricultural Service The United States Department of Agriculture service that publishes international agricultural information.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D921 University of Minnesota: growing apples Extension guidance distinguishes scion, rootstock, site and pollination requirements. Minnesota varieties and calendar dates are not a planting prescription for Argentina.

D922 Iowa State University: apple cultivation and propagation Seed-grown apples do not reproduce the exact parent cultivar; grafting preserves the selected scion. Rootstock and site affect tree size. Used to explain plant identity records.

D923 USDA National Agricultural Library: Pomological Watercolors Collection MS0184. USDA began hiring pomological artists in 1887. Specimen records commonly include grower and locality; colour lithography communicated crop characteristics. This institutional history supports the illustrated accession lesson.

D924 Royal Charles Steadman: Granny Smith, POM00002046 6 March 1925. USDA specimen from Rosslyn, Arlington County, Virginia. USDA/NAL work, public domain in the United States. Full 2649 × 4000 pixel source; not evidence that colour alone identifies a cultivar.

TERMS ON THIS PAGE USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

ON THIS PAGE

US United States · **mm** millimetre, 0.001 metre · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **INTA** Instituto Nacional de Tecnología Agropecuaria · **USDA** United States Department of Agriculture · **FAS** Foreign Agricultural Service · **×** multiplied by

NAL: National Agricultural Library The United States agricultural research library.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

ORCHARD RECORDS AND ACCOUNTABLE PANTRIES

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D925 Gervacio Rosales: Espaldera en otoño 26 April 2014. Catalogue tag: General Roca, Argentina. CC BY 3.0: creativecommons.org/licenses/by/3.0/. Full frame of repository 3840-pixel derivative; no crop or new retouching. Cultivar and management performance unknown.

D926 ANMAT: Manual de manipulación segura de alimentos 2025 manual, storage section, printed page 58: dry, clean, ventilated storage, shelves or pallets and clearance from floors/walls/ceiling; cleaning chemicals separated. Apply the actual product label and local establishment requirements.

D927 Argentina: storing and conserving foods Official practical guidance: closed, clean, labelled containers; dry foods on shelves 15 cm above the floor; earliest expiry toward the front; exclude pests and toxic substances.

ON THIS PAGE

USDA United States Department of Agriculture · **×** multiplied by · **BY** Attribution condition in a Creative Commons licence · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **cm** centimetre, 0.01 metre

D928 NCHFP: storing home-canned foods University of Georgia/USDA guidance: label and date jars; clean, cool, dark, dry storage; 50-70°F (10-21.1°C) for best quality. A sound seal alone does not validate the original process. Never taste suspect food.

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ANMAT, Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology. cm, Centimetre A unit of length equal to one hundredth of a metre. NCHFP: National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited

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D929 European Commission: general food-law requirements EU comparison: traceability includes immediate supplier and immediate business recipient, with an exception for retailers supplying final consumers. Argentine authorisation and labelling duties remain separate.

D930 Irving Rusinow: pantry, Haskell County, Kansas April 1941; NARA 522158, local identifier 83-G-41969, USDA Bureau of Agricultural Economics. Public-domain US federal photograph. Full frame. Visible storage practices are historical evidence, not a modern food-safety endorsement.

ON THIS PAGE

NCHFP National Center for Home Food Preservation · **°C** degree Celsius, a temperature unit · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **cm** centimetre, 0.01 metre · **BY** Attribution condition in a Creative Commons licence · **EU** European Union · **NARA** National Archives and Records Administration · **USDA** United States Department of Agriculture · **US** United States

D931 USDA Office of Information: Storing Home Canned Foods 1945 Homemakers' Chat, preserved by NAL. Historical advocacy of inventory lists and orderly shelves; its old shelf and canning advice does not replace current tested processes or load-rated component specifications.

D932 Todo Estantes: TE-ESTANTERIA-2016 Observed 5 November 2026: ARS 163,900 including IVA; 420 × 900 × 2000 mm, five shelves. The advertised 80 kg wording does not establish the applicable per-shelf or whole-rack load, anchorage or distribution conditions; obtain written confirmation.

TERMS ON THIS PAGE EU: European Union The political and economic union responsible for the European reference or rule cited.

NARA: National Archives and Records Administration The United States agency preserving the archival record or photograph.

USDA, United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here. US, United States of America Identifies the country or jurisdiction of the source, price or institution.

ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. IVA, Impuesto al valor agregado Argentine value-added tax. A listed price may include it or show it separately.

mm, Millimetre A unit of length equal to one thousandth of a metre. kg, Kilogram A unit of mass equal to one thousand grams. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D933 STEC: Systel Croma scale listing Observed 5 November 2026: ARS 459,547.96, taxes included, freight extra; transfer price separately displayed as ARS 363,043. Title says 31 kg but technical description says 30 kg. Confirm model/nameplate; use the lower figure for planning and do not equate resolution with accuracy.

D934 Banco de la Nación Argentina: currency quotation 5 November 2026, 17:00: US dollar banknote selling quotation ARS 1,570 per USD. Used solely as the stated comparison divisor. It is not a landed cost, tax rate or promised future exchange rate.

D935 ANMAT: allergen labelling Official explanation of CONTIENE and PUEDE CONTENER. Preserve supplier ingredient and allergen information when managing internal containers; recheck every purchase because formulations can change. Internal stock labels do not replace legally required product labelling.

D936 Original orchard and pantry worked examples Charlie Verbelen book project, Batch 92AI. Invented teaching observations: 40-tree register, 240 kg lot, five-day 560 kg arrival schedule, 3.0 × 2.4 m room, stock reconciliation and reorder model. Costs use dated D932-D934 observations; examples are not measured estate performance or engineering certification.

D934 Banco de la Nación Argentina: currency quotation 5 November 2026, 17:00: US dollar banknote selling quotation ARS 1,570 per USD. Used solely as the stated comparison divisor. It is not a landed cost, tax rate or promised future exchange rate.

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ON THIS PAGE

USDA United States Department of Agriculture · **NAL** National Agricultural Library · **ARS** Argentine peso · **IVA** Impuesto al valor agregado Argentine value-added tax · **mm** millimetre, 0.001 metre · **kg** kilogram, a mass unit · **×** multiplied by · **US** United States · **USD** United States dollar · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **m** metre, a length unit

TERMS ON THIS PAGE STEC: STEC retailer The trading name of the seller whose dated equipment price is cited.

kg: Kilogram A unit of mass equal to one thousand grams.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

ANMAT, Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology. m, Metre The base unit of length in the International System of Units. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

PRESERVATION, DRYING AND STORAGE

D937 NCHFP: Ensuring Safe Canned Foods USDA-based guidance: food acidity, tested processing and elevation. A pH reading alone does not validate a thermal process.

D938 SENASA: Botulism risk in preserved vegetables, 3 February 2026 Argentina: invisible toxin, authorised establishments, batch and registration information. These home lessons do not establish commercial compliance.

D939 NCHFP: Sauerkraut USDA recipe: 5 lb cabbage portions, 3 US tablespoons pickling salt, supplemental brine and fermentation conditions. Refrigerated endpoint used here; canning instructions are separate.

D940 Penn State Extension: Fermentation, Sauerkraut and Pickles Container scale, salt proportions, observation and spoilage indicators. Do not replace the specified salt measure with an assumed mass.

Checked 5 November 2026. Worked examples are labelled. Regional guidance, price dates, historical identification and image rights retain their source scope.

Return to preservation Return to storage

TERMS ON THIS PAGE NCHFP: National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

pH: A measure of acidity or alkalinity The scale is based on hydrogen-ion activity. A change of one pH unit corresponds to a tenfold change in that activity.

D941 NCHFP: Suitable Containers, Covers and Weights Food-compatible containers; cabbage/cucumbers held 1-2 in beneath brine. This distance is not a universal rule for every ferment.

D942 SDSU Extension: Dehydrating Apples, 23 October 2023 Tree-picked sound apples, uniform 1/4 in pieces and electric drying at 140 F. Estimated 6-12 h is not a guaranteed endpoint.

D943 UConn Extension: Dehydrate Some Local Apples, 8 December 2016 Equal volumes bottled lemon juice and water; soak 10 minutes and drain. Dip volume examples are original calculations.

D944 University of California: Apples, drying and dryness checks Air circulation, loading, variable drying times and cooled-piece tests. Appliance-specific clearance instructions still apply.

SDSU: South Dakota State University The university extension programme credited with the cited preservation guidance.

ON THIS PAGE

NCHFP National Center for Home Food Preservation · **pH** A logarithmic measure of hydrogen-ion activity · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **USDA** United States Department of Agriculture · **US** United States · **SDSU** South Dakota State University · **h** hour, 60 minutes

UConn, University of Connecticut The United States university credited with the source. h, Hour A unit of time equal to sixty minutes. D + number: Book evidence record

UConn, University of Connecticut The United States university credited with the source. h, Hour A unit of time equal to sixty minutes. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D945 NCHFP: Packaging and Storing Dried Foods Cool fruit; condition sealed, loosely filled containers 7-10 days and shake daily. Moisture-affected unspoiled fruit may be redried; discard mouldy food.

D946 Penn State Extension: Dried Apples Overheating can harden the exterior while retaining internal moisture. The book consistently uses the SDSU 60 C electric method instead of mixing temperature schedules.

D947 Montana State University: Drying Fruits Outdoor fruit drying needs suitable weather and subsequent insect treatment. Source describes both freezer and oven options; freezer option is summarised here.

D948 INTA La Rioja: solar drying training, 20 March 2025 Documented training in Chamical, General Belgrano and General Ocampo. Geographic precedent, not proof that any site achieves a specified drying temperature.

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INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D949 INTA La Rioja: Construction of a fruit and vegetable drying module, August 2025 Ricardo Lorenzo Lujan and Gabriela Fernanda Vega. Tray dimensions on page 4. The original cutting schedule here specifies its own corner joint; neither a charcoal tray nor sunlight is treated as sterilisation.

D950 INTA Mendoza: pilot plant for dehydrating fruit and vegetables Lists moisture, water activity, microbial and drying-profile measurements among its capabilities. Availability and a product-specific testing plan require direct confirmation.

D951 FDA: Water Activity in Foods, technical guide 39 Physical distinction between total moisture and equilibrium water activity. Used for the scientific definition, not as a current Argentine legal classification.

D952 UC Davis: Golden Delicious apple storage Cultivar-specific optimum temperature and humidity. Facts paraphrased; no UC Davis photographs or chart reproduced.

UC: University of California The university system whose researchers or extension offices are cited.

D950 INTA Mendoza: pilot plant for dehydrating fruit and vegetables Lists moisture, water activity, microbial and drying-profile measurements among its capabilities. Availability and a product-specific testing plan require direct confirmation.

D951 FDA: Water Activity in Foods, technical guide 39 Physical distinction between total moisture and equilibrium water activity. Used for the scientific definition, not as a current Argentine legal classification.

ON THIS PAGE

NCHFP National Center for Home Food Preservation · **SDSU** South Dakota State University · **INTA** Instituto Nacional de Tecnología Agropecuaria · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **UC** University of California

D953 UC Davis: Carrot storage Temperature, high relative humidity, free-water decay and ethylene sensitivity. Whole topped roots differ from cut products.

D954 UC Davis: Dry onion storage Cured bulbs need lower humidity than carrots; cultivar affects keeping quality. Facts paraphrased, not a copied chart.

D955 UC Davis: Pumpkin and Winter Squash 12.5-15 C and moderate humidity are general targets; cultivar exceptions and chilling sensitivity remain explicit.

D956 USDA FSIS: Thermometers when smoking meat Separate chamber-air and food thermometers; cooking chamber 225-300 F. Search-indexed official article checked 5 November 2026.

TERMS ON THIS PAGE UC: University of California The university system whose researchers or extension offices are cited.

USDA, United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here. FSIS, Food Safety and Inspection Service The United States Department of Agriculture service responsible for the food-safety guidance cited here.

D957 USDA FSIS: Refrigerating meat after smoking Prompt refrigeration in shallow portions; use within four days or freeze. Official article last updated 19 November 2024.

D958 ByEG, San Miguel: Catania VDP-10AI listing Opened 5 November 2026: ARS 1,048,759.92; transfer/cash ARS 901,933.53, freight separate, page marked Sin stock. Ten 39.6 cm square trays, 1000 W, 220 V/50 Hz. Supplier claims require commissioning.

D959 Banco de la Nacion Argentina: banknote quotations 5 November 2026, 17:00: USD banknote selling ARS 1,570. Used only as a dated conversion divisor; no exchange spread or fee allowance.

D960 W. W. Cozzens fruit drying, San Jose, 1888 Historical engraving in Henry S. Foote, Pen Pictures from the Garden of the World (1888), linked scan p. n763. Artist unknown; US public domain. Full frame retained.

FSIS: Food Safety and Inspection Service The United States Department of Agriculture service responsible for the food-safety guidance cited here.

ByEG: ByEG retailer The seller’s trading name on the cited price listing.

ARS, Argentine peso The currency in which the local price, quote or exchange rate is recorded. cm, Centimetre A unit of length equal to one hundredth of a metre. Hz, Hertz Frequency in cycles per second. USD, United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. W, Watt The unit of power. One watt equals one joule of energy transferred per second. D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

PRESERVATION, DRYING AND STORAGE

D957 USDA FSIS: Refrigerating meat after smoking Prompt refrigeration in shallow portions; use within four days or freeze. Official article last updated 19 November 2024.

ON THIS PAGE

UC University of California · **USDA** United States Department of Agriculture · **FSIS** Food Safety and Inspection Service · **ARS** Argentine peso · **cm** centimetre, 0.01 metre · **W** watt, power · **V** volt, electrical potential difference · **Hz** hertz, cycles per second · **USD** United States dollar · **US** United States

D958 ByEG, San Miguel: Catania VDP-10AI listing Opened 5 November 2026: ARS 1,048,759.92; transfer/cash ARS 901,933.53, freight separate, page marked Sin stock. Ten 39.6 cm square trays, 1000 W, 220 V/50 Hz. Supplier claims require commissioning.

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Checked 5 November 2026. Worked examples are labelled. Regional guidance, price dates, historical identification and image rights retain their source scope.

Return to preservation Return to storage

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D961 Vassilik: Food dehydrator photograph Mango and papaya slices in a stackable electric dryer, uploaded 4 June 2009. CC BY-SA 3.0: https://creativecommons.org/licenses/by-sa/3.0/ . Full frame, no retouching. Not the quoted Catania model.

D962 NARA 285778: Root cellar with ventilation shaft Circa 1937; Bureau of Indian Affairs, Sisseton Agency records. Photographer not identified. US federal public-domain photograph, full frame retained; no modern structural rating inferred.

D963 FDA: Safe Food Handling Clean and separate, thermometer-based cooking and prompt chilling. Includes 1-hour limit above 90 F, otherwise 2 hours, and safe minimum internal temperatures.

D964 Original worked designs, quantities and operating records Declared examples: 10 kg apple lot, 2 kg/m2 trial loading, tray cutting list, 10 h drying scenario, 200 ARS/kWh sensitivity case and storage monitoring. None are measured yields, wages, tariffs, shelf lives or validated construction performance.

ON THIS PAGE

ARS Argentine peso · **cm** centimetre, 0.01 metre · **W** watt, power · **V** volt, electrical potential difference · **Hz** hertz, cycles per second · **USD** United States dollar · **US** United States · **BY-SA** Creative Commons Attribution-ShareAlike · **NARA** National Archives and Records Administration · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **kg** kilogram, a mass unit · **h** hour, 60 minutes · **kWh** kilowatt-hour, energy

D962 NARA 285778: Root cellar with ventilation shaft Circa 1937; Bureau of Indian Affairs, Sisseton Agency records. Photographer not identified. US federal public-domain photograph, full frame retained; no modern structural rating inferred.

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NARA: National Archives and Records Administration The United States agency preserving the archival record or photograph.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

FDA, Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here. kg, Kilogram A unit of mass equal to one thousand grams.

ARS: Argentine peso The currency in which the local price, quote or exchange rate is recorded.

kWh: Kilowatt-hour A unit of energy. One kilowatt supplied for one hour equals one kilowatt-hour, or 1,000 watt-hours.

h: Hour A unit of time equal to sixty minutes.

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Return to preservation Return to storage

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IMAGE CONTEXT AND CULTIVATION SOURCES

D965 Iowa State University Extension: Crop rotation in the vegetable garden Rotation is organised by botanical family. This guidance supports a multi-year return interval and explains why weeds, cover crops and movement of soil matter. Local disease histories can require a longer interval than a simple four-year demonstration.

D966 INTA: Mi casa, mi huerta Argentine household-garden guidance. The rotation discussion distinguishes changing crops over time from associating plants together. Use local INTA advice for the actual site, soil and planting season; the eight-bed design in this book is an original example.

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D967 Buenos Aires Ciudad: ten winter-garden recommendations The city guidance recommends separating repeats of the same botanical family by at least three years. Its seasonal context is Buenos Aires. It is not a planting calendar for all Argentine provinces or a disease-specific guarantee.

D968 New Mexico State University: Nitrogen fixation by legumes, Guide A-129 Robert Flynn and John Idowu explain the plant-bacterium partnership and the difference between a harvested grain legume and a green-manure crop. Removing the harvested product can leave little nitrogen for the next crop; a legume phase is not an automatic fertiliser allowance.

Checked 6 November 2026. Received image credits remain visible. A source identifying the subject does not establish reproduction rights.

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

D966 INTA: Mi casa, mi huerta Argentine household-garden guidance. The rotation discussion distinguishes changing crops over time from associating plants together. Use local INTA advice for the actual site, soil and planting season; the eight-bed design in this book is an original example.

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https://buenosaires.gob.ar/gcaba_historico/noticias/diez-consejos-para-armar-tu-huerta-urbana-en-invierno-que-plantar-y-como-hacerlo

https://pubs.nmsu.edu/_a/A129/

D969 Original eight-bed rotation, space and labour calculations Editorial worked example, 6 November 2026: eight 1.2 m by 10 m beds; four equal pairs; 96 m^2 cropped; 189.6 m^2 including stated paths. Budget

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **m** metre, a length unit · **m^2** square metre, an area unit

unit prices are explicitly assumed, not market quotations. The matrix, demand test and record form are original planning tools.

D970 Museo Nacional del Prado: Saturno, Francisco de Goya The museum dates this Black Painting to 1820-1823 and records its transfer from wall to canvas. This identifies the work represented in the received collage; the collage itself has a separate, unresolved reproduction history.

D971 9/11 Memorial & Museum: Spencer Finch's memorial artwork The institution explains the 2,983 blue watercolour squares and the relation to the people killed in 2001 and 1993. The Virgil passage and Tom Joyce's steel lettering belong to the memorial context. A received photograph is not evidence of an occult design programme.

D972 9/11 Memorial & Museum: About the memorial The memorial identifies Michael Arad and Peter Walker's Reflecting Absence design and the pools at the towers' footprints. The design was selected in 2004; the memorial opened on 11 September 2011.

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m: Metre The base unit of length in the International System of Units.

IMAGE CONTEXT AND CULTIVATION SOURCES

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D973 Vatican Museums: Sistine Chapel ceiling Institutional account of Michelangelo's ceiling, completed in 1512. The Creation of Adam is part of its Genesis sequence. Modern geometric or anatomical overlays are interpretations added to a reproduction, not statements established by the museum record.

D974 National Park Service: Washington Monument construction The construction chronology records the 1848 cornerstone, the long interruption beginning in 1854, strengthening of the foundation in 1878-1880 and the capstone in December 1884. Dates explain the material discontinuity more directly than a symbolic reading of the stonework.

D975 US National Archives: Original design of the Great Seal Congress approved the Great Seal on 20 June 1782. Read its eagle, shield, olive branch and other elements in the documented design history. Resemblance to another emblem is not sufficient evidence of common authorship or a secret institution.

D976 NCCIH: Reflexology The US research agency distinguishes reflexology's proposed organ correspondences from demonstrated health effects. Received tongue, tooth, hand and foot charts must not be used to diagnose internal disease or replace a clinical assessment.

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D977 Utah Poison Control Center: Dangers of foraging Positive identification is essential; small amounts of some plants can be dangerous and identification applications are not sufficient assurance. A touch, taste or waiting sequence cannot establish that an unknown plant is edible.

D978 NIH Office of Dietary Supplements: Iron, professional fact sheet Describes iron's physiological role and the distinction between haem and non-haem dietary iron. Food charts and body-outline graphics do not establish a diagnosis, an individual requirement or a supplement dose.

D979 AySA: Calidad del agua AySA describes quality monitoring in its service system. This is an Argentine reference for evaluating water claims, not a guarantee covering private wells, stored water or every household's internal plumbing.

D980 NASA Goddard: Origins of the elements The educational periodic-table visual associates elements with astrophysical production processes using Jennifer Johnson's work. The colours represent explanatory categories; a decorative element symbol does not quantify the processes in a particular object.

ON THIS PAGE

US United States · **NCCIH** National Center for Complementary and Integrative Health · **NIH** National Institutes of Health · **NASA** National Aeronautics and Space Administration

TERMS ON THIS PAGE NIH: National Institutes of Health The United States biomedical research agency and its associated institutes.

AySA: Agua y Saneamientos Argentinos The water and sanitation provider named in the Buenos Aires context.

NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

D978 NIH Office of Dietary Supplements: Iron, professional fact sheet Describes iron's physiological role and the distinction between haem and non-haem dietary iron. Food charts and body-outline graphics do not establish a diagnosis, an individual requirement or a supplement dose.

D979 AySA: Calidad del agua AySA describes quality monitoring in its service system. This is an Argentine reference for evaluating water claims, not a guarantee covering private wells, stored water or every household's internal plumbing.

D981 Nielsen and colleagues, 2013: evaluation of left-brain versus right-brain hypotheses Original PLOS ONE study of functional connectivity. Local lateralisation does not support sorting whole people into globally left-brained and right-brained personality types. This finding concerns the tested hypothesis, not the claim that both hemispheres do identical work.

D982 NASA Science: Saturn facts Saturn is a gas giant with a ring system, named after a Roman agricultural deity. Astronomy describes the physical planet; a modern collage connecting Saturn to eyes, cubes or brands

D982 NASA Science: Saturn facts Saturn is a gas giant with a ring system, named after a Roman agricultural deity. Astronomy describes the physical planet; a modern collage connecting Saturn to eyes, cubes or brands requires separate historical evidence for each cultural claim.

D983 NASA Science: Ganymede and Titan NASA identifies Ganymede as the largest moon. Titan is the second largest and has a substantial atmosphere; see science.nasa.gov/saturn/moons/titan/facts/. Comparison graphics must distinguish physical diameter from the artistic size used on a page.

D984 Library of Congress: William Blake, Europe, a prophecy Catalogue record for Blake's 1794 work and its illustrated tradition. The Ancient of Days is an artistic image. Its compass and figure support an art-historical reading, not a measurement of the physical universe.

TERMS ON THIS PAGE PLOS: Public Library of Science The scientific publisher identified by the journal title.

NASA, National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D983 NASA Science: Ganymede and Titan NASA identifies Ganymede as the largest moon. Titan is the second largest and has a substantial atmosphere; see science.nasa.gov/saturn/moons/titan/facts/. Comparison graphics must distinguish physical diameter from the artistic size used on a page.

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NIH National Institutes of Health · **PLOS** Public Library of Science · **NASA** National Aeronautics and Space Administration

D985 Project Gutenberg: The Kybalion, Three Initiates Digital edition of the book first published in 1908 under the name Three Initiates. Its seven-principle scheme is a modern esoteric formulation. Preserve the distinction between this publication and ancient Hermetic texts.

D986 US patent 2,723,660: Artificial uterus, Emanuel M. Greenberg Primary patent reproduction: filed 22 July 1954, published 15 November 1955. The document establishes what was proposed and when. It does not establish clinical success, regulatory approval or suitability for fabrication and use on a person.

D987 Musée national Gustave Moreau: Jupiter and Semele The museum records the painting's development, with an initial sketch in 1889 and delivery in 1895. The full composition and the detail in the received archive belong to the same work, rather than two independently identified monuments.

D988 OpenStax: University Physics, Ohm's law V = IR relates voltage, current and resistance for an ohmic component under the relevant conditions. The textbook distinguishes the empirical relationship from a universal law for every material. Related circuit conventions are treated in section 10.3, Kirchhoff's Rules.

IR, Current multiplied by resistance In Ohm's law I denotes electric current and R denotes resistance. Their product gives voltage. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D989 Illinois Extension: Sow, grow, rotate Emily Swihart, 5 January 2024. Family classifications, cover-crop accounting and example rotation schedules support the botanical-family method. The eight-bed dimensions, allocation matrix and labour budget in this edition are original examples.

D990 USDA photograph: soybean root nodules Full 641 × 447 pixel photograph attributed to the US Department of Agriculture; archived by Wikimedia Commons in 2005. The file record identifies it as a US federal work in the public domain in the United States. Photographer and exposure date are not identified. The specimen illustrates nodules, not a measured nitrogen credit.

TERMS ON THIS PAGE USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

Historical sources and collection records

The works, surviving objects and institutional records behind the illustrated studies

D991 Bullitt County History Museum Eighth-grade examination, November 1912 The museum reproduces the donated sheet and explains who sat the county common exam. Its scan provides the question wording and sequence.

D992 Ciudad de Buenos Aires Law 1420, historical text, article 6 The published text lists arithmetic, the decimal metric system and geography in the minimum primary curriculum.

D993 Argentina · national legislation archive Law 1420, primary education, 1884 The historical register supplies the date and jurisdiction of the Argentine measure.

D994 Library of Congress · Geography and Map Division Abraham Ortelius, Tartariae sive Magni Chami Regni typus Record 83690086 distinguishes the 1570 map design from the 1603 atlas edition containing this collection impression.

Historical records Workshop mathematics Buildings and airfields

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US United States · **=** equals · **USDA** United States Department of Agriculture · **×** multiplied by

D992 Ciudad de Buenos Aires Law 1420, historical text, article 6 The published text lists arithmetic, the decimal metric system and geography in the minimum primary curriculum.

D993 Argentina · national legislation archive Law 1420, primary education, 1884 The historical register supplies the date and jurisdiction of the Argentine measure.

D995 Library of Congress · Worlds Revealed Tracking “Tartary” on Western Maps The map division compares the changing use and extent of Tartary across published maps.

D996 University of Washington Libraries · Special Collections Jodocus Hondius, Tartaria, order MAP131 Rare Map Collection G7400 1630 .H6. The record transcribes the cartouches and dates its own Amsterdam impression between 1630 and 1635.

D997 American Geographical Society Library · University of Wisconsin-Milwaukee Carte de Tartarie, digital item am004751 The catalogue dates the Amsterdam publication by Covens and Mortier to 1757 and credits Guillaume de l’Isle in the title. The institutional scan permits a visual comparison.

D998 David Rumsey Map Collection · Stanford Libraries Gerard Mercator, Septentrionalium terrarum descriptio, 1595 The record explains the four islands, central rock, reports of polar waters and different states of the plate.

D996 University of Washington Libraries · Special Collections Jodocus Hondius, Tartaria, order MAP131 Rare Map Collection G7400 1630 .H6. The record transcribes the cartouches and dates its own Amsterdam impression between 1630 and 1635.

D997 American Geographical Society Library · University of Wisconsin-Milwaukee Carte de Tartarie, digital item am004751 The catalogue dates the Amsterdam publication by Covens and Mortier to 1757 and credits Guillaume de l’Isle in the title. The institutional scan permits a visual comparison.

D999 Library of Congress · Geography and Map Division Searching for Saint Brendan’s Island Includes dated maps which place the legendary island in different parts of the Atlantic, including Ortelius in 1570 and a world map of 1602.

D1000 Instituto Geográfico Nacional · Argentina Cartografía de línea The national mapping authority describes topographic mapping and map scales for Argentina.

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D1001 NASA · History The National Aeronautics and Space Act of 1958 The history dates the signing of the act and the start of NASA operations.

D1002 NASA · biographies Wernher von Braun Biographical record of the German rocket developer, his dates and later leadership of the Marshall Space Flight Center.

TERMS ON THIS PAGE NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

D1001 NASA · History The National Aeronautics and Space Act of 1958 The history dates the signing of the act and the start of NASA operations.

D1003 Mittelbau-Dora Memorial Tunnel complex at the former Mittelwerk The memorial records the use of concentration camp prisoners for underground construction and arms production.

ON THIS PAGE

NASA National Aeronautics and Space Administration

D1004 Smithsonian Libraries and Archives Georg Simon Ohm, Die galvanische Kette Digitized primary work, published in Berlin in 1827. The historical publication and the modern classroom notation have different dates.

D1005 OpenStax · Rice University University Physics, volume 2, section 9.4 The authors distinguish an ohmic material's linear response from a general voltage-current characteristic.

D1006 Museum of Applied Arts · Budapest Toy, Rubik's cube, collection item 2382 The holding museum dates the first design to 1974 and describes Rubik's work in Hungary.

D1007 Smithsonian · National Museum of American History Puzzle, Rubik's Cube, object nmah_1030876 The surviving puzzle purchased around 1980 supplies a separate material witness to its commercial circulation.

D1008 Corpus dei disegni di architettura del Duomo di Milano Cesare Cesariano, cathedral illustration, catalogue 412 The holding catalogue reproduces the 1521 plate and transcribes the Latin heading and lettered construction.

D1009 Corpus dei disegni di architettura del Duomo di Milano Disegno del Duomo di Milano triangolato, catalogue 436 A later drawing and its commentary document the use of the Milan example in a dispute over the heights of vaults at San Petronio in Bologna.

D1010 Catedral de La Plata Historia de la Catedral The cathedral's account distinguishes the 1884 foundation stone, the first Mass in 1932 and the completion of the towers in 1999.

D1011 US National Park Service · Statue of Liberty National Monument Statue's face waiting to be installed NPS asset be75aa72-155d-451f-6795-c5910bea26c1 identifies the island and subject. Its supplied description gives neither a photographer nor an exposure day.

D1012 US National Park Service · Statue of Liberty Creating the Statue of Liberty Explains the roles of Bartholdi and Eiffel, the shaped copper skin, transatlantic shipment and assembly.

D1013 US National Park Service · Statue of Liberty Statue of Liberty facts Separates construction in France, shipment in 1885, American assembly and the 1886 dedication.

D1014 Argentina · Comisión Nacional de Monumentos Palacio de Aguas Corrientes Buenos Aires monument record dates the work to 1887-1894 and identifies the load-bearing metal structure, tanks and ceramic cladding.

NPS, National Park Service The United States agency responsible for the park, site or historical interpretation cited here. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1015 Fuerza Aérea Argentina Nuestra historia The official history dates the 1912 decree, identifies El Palomar and explains the Aero Club Argentino's contribution.

D1016 US Federal Aviation Administration Pilot's Handbook of Aeronautical Knowledge The handbook supplies the conventional relationships between controls, motion and aircraft axes.

D1017 US Federal Aviation Administration Aeronautical Information Manual, airport marking aids and signs Supports the distinction among runway designators, taxiway markings and holding positions in the illustrated US convention.

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

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US United States · **NPS** National Park Service, United States

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Sources and collection records

Seasonal management in Argentina, Monte's manuscript and the eclipse over Patagonia

D1018 Facultad de Agronomía, Universidad de Buenos Aires

Heladas en la Argentina: definitions and statistical measures

Defines meteorological frost at 0 °C and the separate 3 °C screen threshold used as an agricultural indicator.

D1019 Facultad de Agronomía, Universidad de Buenos Aires

Aeroparque Aero, Buenos Aires | historical frost series at 0 °C

1956-2012. Mean annual frost-day frequency 1. The table separately reports years without frost.

D1018 Facultad de Agronomía, Universidad de Buenos Aires

Defines meteorological frost at 0 °C and the separate 3 °C screen threshold used as an agricultural indicator.

D1019 Facultad de Agronomía, Universidad de Buenos Aires

Aeroparque Aero, Buenos Aires | historical frost series at 0 °C

D1020 Facultad de Agronomía, Universidad de Buenos Aires

Ezeiza Aero, Buenos Aires | historical frost series at 0 °C

1956-2012. Mean annual frost-day frequency 16. The latest last frost in the series was 15 November 2007.

D1021 Facultad de Agronomía, Universidad de Buenos Aires

Pergamino INTA, Buenos Aires | historical frost series at 0 °C

1950-2011. Mean last frost 13 September. The latest was 23 October 1955.

Seasonal management Monte's world map Eclipse over Patagonia

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

1956-2012. Mean annual frost-day frequency 16. The latest last frost in the series was 15 November 2007.

D1021 Facultad de Agronomía, Universidad de Buenos Aires

Pergamino INTA, Buenos Aires | historical frost series at 0 °C

D1021 Facultad de Agronomía, Universidad de Buenos Aires

Pergamino INTA, Buenos Aires | historical frost series at 0 °C

D1022 Facultad de Agronomía, Universidad de Buenos Aires

ON THIS PAGE

°C degree Celsius, a temperature unit · **INTA** Instituto Nacional de Tecnología Agropecuaria

Corrientes Aero, Corrientes | historical frost series at 0 °C

1962-2012. Mean annual frost-day frequency 1. The latest last frost recorded was 26 August 1984.

D1023 Facultad de Agronomía, Universidad de Buenos Aires

La Consulta INTA, Mendoza | historical frost series at 0 °C

1970-2011. Mean last frost 1 October and latest last frost 14 November 1987.

D1024 Facultad de Agronomía, Universidad de Buenos Aires

Bariloche Aero, Río Negro | historical frost series at 0 °C

1956-2012. Mean last frost 19 December. Mean annual frequency 117 frost days.

D1025 FCAG, Universidad Nacional de La Plata · Wikimedia Commons

Meteorological tower, rain gauge and instrument enclosure, c. 1950

Photographer unrecorded. University collection credit and approximate date follow the file description. The repository marks the photograph public domain.

FCAG: Facultad de Ciencias Astronómicas y Geofísicas The astronomy and geophysics faculty of the National University of La Plata.

1970-2011. Mean last frost 1 October and latest last frost 14 November 1987.

D1023 Facultad de Agronomía, Universidad de Buenos Aires

La Consulta INTA, Mendoza | historical frost series at 0 °C

D1024 Facultad de Agronomía, Universidad de Buenos Aires

1970-2011. Mean last frost 1 October and latest last frost 14 November 1987.

Bariloche Aero, Río Negro | historical frost series at 0 °C

1956-2012. Mean last frost 19 December. Mean annual frequency 117 frost days.

D1024 Facultad de Agronomía, Universidad de Buenos Aires

Bariloche Aero, Río Negro | historical frost series at 0 °C

D1025 FCAG, Universidad Nacional de La Plata · Wikimedia Commons

1956-2012. Mean last frost 19 December. Mean annual frequency 117 frost days.

Meteorological tower, rain gauge and instrument enclosure, c. 1950

D1026 Food and Agriculture Organization of the United Nations

Crop evapotranspiration, Irrigation and Drainage Paper 56, chapter 1

Explains the conversion from a water depth to a volume per area. Field area, refill target, efficiency and flow in the worked ledger are illustrative.

D1027 University of Minnesota Extension

Planting the vegetable garden

ON THIS PAGE

°C degree Celsius, a temperature unit · **INTA** Instituto Nacional de Tecnología Agropecuaria · **FCAG** Facultad de Ciencias Astronómicas y Geofísicas

US comparison for frost sensitivity, soil conditions and planting decisions. Minnesota dates belong to the region described.

D1028 Deutscher Wetterdienst · Climate Data Center

Phenological observations of crops from sowing to harvest

German observation records distinguish crop, development phase, station, year and occurrence date.

D1029 David Rumsey Map Collection · list 10130.087

Tavola 1-60, digital composite with four corner diagrams

Find list 10130.087. The record gives 4, 8, 12, 18 and 18 sheets in the five rings. Related records identify the four additional corner illustrations.

D1030 David Rumsey Map Collection · list 10130.042

Tavola XXXX, Libro Terzo · Argentina and Tierra del Fuego

Manuscript plate 40, catalogued at 40 × 51 cm. The list-number suffix identifies a digital record. Geographic scale varies.

D1031 Katherine Parker · Barry Lawrence Ruderman Antique Maps, 2017

A Mind at Work: Urbano Monte's 60-Sheet Manuscript World Map

PDF pp. 13-15 describe the manuscript and rings, pp. 23-25 the treatise and projection, p. 35 the surviving examples. Copyright and publication data are on PDF p. 3.

D1032 David Rumsey Map Collection · 26 November 2017

Monte's planisphere and its digital assembly

David Rumsey credits Brandon Rumsey with digitally assembling the sheets and discusses Monte's instructions for a pivoting display.

D1033 David Rumsey Map Collection · list 10130.073

Eclisse del sole, Libro Quarto

Book VII of Monte's treatise. The catalogue identifies the solar-eclipse image and its upper-right position in the modern assembled version.

TERMS ON THIS PAGE cm: Centimetre A unit of length equal to one hundredth of a metre.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Sources and collection records

Seasonal management in Argentina, Monte's manuscript and the eclipse over Patagonia

D1030 David Rumsey Map Collection · list 10130.042

Tavola XXXX, Libro Terzo · Argentina and Tierra del Fuego

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US United States · **cm** centimetre, 0.01 metre · **×** multiplied by · **PDF** Portable Document Format

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D1034 Instituto Geográfico Nacional, Argentina

Eclipse solar del 14 de diciembre de 2020 en la República Argentina

Town-by-town predictions include Piedra del Águila, Junín de los Andes, Bariloche and Las Grutas. Local maximum and duration of totality are distinct columns of information.

D1035 NASA · Goddard Space Flight Center

Total solar eclipse, 14 December 2020 · geometry and path

The fact sheet depicts the Sun, Moon, umbra and penumbra. The lesson uses an original two-dimensional ray construction.

D1036 NASA Eclipse Web Site · Fred Espenak

Path of the total solar eclipse of 14 December 2020

The 16:20 UT row gives the northern and southern limits, central line, a 90 km path width and 2 min 9.3 s of central-line totality.

D1037 David Rumsey Map Collection

ON THIS PAGE

PDF Portable Document Format · **cm** centimetre, 0.01 metre · **×** multiplied by · **NASA** National Aeronautics and Space Administration · **UT** Universal Time · **km** kilometre, 1,000 metres · **min** minute, 60 seconds · **s** second, a time unit

Copyright and Permissions

Dedicated permissions page describes credited publication use and separate treatment of facsimiles offered for sale.

TERMS ON THIS PAGE NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

UT: Universal Time A time reference used in astronomical records so observers can compare an event across locations.

km: Kilometre A length of one thousand metres.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Sources and collection records

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D1035 NASA · Goddard Space Flight Center

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The fact sheet depicts the Sun, Moon, umbra and penumbra. The lesson uses an original two-dimensional ray construction.

D1038 David Rumsey Map Collection

Collection History · copyright and use

The general collection page directs commercial users to seek permission. Both collection notices accompany the three digital image records.

D1039 Instituto Geográfico Nacional, Argentina

Mapas escolares de la República Argentina

Modern Argentine reference maps for comparison with manuscript coastlines, names and orientation. Use the legend, edition and scale of the selected map.

TERMS ON THIS PAGE D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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Seed conservation, market roots and small wheat trials in Argentina

D1040 Verónica Mautone and Mónica Rubió · Ediciones INTA, 2018

Producción artesanal de semillas para la huerta

Printed pp. 13, 17, 27 and 29-30. The general isolation discussion and tomato-specific table give different distances. ISBN 978-987-521-916-8.

D1041 Organic Seed Alliance · United States

A Seed Saving Guide for Gardeners and Farmers

The crop-specific chart separates common bean, modern tomato and heirloom or potato-leaf tomato. Isolation distances depend on the use and population.

D1042 Iowa State University Seed Laboratory

Standard Germination Test

The laboratory evaluates normal seedlings under controlled conditions. It also reports abnormal seedlings and other categories appropriate to the species.

D1043 Instituto Nacional de Semillas · Argentina

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NASA National Aeronautics and Space Administration · **INTA** Instituto Nacional de Tecnología Agropecuaria · **ISBN** International Standard Book Number

Laboratorios de Análisis de Semillas

Explains germinability, physical purity and other tests, and the scope of different laboratory certificates. Ask the laboratory how to submit the lot.

Seed saving Carrot production Wheat field trials

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

ISBN: International Standard Book Number An identifier distinguishing a book edition and format.

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Laboratorios de Análisis de Semillas

D1044 Organic Seed Alliance · United States

Tomato Seed Production Guide

Covers flower anatomy, cross-pollination, ripe fruit, temperature, fermentation, rinsing and drying. The seed producer must check the changing slurry during processing.

D1045 INASE and Argentine public institutions · 12 September 2023

Inscribimos al Tomate Platense como Semilla Criolla

Report from Berazategui on recognition of locally maintained populations, with grower participation. The photograph accompanies the report. Individual photographer unlisted.

D1046 Universidad Nacional de La Plata

Investigadores y extensionistas en una cruzada por preservar la semilla del tomate platense

The university describes a germplasm extension project operating since 2013 with growers, cooperatives, students and several university units.

D1047 INIA-CSIC · Centro Nacional de Recursos Fitogenéticos, Spain

Conservación de recursos fitogenéticos

The Spanish collection connects seed conditioning and conservation to germination testing, monitoring and regeneration decisions.

D1044 Organic Seed Alliance · United States

Tomato Seed Production Guide

Covers flower anatomy, cross-pollination, ripe fruit, temperature, fermentation, rinsing and drying. The seed producer must check the changing slurry during processing.

INIA-CSIC, Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria / Consejo Superior de Investigaciones Científicas Spain's agricultural and food research institute, part of its national research council. D + number, Book evidence record

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INASE Instituto Nacional de Semillas

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INIA-CSIC, Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria / Consejo Superior de Investigaciones Científicas Spain's agricultural and food research institute, part of its national research council. The citation identifies the national plant genetic resources centre. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details. INIA: Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria

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D1048 Josef Schlaghecken · Wikimedia Commons

Common bean pod opened to show the ripe seeds, 17 August 2014

Phaseolus vulgaris. CC BY-SA 4.0. Full frame and circular detail shown at reduced resolution. Photographer and licence apply to both presentations.

D1049 INTA AMBA · 31 October 2024

Zanahorias: producirlas en el AMBA y con buenos rindes, es posible

Gorina trial, named varieties, marketable yield and root length. The accompanying photograph shows harvested carrots. Individual photographer unlisted.

D1050 INTA · EEA Mendoza

Riego en cultivos hortícolas: guía para la programación y planificación

The published carrot irrigation example identifies crop density, assumed rooting depth and the Mendoza Aeropuerto weather station. These inputs belong to that calculation.

D1051 Instituto Nacional de Tecnología Agropecuaria · Argentina

Comparing wheat varieties in the national trial network

INTA describes the RET-INASE results viewer and how to compare cultivars by site, season and other trial conditions.

ON THIS PAGE

INASE Instituto Nacional de Semillas · **INIA** Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference · **BY-SA** Creative Commons Attribution-ShareAlike · **INTA** Instituto Nacional de Tecnología Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **EEA** Estación Experimental Agropecuaria · **RET-INASE** Red de Ensayos Comparativos de Cultivares de Trigo Pan, published through the Instituto Nacional de Semillas

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INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

RET-INASE: Red de Ensayos Territoriales / Instituto Nacional de Semillas Argentina's territorial variety trial network and the national seed institute identified in the cultivar reference.

D1048 Josef Schlaghecken · Wikimedia Commons

Common bean pod opened to show the ripe seeds, 17 August 2014

Phaseolus vulgaris. CC BY-SA 4.0. Full frame and circular detail shown at reduced resolution. Photographer and licence apply to both presentations.

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D1052 D. Gómez and colleagues · INTA Marcos Juárez, Córdoba

Evaluación de cultivares de trigo pan en la EEA INTA Marcos Juárez

2025/26 report. The methods specify randomised complete blocks, three replicates and a 5 m² harvested unit at this site.

D1053 University of Florida · IFAS Extension

Adjusting Crop Yield to a Standard Moisture Content

Wet-basis moisture is water mass divided by wet grain mass. Equal dry matter is the basis for converting a wet weight to a stated reference moisture.

D1054 Harry Grant Olds · reproduced from the Antorchas volume

Vista campestre, cosecha de trigo en la provincia de Buenos Aires

Historical photograph, Public Domain Mark. The current record estimates c. 1900 and earlier file notes say c. 1910. An early twentieth-century date is used here.

D1055 Fundación Centro de Investigación Fotográfico Histórico Argentino

Harry Grant Olds · archival authority record

Archival context for the photographer's work in Argentina and the reconstruction of his archive. This record does not date the individual wheat photograph.

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and

D1053 University of Florida · IFAS Extension

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BY-SA Creative Commons Attribution-ShareAlike · **RET-INASE** Red de Ensayos Comparativos de Cultivares de Trigo Pan, published through the Instituto Nacional de Semillas · **INTA** Instituto Nacional de Tecnología Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **EEA** Estación Experimental Agropecuaria · **m²** square metre, an area unit · **IFAS** Institute of Food and Agricultural Sciences

Adjusting Crop Yield to a Standard Moisture Content

Wet-basis moisture is water mass divided by wet grain mass. Equal dry matter is the basis for converting a wet weight to a stated reference moisture.

D1054 Harry Grant Olds · reproduced from the Antorchas volume

Vista campestre, cosecha de trigo en la provincia de Buenos Aires

m²: Square metre The area of a square with sides one metre long.

IFAS: Institute of Food and Agricultural Sciences The University of Florida institute that provides agricultural research and extension.

Sources and collection records

Seed conservation, market roots and small wheat trials in Argentina

D1052 D. Gómez and colleagues · INTA Marcos Juárez, Córdoba

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Seed saving Carrot production Wheat field trials

D1056 República Argentina · national digital services

Términos y condiciones, propiedad intelectual

The national portal states CC BY 4.0 for its own content unless another notice appears. The two credited government photographs are shown as full frames or details.

D1057 Food and Agriculture Organization of the United Nations

Genebank Standards for Plant Genetic Resources for Food and Agriculture

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m² square metre, an area unit · **INTA** Instituto Nacional de Tecnología Agropecuaria · **EEA** Estación Experimental Agropecuaria · **IFAS** Institute of Food and Agricultural Sciences · **BY** Attribution condition in a Creative Commons licence

Chapter 4 distinguishes drying, storage, viability monitoring, regeneration, documentation and safety duplication for orthodox seeds.

D1058 J. C. Gaviola · EEA La Consulta, INTA

Rendimiento y calidad de semillas en cultivo de zanahoria implantado con mini raíces o cepellón

A San Carlos, Mendoza, study of carrot seed production. The harvested product and the establishment method differ from a trial for marketable roots.

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EEA, Estación Experimental Agropecuaria An agricultural experiment station. The following place name identifies the station in the Argentine institute's network. INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

Small livestock, fertility, raised beds and local growing seasons in Argentina

D1059 Carla Estefania Larrosa · INTA AER Río Gallegos

Cría de gallinas ponedoras

Santa Cruz leaflet. Perches, nests, egg collection and layer feed in cold regions. Its stage-specific figures are kept with their original context.

D1060 INTA AER Las Lomitas · 2 July 2024

Seguimiento a gallinas ponedoras

Formosa field record for an educational flock of Negra and Rubia INTA birds. Records sample weighing, growth during heat and several simultaneous changes. Includes the flock photograph.

D1061 INTA El Colorado · 26 January 2026

Optimizan la eficiencia genética de ponedoras Negra INTA

The Nilo Alberto Schaller multiplication centre reports the first locally produced parent stock for its Negra INTA layer programme. The hatchery photograph accompanies the report.

D1062 SENASA · Argentine animal health service · 2 June 2026

Prevención de la influenza aviar en aves de traspatio

Official backyard-flock instructions on protected feed and water, restricted entry, unusual clinical signs and immediate notification through the agency.

Laying hens Compost Raised beds Regional seasons

AER: Agencia de Extensión Rural A local rural extension office in the Argentine agricultural institute's network.

SENASA, Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods. D + number, Book evidence record The number

ON THIS PAGE

EEA Estación Experimental Agropecuaria · **INTA** Instituto Nacional de Tecnología Agropecuaria · **BY** Attribution condition in a Creative Commons licence · **AER** Agencia de Extensión Rural · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1063 SENASA · Buenos Aires Province · 16 September 2026

Influenza aviar en aves de traspatio en Carlos Spegazzini

A mortality report preceded official sampling of ducks and chickens and laboratory confirmation. The 3 km prevention area was a decision for that incident.

D1064 Instituto Nacional de Tecnología Agropecuaria · Pergamino

Estación Experimental Agropecuaria Pergamino

The station traces its experimental farm to 1912, including work on maize use for animals, and its transition into INTA in 1956.

D1065 Council of the European Union · consolidated text of 14 December 2019

Directive 1999/74/EC, laying hens, Articles 1 and 4

Article 1 defines the scope. Article 4 sets nest and perch provisions for alternative systems covered by the directive. The comparison identifies a different jurisdiction and population.

D1066 INTA AMBA · 21 May 2024

Compost: cómo transformar residuos orgánicos en abono

Container access, drainage and aeration for the Buenos Aires metropolitan area. The report carries the photograph of hands holding dark, crumbly material.

TERMS ON THIS PAGE SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

km: Kilometre A length of one thousand metres.

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. EC, European Community The suffix identifies the European Community legal instrument in the directive number. AMBA, Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area. The boundary depends on the definition and date cited. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

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SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **km** kilometre, 1,000 metres · **INTA** Instituto Nacional de Tecnología Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **EC** European Community, in this legal citation

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Small livestock, fertility, raised beds and local growing seasons in Argentina

D1067 Instituto Nacional de Tecnología Industrial · Argentina

Instructivo para la producción de compost domiciliario

Domestic composting guide. Discusses suitable plant materials, excluded inputs, air and moisture, observations during decomposition and signs of maturity.

D1068 SENASA · 11 January 2019

Producción de compost a partir de residuos sólidos urbanos

Contemporary account of Joint Resolution 1/2019, source-separated feedstocks, product registration and work that began in 2016. A dated institutional history.

D1069 INTA EEA Santa Cruz · soil sampling field leaflet

Muestreo de suelos

Composite sampling, separate depths, field identification and analysis. The pamphlet illustrates 20 subsamples and identifies electrical conductivity with its extraction method.

D1070 I. Stantero and colleagues · INTA EEA Marcos Juárez, Córdoba

Resultados de la Huerta Demostrativa EEA INTA Marcos Juárez

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **EC** European Community, in this legal citation · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **EEA** Estación Experimental Agropecuaria

The demonstration garden covers 1,600 m², including 26 beds of 1 × 15 m. The report describes the functions of the rest of the site and records successive crops.

INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

EEA: Estación Experimental Agropecuaria An agricultural experiment station. The following place name identifies the station in the Argentine institute's network.

m²: Square metre The area of a square with sides one metre long.

m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1067 Instituto Nacional de Tecnología Industrial · Argentina

Instructivo para la producción de compost domiciliario

Domestic composting guide. Discusses suitable plant materials, excluded inputs, air and moisture, observations during decomposition and signs of maturity.

D1068 SENASA · 11 January 2019

Producción de compost a partir de residuos sólidos urbanos

Contemporary account of Joint Resolution 1/2019, source-separated feedstocks, product registration and work that began in 2016. A dated institutional history.

D1069 INTA EEA Santa Cruz · soil sampling field leaflet

Muestreo de suelos

Composite sampling, separate depths, field identification and analysis. The pamphlet illustrates 20 subsamples and identifies electrical conductivity with its extraction method.

D1070 I. Stantero and colleagues · INTA EEA Marcos Juárez, Córdoba

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m² square metre, an area unit · **m** metre, a length unit · **×** multiplied by · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **INTA** Instituto Nacional de Tecnología Agropecuaria · **EEA** Estación Experimental Agropecuaria

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D1069 INTA EEA Santa Cruz · soil sampling field leaflet

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D1071 INTA EEA El Colorado · Formosa · 14 August 2026

El Niño: claves para reducir los riesgos en la producción hortícola

Local recommendations distinguish high, intermediate and low ground. Gives possible ridge heights in a heavy-rain scenario. Includes the photograph of workers on formed rows.

The grower describes about twenty vegetables on one cropped hectare within a three-hectare rotation. First-person farm case with its own land and management conditions.

D1072 French Ministry of Agriculture · 9 July 2019

Crop rotation on Prosper Cochet's holding in Loire-Atlantique

D1073 Instituto Nacional de Tecnología Agropecuaria · Argentina

Planificá tu huerta

The planting planner distinguishes crop group, sowing, transplanting, plant spacing and rows. Match recommendations to the named crop and regional growing window.

D1074 INTA San Pedro and Concordia

Cómo diseñar la huerta para evitar estrés por calor o salinidad

Observations from Buenos Aires and Entre Ríos on heat, soil cover and saline irrigation water. Supports checking water quality before attributing leaf symptoms to a nutrient shortage.

The grower describes about twenty vegetables on one cropped hectare within a three-hectare rotation. First-person farm case with its own land and management conditions.

Crop rotation on Prosper Cochet's holding in Loire-Atlantique

D1073 Instituto Nacional de Tecnología Agropecuaria · Argentina

Planificá tu huerta

The planting planner distinguishes crop group, sowing, transplanting, plant spacing and rows. Match recommendations to the named crop and regional growing window.

D1075 INTA Las Breñas · Chaco · 27 October 2026

Casi 90 años mirando el cielo: la historia de la estación agrometeorológica de Las Breñas

Measurements began in 1937. Reports different frost-free intervals at 5 cm and 1.5 m, and the addition of an automatic station in 2007. Includes a station photograph.

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **EEA** Estación Experimental Agropecuaria · **cm** centimetre, 0.01 metre · **m** metre, a length unit

D1076 INTA Río Grande and Río Turbio · 8 November 2022

Pautas para obtener alimentos frescos en la Patagonia Austral

Reports late-July nursery work in Río Grande, exposure to wind, and conditions for open-air or protected crops in the far south. Read each observation with its named locality.

D1077 NOAA National Centers for Environmental Information · United States

When to Expect Your Last Spring Freeze

The US map uses the 1991-2020 normals and a 32 °F threshold. Historical climate normals, exposure and an actual short-range forecast answer different questions.

D1078 SENASA · Registro Nacional Sanitario de Productores Agropecuarios

Inscribir o actualizar establecimientos en el RENSPA

Official registration workflow for the producer and the establishment. Use alongside local siting, handling or selling requirements for the proposed operation.

cm: Centimetre A unit of length equal to one hundredth of a metre.

NOAA, National Oceanic and Atmospheric Administration The United States agency supplying ocean, weather and climate records. US, United States of America Identifies the country or jurisdiction of the source, price or institution. SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

RENSPA: Registro Nacional Sanitario de Productores Agropecuarios Argentina's register that identifies agricultural producers and their production sites for sanitary oversight.

m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Sources and collection records

Small livestock, fertility, raised beds and local growing seasons in Argentina

D1075 INTA Las Breñas · Chaco · 27 October 2026

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INTA Instituto Nacional de Tecnología Agropecuaria · **NOAA** National Oceanic and Atmospheric Administration · **US** United States · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **RENSPA** Registro Nacional Sanitario de Productores Agropecuarios · **cm** centimetre, 0.01 metre · **m** metre, a length unit

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Laying hens Compost Raised beds Regional seasons

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D1079 Cornell University · Cornell Composting

Calculating the carbon-to-nitrogen ratio

Shows how carbon, nitrogen, mass and moisture enter a mixed feedstock calculation. Bucket volumes alone cannot establish a chemical carbon-to-nitrogen ratio.

D1080 Cornell University · Cornell Composting

Moisture content on a wet-weight basis

Defines water mass as a fraction of the wet mass. Use comparable samples and the laboratory's stated method before combining measurements or interpreting moisture.

D1079 Cornell University · Cornell Composting

Calculating the carbon-to-nitrogen ratio

Shows how carbon, nitrogen, mass and moisture enter a mixed feedstock calculation. Bucket volumes alone cannot establish a chemical carbon-to-nitrogen ratio.

TERMS ON THIS PAGE D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Argentine herbarium collections, historical literature, chañar and its products

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US United States · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **RENSPA** Registro Nacional Sanitario de Productores Agropecuarios · **INTA** Instituto Nacional de Tecnología Agropecuaria · **NOAA** National Oceanic and Atmospheric Administration

D1081 INTA · Instituto de Recursos Biológicos · 2019

Una colección que resguarda la biodiversidad vegetal de la Argentina

Dates the first BAB collecting record to 1895 and formal opening to 1899. Includes a collection photograph and describes the purpose of regional floras.

D1082 Universidad Nacional de Córdoba · Museo Botánico

Historia del Museo Botánico de Córdoba

Records Lorentz, Hieronymus and the related sets in Göttingen and Córdoba. The museum links the collections with the work of August Grisebach.

D1083 Smithsonian Institution · US National Herbarium · GBIF 1702813234

Geoffroea decorticans, US 3336871, sheet barcode 02444396

Fortunato, Elechosa and Mavrek 4743, 12 December 1994, Río Negro. Publisher-supplied specimen image is CC0.

D1084 Missouri Botanical Garden · Tropicos · GBIF 4031657222

Geoffroea decorticans, MO 102098452, gathering 4743

Names, date, collector number and road junction agree with the Smithsonian record. This second catalogue entry supplies the comparison.

Specimen and history Field method Chañar case

BAB, Herbarium code for the Instituto de Botánica at INTA, Castelar The code identifies the Argentine collection that holds the specimen cited on this page. GBIF, Global Biodiversity Information Facility An international network that publishes species-occurrence and collection data. CC0: Creative Commons Zero A public-domain dedication by which a rights holder waives rights to the extent legally possible.

MO, Missouri Botanical Garden herbarium code The collection prefix identifies the herbarium holding the specimen linked to the number. D + number, Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

US: United States National Herbarium Collection code in US 3336871; gathered in Rio Negro, Argentina.

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D1085 Wellcome Collection · qmg2uf64 · 1652

Nicholas Culpeper, The English Physitian, London, P. Cole

Digitised book and title leaf, canvas 11. The title supplies a short quotation in its printed context. Wellcome marks the scan as public domain.

D1086 Wellcome Collection · print 2249i · 1652

Nicholas Culpeper, line engraving

Catalogue, credit and public-domain designation for the separate engraved likeness.

D1087 London Museum · Spitalfields

Nicholas Culpeper and the public readership of herbal medicine

Biographical setting, 1616-1654, English-language publishing and the relation between his practice and astrology.

D1088 Administración de Parques Nacionales · Argentina

Gestión de Permisos de Investigación, GEPIN

Official procedure for scientific projects in APN jurisdictions. Requirements depend on the activity, area and authorised collection or movement.

TERMS ON THIS PAGE GEPIN: Gestión de Permisos de Investigación The research-permit process used by Argentina's National Parks Administration.

D1085 Wellcome Collection · qmg2uf64 · 1652

APN: Administración de Parques Nacionales Argentina's National Parks Administration.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Sources and collection records

Argentine herbarium collections, historical literature, chañar and its products

D1085 Wellcome Collection · qmg2uf64 · 1652

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US United States · **CC0** Creative Commons Zero, a public-domain dedication tool · **APN** Administración de Parques Nacionales

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Catalogue, credit and public-domain designation for the separate engraved likeness.

D1089 University of Florida Herbarium · FLAS

Preparation of plant specimens for deposit as herbarium vouchers

Field preparation, permits and arrangements for deposit, reproductive material, labelling, press assembly and arrangement.

D1090 American Museum of Natural History · Biodiversity Counts

How to press and preserve plants

Roles of folded newsprint, blotting paper, corrugated separators and outer boards. Supply quantities in the worked example are separately derived.

D1091 Royal Horticultural Society · herbarium guide

Create a herbarium step by step

Calls for inspection after 24 hours, replacement of damp material and regular checks. The actual drying interval varies.

ON THIS PAGE

APN Administración de Parques Nacionales

D1092 Biodiversity Information Standards · TDWG

Darwin Core quick reference guide

Definitions of record number, catalogue number, occurrence identifier, original locality and coordinate uncertainty in metres.

TERMS ON THIS PAGE FLAS: Herbarium code for the University of Florida Herbarium This standard collection identifier distinguishes its specimens from those at other institutions.

TDWG: Biodiversity Information Standards, originally Taxonomic Databases Working Group The international body developing standards for biodiversity data.

D1093 University of Florida Herbarium · FLAS

Collection acquisition checklist for collectors

Receiving institution requests advance contact, permit records, labels and organised sets. FLAS arranges its own accession and duplicate distribution.

D1094 Instituto de Botánica Darwinion · Flora del Cono Sur

Geoffroea decorticans, taxon 9564

Leaflet and fruit ranges, synonymy and Argentine collections. Includes Hurrell 4914 from Zárate and Ferrucci 824 from Córdoba.

D1095 Royal Botanic Gardens, Kew · GBIF 4954089578

Geoffroea decorticans, Ferrucci 824, K003030935

Voucher collected at Parque Francisco Tau, Bell Ville, on 13 October 1992. Digital specimen image credited to Kew under CC BY 4.0.

D1096 Sistema de Información de Biodiversidad · Parques Nacionales

Ficha de especie, Geoffroea decorticans

Identification, range and site literature, including Lihué Calel. Distinguishes the species profile from an observation on a dated field visit.

GBIF: Global Biodiversity Information Facility An international network that publishes species-occurrence and collection data.

CC BY 4.0, Creative Commons Attribution 4.0 International A licence permitting reuse, subject to attribution and its other terms. D + number, Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

D1097 Ente BioCórdoba · Municipalidad de Córdoba · 20 September 2023

El Chañar Abuelo de la Reserva Natural Urbana General San Martín

Reports the heritage designation, a university age estimate and a separate ranger estimate. Neither gives an exact germination date.

D1098 Germán G. Figueroa and Mariana Dantas · La Zaranda de Ideas · 2006

ON THIS PAGE

TDWG Biodiversity Information Standards, historically the Taxonomic Databases Working Group · **GBIF** Global Biodiversity Information Facility · **BY** Attribution condition in a Creative Commons licence

Recolección, procesamiento y consumo de frutos silvestres en el noroeste semiárido argentino

Fieldwork during the 2005-06 harvest in Santiago del Estero and Catamarca. Treats contemporary practices as comparative data for archaeological questions.

D1099 ANMAT and Secretaría de Agricultura · Boletín Oficial · 18 November 2025

Resolución Conjunta 11/2025, articles 3 to 5

Defines whole-fruit flour, pulp flour and arrope in the Argentine Food Code. Gives analytical limits for flour and naming rules for fruit concentrates.

D1100 ANMAT · Argentina · Disposición 5418/2015

Medicamentos herbarios y medicamentos herbarios de uso tradicional

Documents distinct regulatory classifications and the information submitted for a product, formulation, indication and route.

TERMS ON THIS PAGE ANMAT: Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology.

D1101 European Commission · Public Health

Herbal medicinal products and traditional-use registration

European comparison of the traditional-use and well-established-use routes, including the duration of prior medicinal use.

D1102 US National Center for Complementary and Integrative Health

Herb-drug interactions, clinical digest

Distinguishes evidence types and describes clinically important interactions for some plant preparations, including St John's wort.

D1103 Field Museum Library · lantern slide CSB4342c

Botanist collecting and pressing plants, Armour expedition, 1899

Museum-supplied description identifies Jamaica and a hand-coloured lantern slide. The identification of the person is qualified in the catalogue.

D1104 Dick Culbert · photograph · 10 April 2009

Geoffraea decorticans, bark, original photograph

Photographer identifies peeling chañar bark. Credit under CC BY 2.0. The caption supplies no location for the pictured tree.

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

CC BY: Creative Commons Attribution A reuse licence requiring credit to the creator and compliance with its terms.

D1105 Dick Culbert · photograph · 13 April 2009

ON THIS PAGE

ANMAT Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **US** United States · **BY** Attribution condition in a Creative Commons licence

Geoffraea decorticans, fruit, La Rioja Province

Source of the fruit photograph carried forward from the earlier chañar lesson. Date and province are documented. CC BY 2.0.

D1106 Universidad Nacional de Córdoba · Museo Botánico

Protocolo de colecciones del Herbario CORD

Describes access to the public research collection and directs applicants to the institution’s collection protocol.

TERMS ON THIS PAGE CC BY: Creative Commons Attribution A reuse licence requiring credit to the creator and compliance with its terms.

Documentary photographs, historical records, Argentine cherries and measured food preservation

D1107 North Carolina State University · Extension Plant Toolbox

Prunus virginiana, morphology and poisonous parts

Botanical character set, growth form and cyanogenic compounds in vegetative parts and seeds. Use the species account with local botanical expertise.

D1108 Matt Lavin · Bozeman, Montana · 2 June 2003

Flowering racemes, Prunus virginiana, photograph 5069287191

The photographer identifies the elongated flowering clusters. CC BY-SA 2.0. A circular detail and an uncropped view appear in this section.

D1109 Matt Lavin · photograph dated 28 September 2008

Fruit and empty pedicels, Prunus virginiana, photograph 5069894416

Lavin identifies the empty individual stalks left beside the fruits. CC BY-SA 2.0. This is the documented photograph from the earlier chokecherry opening.

D1110 US National Park Service · Wind Cave National Park

Chokecherry, fruit and leaves, NPS photograph

The archived NPS credit accompanies this US federal public-domain image. The Commons upload date is separate from the unknown exposure date.

The tree and its histories Los Antiguos Juice and freezing

TERMS ON THIS PAGE CC BY-SA: Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

NPS, National Park Service The United States agency responsible for the park, site or historical interpretation cited here. D + number, Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

D1111 University of Nebraska-Lincoln · expedition journal, 29 May 1806

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BY Attribution condition in a Creative Commons licence · **BY-SA** Creative Commons Attribution-ShareAlike · **US** United States · **NPS** National Park Service, United States

Meriwether Lewis, journal entry and botanical observations

Transcription and editorial notes. Lewis records the onset of bloom and distinguishes the shared flower stalk from the individual flower stalks.

D1112 Ruelle and collaborators · GeoHealth · 2022

Ecological Calendars, Food Sovereignty, and Climate Adaptation in Standing Rock

Original participatory research. Chokecherry was recorded in the ecological calendars of all seven participating Standing Rock communities.

D1113 François-André Michaux · The North American Sylva · 1819

Plate 88, Wild Cherry, engraved after P. Bessa

Historical caption Cerasus virginiana. Catalogue credits P. Bessa and the engraver Gabriel. Public-domain plate, used as evidence of historical illustration and naming.

D1114 New York Public Library · Digital Collections

Wild Cherry (Cerasus virginiana), collection object

Independent collection record for the printed subject and the work of Michaux. The historical label is transcribed separately from a modern field identification.

TERMS ON THIS PAGE D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1115 Instituto Nacional de Tecnología Agropecuaria · Argentina · 2024

Cerezas patagónicas, un impulso a los saberes locales

INTA describes frost, export volumes, local experience and pollination work at Los Antiguos, Santa Cruz. Its accompanying photograph depicts the separate Argentine case.

D1116 Argentina · Secretaría de Agricultura, Ganadería y Pesca · 2025

Resolución 49/2025, Cereza del Valle de Los Antiguos - Patagonia

Formal recognition of the designation of origin. Its geographical scope and production protocol belong to the named Argentine product.

D1117 Utah State University Extension · horticulture

How to Grow Chokecherry in Your Garden

Cultivar-dependent spacing and the tendency to sucker. The teaching row is a calculation using an explicitly selected interval.

D1118 University of Alaska Fairbanks Cooperative Extension Service

Chokecherries, juice extraction and freezing directions

Fruit and water by volume, gentle cooking, intact stones, gravity drainage, approximate yield and half-inch headspace in sanitised freezer containers.

D1116 Argentina · Secretaría de Agricultura, Ganadería y Pesca · 2025

Resolución 49/2025, Cereza del Valle de Los Antiguos - Patagonia

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Cultivar-dependent spacing and the tendency to sucker. The teaching row is a calculation using an explicitly selected interval.

D1119 Utah State University Extension · Preserving the Harvest

How to preserve chokecherries

Second extension account of gentle extraction. Its separate tested jelly process specifies ingredients, packaging and processing conditions.

D1120 US National Institute of Standards and Technology

Handbook 44, Appendix C, general tables of units

United States customary volume and length relationships. Published units are distinguished from rounded kitchen conversions and observed weights.

D1121 National Center for Home Food Preservation · University of Georgia

Freezing pointers

Container choice, available freezer capacity, spacing during freezing, dating and rotation. Check the equipment at its intended storage temperature.

D1122 US Food and Drug Administration

Refrigerator thermometers, cold facts about food safety

Appliance thermometer and 0 °F freezer target. Supply the measured value and time when reporting a temperature excursion.

Sources and visual credits

Plant specimens, regional foodways, engineering, biographies and historical documents

D1123 · INTA, Argentina Huertas: local guidance for the family garden National and regional kitchen-garden guidance. Adapt a planting calendar to the locality and exposure.

Open the source

D1124 · US Department of Agriculture, Economic Research Service Vegetables and pulses US crop categories, production and use. Market groupings may combine several species or organs.

D1125 · United Kingdom, Department for Environment, Food and Rural Affairs Horticulture statistics UK-grown fruit and vegetables and distinctions between domestic production and supplies.

D1126 · International Potato Center Andean roots and tubers Diverse Andean crop collections include oca, ulluco and yacón; the plant organs and uses differ.

ON THIS PAGE

US United States · **INTA** Instituto Nacional de Tecnología Agropecuaria

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UK, United Kingdom Identifies the country of the source, guidance or institution. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1127 · National Tropical Botanical Garden, Breadfruit Institute Breadfruit history Pacific domestication and dispersal and colonial transfer to the Caribbean.

D1128 · Royal Botanic Gardens, Kew Enset Use of the pseudostem and corm and enset's role in Ethiopian food systems.

D1129 · University of Hawai'i at Mānoa Pacific Food Guide: food preferences Taro, bananas, breadfruit and other crops in specific Pacific food traditions.

D1130 · Food Standards Australia New Zealand Cassava and bamboo shoots Cyanogenic compounds, differences between cassava varieties and product-specific safe preparation.

TERMS ON THIS PAGE D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1131 · New Zealand Food Safety Natural toxins in vegetables and beans Food safety information about potatoes, rhubarb and other plant foods.

D1132 · Te Ara, the Encyclopedia of New Zealand Kūmara in Aotearoa Māori introduction, cultivation and storage of sweet potato under local conditions.

D1133 · Smithsonian Gardens Orchid innovation and the vanilla orchid Edmond Albius, hand pollination on Réunion and the commercial development of vanilla.

D1134 · Piperno and colleagues, Proceedings of the National Academy of Sciences Starch and phytolith evidence for early maize in the Central Balsas Archaeological evidence from the early ninth millennium before present in Mexico.

D1135 · Instituto de Alimentação e Mercados Agrícolas, Azores Ananás dos Açores, São Miguel A named Atlantic island ananás and its distinctive greenhouse production.

D1136 · German Aerospace Center, DLR EDEN ISS in Antarctica Research greenhouse production distinguishes cultivated vegetables at an Antarctic station from native food floras.

D1137 · Argentina, Alimentos Argentinos Yerba mate: the Argentine production chain The Argentine production area, harvest, processing and commercial product.

D1138 · INTA, Alto Valle Experimental station in the Alto Valle Regional fruit growing, orchard management and local horticultural research.

TERMS ON THIS PAGE DLR: Deutsches Zentrum für Luft- und Raumfahrt The German Aerospace Center, responsible for the cited space or polar research.

EDEN ISS, Evolution and Design of Environmentally closed Nutrition-Sources / International Space Station The greenhouse project tested controlled crop production in an Antarctic environment for space-related

ON THIS PAGE

DLR German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt) · **ISS** International Space Station; EDEN ISS is the name of an Antarctic greenhouse research project · **INTA** Instituto Nacional de Tecnología Agropecuaria

research. INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1139 · National Parks Board, Singapore Pachyrhizus erosus The food root of jícama and toxic parts of the climbing legume.

D1140 · National Parks Board, Singapore Taro Edible cultivated taro, its corm and the need for thorough cooking.

D1141 · US National Library of Medicine Glucose-6-phosphate dehydrogenase deficiency Fava beans can trigger haemolytic anaemia in people with this deficiency.

D1142 · US Centers for Disease Control and Prevention Fasciola clinical overview Transmission through raw freshwater plants including wild watercress.

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

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D1143 · German Federal Institute for Risk Assessment Bitter-tasting courgettes Cucurbitacins and the importance of discarding unusually bitter squash.

D1144 · US Centers for Disease Control and Prevention Raw flour and dough Flour is a raw food that can carry pathogens. Thorough cooking is necessary.

D1145 · University of Wisconsin-Madison, Extension Bambara groundnut A cultivated African food legume that forms its pods underground.

D1146 · CGIAR Genebank Platform Yam Diversity of edible yams, including African and Asian cultivated species.

CGIAR, Consultative Group on International Agricultural Research The historical name behind the international agricultural research partnership known as CGIAR. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1147 · Marks Barfield Architects Kew Gardens Treetop Walkway Designers' record of the timberland, root survey, pylons and opening in 2008.

D1148 · Royal Botanic Gardens, Kew Treetop Walkway Institutional account of the 18 m canopy walk in Britain.

D1149 · Lane Motor Museum Mochet Le Vélocar, 1926 Museum collection example of a human-powered four-wheeled vehicle in France.

D1150 · The Henry Ford 1927 Ford Roadster pedal car A surviving American pedal vehicle for children permits a comparison of mobility, play and scale.

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ISS International Space Station; EDEN ISS is the name of an Antarctic greenhouse research project · **US** United States · **m** metre, a length unit

TERMS ON THIS PAGE m: Metre The base unit of length in the International System of Units.

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Sources and visual credits

D1151 · Royal Society, Science in the Making William Ramsay and Emily Aston: molecular surface energy of mixtures Archive record of their joint paper on mixtures of non-associating liquids.

D1152 · Irma Goldberg, Berichte der deutschen chemischen Gesellschaft Phenylation in the presence of copper as a catalyst, 1906 Original paper on copper-catalysed reaction chemistry.

D1153 · US Food and Drug Administration Mary Engle Pennington and the cold chain Historical account of her laboratory and refrigeration experiments in the American food supply.

D1154 · Ochanomizu University, History Museum Michiyo Tsujimura Green tea research, isolation of catechin in 1929, doctorate in 1932 and later teaching.

D1155 · Consolidated Engineering Corporation, 1946 Sibyl M. Rock, computing manual for analysis of mass spectra The surviving title leaf identifies the analyst and the computational work.

D1156 · Greater Grand Rapids Women's History Council Loney Clinton Gordon Gordon's work in the Michigan pertussis laboratory with Pearl Kendrick and Grace Eldering.

D1157 · Arthur C. Cope and Elizabeth M. Hardy, JACS A rearrangement involving migration of an allyl group, 1940 Experimental paper underlying the name Cope rearrangement.

D1158 · US Department of Agriculture researchers, Applied Microbiology Production of fumaric acid by Rhizopus arrhizus Original fermentation paper credits S. E. Kelley and colleagues.

TERMS ON THIS PAGE JACS: Journal of the American Chemical Society The journal carrying the cited chemistry paper.

D1159 · Spanish Society of Biochemistry and Molecular Biology Sara Borrell Ruiz Professional society account of steroid-hormone research and work in Spain.

Open the source

D1160 · Zhang Manping and Gao Xiaoxia, Acta Chimica Sinica Electroanalytical chemistry of gadolinium, 1983 A measured peak under specified conditions varied with the concentration of added gadolinium.

Open the source

D1161 · University of New Mexico, Chemistry theses

The university's own catalogue credits the author, title and date.

Open the source

D1162 · Darshan Ranganathan and colleagues, JACS Hydrogen-bonded self-assembled peptide nanotubes, 1999 Original experimental report of cystine-based macrocyclic structures.

Open the source

Katheryn L. Lawson: Behavior of Indium at Tracer Concentrations, 1957

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US United States

D1303 · Models in the eight examples

Coffee · heat transfer OpenStax, College Physics 2e · convection

Ladder · forces and moments OpenStax, University Physics 1 · static equilibrium

Bicycle and spinning wheel OpenStax, University Physics 1 · angular momentum

Braking · speed and distance OpenStax, University Physics 1 · constant acceleration

Straw · pressure difference OpenStax, College Physics 2e · fluid pressure

Lamp · electrical power OpenStax, College Physics 2e · power and energy

Lift · Newton’s second law OpenStax, University Physics 1 · solving with Newton’s laws

Example inputs are chosen to make the arithmetic visible. Friction, heat losses and reaction time depend on the actual equipment and situation.

Return to the eight worked models · p. 672

D1160 · Zhang Manping and Gao Xiaoxia, Acta Chimica Sinica Electroanalytical chemistry of gadolinium, 1983 A measured peak under specified conditions varied with the concentration of added gadolinium.

D1161 · University of New Mexico, Chemistry theses

D1162 · Darshan Ranganathan and colleagues, JACS Hydrogen-bonded self-assembled peptide nanotubes, 1999 Original experimental report of cystine-based macrocyclic structures.

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https://openstax.org/books/university-physics-volume-1/pages/12-2-examples-of-static-equilibrium

Bicycle and spinning wheel OpenStax, University Physics 1 · angular momentum

https://openstax.org/books/university-physics-volume-1/pages/12-2-examples-of-static-equilibrium

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https://openstax.org/books/university-physics-volume-1/pages/6-1-solving-problems-with-newtons-laws

D1163 · US National Aeronautics and Space Administration Bernoulli's equation Flow assumptions and the exchange between pressure and kinetic-energy terms.

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D1164 · Louis de Broglie, Nobel Foundation The wave nature of the electron De Broglie's 1929 Nobel lecture discusses wavelength and momentum.

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D1165 · German Patent and Trade Mark Office Lise Meitner The experimental findings, Meitner and Frisch's interpretation and the history of nuclear fission.

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D1166 · National Museum of Nuclear Science & History Ida Noddack Ida Tacke Noddack, Walter Noddack, Otto Berg and the discovery of rhenium.

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D1302 · Evidence for the nine contributions

Marie Curie American Institute of Physics

Ida Noddack National Museum of Nuclear Science & History

Yvette Cauchois Royal Society of Chemistry · astatine

Harriet Brooks Government of Canada · Harriet Brooks

Darleane Hoffman University of California, Berkeley · fermium

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Return to the nine contributions · p. 663

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https://history.aip.org/exhibits/curie/resbr2_text.htm

https://ahf.nuclearmuseum.org/ahf/profile/ida-noddack/

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https://periodic-table.rsc.org/element/85/astatine

Harriet Brooks Government of Canada · Harriet Brooks

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https://www.canada.ca/en/women-gender-equality/commemorations-celebrations/women-impact/stem/harriet-brooks.html

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https://www.dpma.de/english/our_office/publications/ingeniouswomen/lisemeitner/index.html

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https://www.ornl.gov/staff-profile/clarice-e-phelps

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D1167 · Government of Argentina Bandera nacional Belgrano in Rosario, formal adoption and the development of the national symbol.

D1168 · Oneida Indian Nation The Haudenosaunee creation story A community-published account of Sky Woman, the diving animals, the swans and Turtle. The telling on this page follows this version.

D1169 · NASA, eclipse and calendar reference Calendars and their history Mean synodic month and tropical year and the separate purposes of lunar and civil calendars.

D1170 · US Conference of Catholic Bishops Mark 6, verses 30-44 Text of the feeding narrative including groups, five loaves, two fish and collected fragments.

TERMS ON THIS PAGE NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

D1171 · US Conference of Catholic Bishops John 6, verses 1-15 Parallel passage identifying the boy, barley loaves and gathering of the fragments.

D1172 · Open Library, Internet Archive Man's Higher Consciousness, Hilton Hotema Edition record dated 1962. The catalogue establishes an author and title, not authorship of words circulating beside a portrait.

D1173 · US Geological Survey, EROS Antarctic single-frame aerial photographs The Navy's 1946 mapping campaign and the vertical, left-oblique and right-oblique images of its trimetrogon system.

D1174 · US National Science Foundation McMurdo Station Establishment in December 1955, opening in 1956, Ross Island and the station's logistical role.

EROS, Earth Resources Observation and Science The United States Geological Survey centre that manages satellite land-imagery records. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1175 · US Naval History and Heritage Command To the South Pole for Halloween Deep Freeze, the preparations at McMurdo and the October 1956 flight to the South Pole.

D1176 · NASA History The National Aeronautics and Space Act of 1958 creates NASA Law signed on 29 July; operations began 1 October. The agency inherited NACA laboratories and personnel.

D1177 · NASA History Explorer 1 becomes America's first satellite Iowa detector, orbit and evidence for naturally trapped radiation, before NASA began operations.

D1178 · Secretariat of the Antarctic Treaty The Antarctic Treaty Original treaty text, signing in Washington, peaceful use, research and inspections.

NASA, National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here. NACA, National Advisory Committee for Aeronautics

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D1179 · Ministerio de Relaciones Exteriores, Argentina Tratado Antártico Argentina's participation, signature and entry into force on 23 June 1961.

D1180 · US Department of Energy, OSTI Operation Fishbowl Historical technical account of the 1962 US high-altitude nuclear-test series in the Pacific.

D1181 · NASA Technical Reports Server The artificial radiation belt made on July 9, 1962 Measurements of the artificial radiation environment that followed the Starfish Prime test.

D1182 · NASA The Starfish exo-atmospheric, high-altitude nuclear weapons test Retrospective on the location, altitude and effects of the Starfish Prime explosion.

OSTI: Office of Scientific and Technical Information The United States Department of Energy office that preserves research records.

NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

D1183 · NASA Apollo 11 mission overview Launch, lunar landing, crew roles, surface work, rendezvous and the July 1969 return.

D1184 · US National Archives Apollo 11 flight plan The planned sequence and timing of flight operations in the mission's contemporary document.

D1185 · Jet Propulsion Laboratory, Solar System Dynamics Planetary satellite physical parameters Satellite names, parent bodies and mean radii. Here diameters are calculated as twice the tabulated radius and rounded to whole kilometres.

D1186 · NASA Voyager's planetary voyage The two spacecraft, encounter chronology and the different satellite surfaces revealed by close imaging.

D1187 · NOAA National Centers for Environmental Information Magnetic declination Sign convention, local variation, changing values and conversion from magnetic to true bearing.

D1188 · US Geological Survey How to orient a map and compass Distinguishing geographic, magnetic and map references when orienting a map in the field.

D1189 · Museum of Modern Art Ernő Rubik: Rubik's Cube, 1974 Museum collection record dating the design and naming its designer.

D1190 · Rubik's Official three-by-three solve guide Face-turn notation, piece types, staged problem solving and the manufacturer's full illustrated solution.

TERMS ON THIS PAGE NOAA: National Oceanic and Atmospheric Administration The United States agency supplying ocean, weather and climate records.

D1292 · Edward Worth Library Paré's printed iron hand 1564 Paris account identifying pivots, gears, catches, springs and release.

D1293 · Auburn University and Kassel Hand Project Examining early articulated iron hands Object-based reconstruction and the wrist release on the Kassel hand.

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US United States · **OSTI** Office of Scientific and Technical Information · **NASA** National Aeronautics and Space Administration · **NOAA** National Oceanic and Atmospheric Administration

D1294 · Science Museum Group James Sharp's domestic gas cooker, around 1850 Southampton, makers, construction and object 1963-179.

D1295 · Science Museum Group Alfred King's cooker for 148 Piccadilly 1859 cooker, three concentric burners and separately catalogued panel.

D1296 · Heidelberg University, Kirchhoff Institute Desaga's burner and laboratory spectroscopy The 1855 instrument and the principle of premixing air and gas.

D1297 · National Institute of Standards and Technology Industrial length and the gauge block Johansson's 1896 combination principle and precision length measurement.

D1298 · Science Museum Group Rover safety bicycle, Coventry, 1885 John Kemp Starley and the rear-wheel chain drive in a surviving example.

D1299 · Prague City Tourism Old Town Hall and the astronomical clock Clockmakers, seasonal hours, calendar and replacement sculpture.

D1300 · City of Rouen Gros-Horloge Municipal description of the single hand, lunar globe, weekday display and wool symbolism.

D1301 · City of Rouen Restoring the Gros-Horloge Municipal history dating the mechanism to 1389 and the two dials to 1527-1529.

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D1230 · Royal Botanic Gardens, Kew Lactuca sativa · Iceberg lettuce

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D1234 · Royal Botanic Gardens, Kew Pachyrhizus erosus · Jícama

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O.S.A.: Ordo Sancti Augustini The Order of Saint Augustine. These letters after a person's name indicate membership of the order.

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D1251 · NC State Extension, Plant Toolbox Allium cepa · Onion

Colin CC BY-SA 3.0

D1252 · Royal Botanic Gardens, Kew Carica papaya · Papaya

Köhler's Medizinal-Pflanzen Public domain

D1253 · NC State Extension, Plant Toolbox Pastinaca sativa · Parsnip

Goldlocki CC BY-SA 3.0

D1254 · NC State Extension, Plant Toolbox Arachis hypogaea · Peanut

D1255 · NC State Extension, Plant Toolbox Capsicum annuum · Pepper, sweet

Kham Tran - www.khamtran.com CC BY-SA 3.0

D1256 · NC State Extension, Plant Toolbox Solanum tuberosum · Potato

Scott Bauer, USDA ARS Public domain

D1257 · Royal Botanic Gardens, Kew Cydonia oblonga · Quince

Pancrace Bessa Public domain

D1258 · Royal Botanic Gardens, Kew Chenopodium quinoa · Quinoa

User:MarkusHagenlocher CC BY-SA 3.0 VisualSurround CC BY-SA 4.0

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D1259 · Royal Botanic Gardens, Kew Raphanus sativus · Radish

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Self, en:User:Jengod Public domain

D1260 · Royal Botanic Gardens, Kew Rheum, culinary hybrids · Rhubarb

Dieter Weber (User:Uellue) CC BY-SA 3.0

D1261 · Royal Botanic Gardens, Kew Oryza sativa · Rice, Asian

Augustus Binu : flickr : Instagram CC BY-SA 3.0 IRRI Images CC BY 2.0

D1262 · Royal Botanic Gardens, Kew Sorghum bicolor · Sorghum

Pethan (catalogue attribution) CC BY-SA 3.0 Maheder CC BY-SA 4.0

IRRI: International Rice Research Institute The agricultural research institute specialising in rice.

CC BY, Creative Commons Attribution A reuse licence requiring credit to the creator and compliance with its terms. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D1263 · Royal Botanic Gardens, Kew Spinacia oleracea · Spinach

D1264 · Royal Botanic Gardens, Kew Fragaria × ananassa · Strawberry

D1265 · Royal Botanic Gardens, Kew Ipomoea batatas · Sweet potato

Llez CC BY-SA 3.0

D1266 · Royal Botanic Gardens, Kew Colocasia esculenta · Taro

Thierry Caro (catalogue attribution) CC BY-SA 2.5 Tim Evanson CC BY-SA 2.0

D1267 · Royal Botanic Gardens, Kew Eragrostis tef · Teff

Rasbak (catalogue attribution) CC BY-SA 3.0 Maheder CC BY-SA 4.0

D1268 · Royal Botanic Gardens, Kew Solanum lycopersicum · Tomato

Softeis CC BY-SA 3.0

D1269 · Royal Botanic Gardens, Kew Brassica rapa · Turnip

thebittenword.com CC BY 2.0

D1270 · Royal Botanic Gardens, Kew Dioscorea alata · Ube

Remi Tournebize CC BY-SA 3.0

D1271 · Royal Botanic Gardens, Kew Ullucus tuberosus · Ulluco

William Jackson Hooker Public domain Landcuo CC BY-SA 4.0

D1272 · Royal Botanic Gardens, Kew Citrus × sinensis · Valencia orange

javic CC BY-SA 2.0

D1273 · Royal Botanic Gardens, Kew Vanilla planifolia · Vanilla

Franz Eugen Köhler, Köhler's Medizinal-Pflanzen Public domain B.navez CC BY-SA 3.0

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BY-SA Creative Commons Attribution-ShareAlike · **IRRI** International Rice Research Institute · **BY** Attribution condition in a Creative Commons licence · **×** botanical hybrid sign in the Citrus name

D1274 · NC State Extension, Plant Toolbox Nasturtium officinale · Watercress

Masparasol CC BY 3.0

D1275 · NC State Extension, Plant Toolbox Citrullus lanatus · Watermelon

Fred Hsu CC BY-SA 3.0

D1276 · NC State Extension, Plant Toolbox Triticum aestivum · Wheat, bread

INRA DIST from France CC BY 2.0 Roger Culos CC BY-SA 3.0

https://commons.wikimedia.org/wiki/File:Bl%C3%A9_tendre_(GRAPELLI)_AO-5-cliche_Jean_Weber_(5)_(23975019962).jpg

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https://commons.wikimedia.org/wiki/File:Triticum_aestivum_subsp._aestivum_MHNT.BOT.2015.2.31.jpg

https://creativecommons.org/licenses/by-sa/3.0/

D1277 · Royal Botanic Gardens, Kew Xanthosoma sagittifolium · Xanthosoma

Obsidian Soul CC BY-SA 4.0 sarang Public domain

D1278 · Royal Botanic Gardens, Kew Opuntia joconostle · Xoconostle

Oscar Alejandro Morales Juárez CC BY-SA 4.0

D1276 · NC State Extension, Plant Toolbox Triticum aestivum · Wheat, bread

INRA DIST from France CC BY 2.0 Roger Culos CC BY-SA 3.0

D1277 · Royal Botanic Gardens, Kew Xanthosoma sagittifolium · Xanthosoma

Obsidian Soul CC BY-SA 4.0 sarang Public domain

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https://commons.wikimedia.org/wiki/File:Triticum_aestivum_subsp._aestivum_MHNT.BOT.2015.2.31.jpg

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D1279 · Royal Botanic Gardens, Kew Smallanthus sonchifolius · Yacón

Edibleoffice CC BY-SA 3.0 NusHub CC BY-SA 3.0

D1280 · Royal Botanic Gardens, Kew Dioscorea rotundata · Yam, white Guinea

Akadeby CC BY-SA 3.0

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D1281 · Royal Botanic Gardens, Kew Ilex paraguariensis · Yerba mate

D1282 · Royal Botanic Gardens, Kew Pouteria sapota · Zapote mamey

USDA Agricultural Research Service Public domain US Centers for Disease Control and Prevention Public domain

USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

D1283 · Royal Botanic Gardens, Kew Cucurbita pepo · Zucchini

Evan-Amos Public domain

D1284 · Royal Botanic Gardens, Kew Macadamia integrifolia · Macadamia

Forest and Kim Starr CC BY 3.0 US

D1285 · Royal Botanic Gardens, Kew Ananas comosus · Pineapple

Renee Comet, National Cancer Institute Public domain Eurico Zimbres CC BY-SA 2.0 BR

D1286 · Royal Botanic Gardens, Kew Litchi chinensis · Lychee

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D1287 · Royal Botanic Gardens, Kew Brassica rapa · Bok choy

spurekar CC BY 2.0

D1288 · Royal Botanic Gardens, Kew Musa cooking cultivars · Plantain, cooking banana

D1289 · Royal Botanic Gardens, Kew Hordeum vulgare · Barley

Cliff from Arlington, Virginia, USA CC BY 2.0 Sanjay Acharya CC BY-SA 4.0

D1290 · Royal Botanic Gardens, Kew Cucurbita moschata · Butternut squash

George Chernilevsky Public domain

USA: United States of America Identifies the country or jurisdiction of the source, price or institution.

D1291 · Royal Botanic Gardens, Kew Pyrus communis · Pear, European

Keith Weller Public domain

Reading a citation and returning to the passage

A reference leads to the note that belongs to that particular passage.

Select a bracketed code in a lesson. The source note gives the record title and identifies the passage that called it. Select “Return to passage” beneath that note to resume reading. The two internal jumps work in the downloaded full PDF.

Try the two links in the telegraph chapter

Electrical pulse and mechanical record

ON THIS PAGE

USDA United States Department of Agriculture · **US** United States · **BY** Attribution condition in a Creative Commons licence · **BY-SA** Creative Commons Attribution-ShareAlike · **USA** United States of America · **PDF** Portable Document Format

Plant atlas

TERMS ON THIS PAGE PDF: Portable Document Format A file format used to preserve the layout of a document when it is shared or printed.

Andy and mel: Casa Beban photograph

Ushuaia Tourism: Casa Beban

Library of Congress: Highsmith interior. Catalogue states no known publication

Tenement Museum: Lucas Glockner, the 1863 building and shared rear-yard

NYC Health: drinking-water tanks, pumped filling and inspection information.

American Red Cross · Make a Plan · contacts and practice.

TERMS ON THIS PAGE NYC: New York City The city named in the source or location record.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Morse-Vail key · EM.181411 · 1844 · Smithsonian, image CC0.

24 May message · LOC, MSS33670, box 71, folder 009.

Souvenir tape · 25 May 1844 · Smithsonian, image CC0.

Smithsonian register EM.181670 · coil, lever and paper drive.

FEMA ICS 213, version 3 · message, reply, role, date, time.

TERMS ON THIS PAGE EM: Smithsonian electrical collection identifier In the telegraph-key record, EM.181411 is the museum catalogue identifier for the object.

CC0: Creative Commons Zero A public-domain dedication by which a rights holder waives rights to the extent legally possible.

LOC: Library of Congress The United States national library, which holds the cited photograph or manuscript.

FEMA: Federal Emergency Management Agency The United States agency that provides the cited emergency-preparedness guidance.

ICS: Incident Command System A standard way of assigning responsibilities and coordinating an incident response.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

ITU-R M.1677-1 · Annex 1, sections 1-2 · code and timing.

Dirección Nacional de Migraciones: El Hotel

Provincia de Buenos Aires: La Gran Inmigración, material para estudiantes

Silvinarossello: Vista externa del ex Hotel de Inmigrantes, Buenos Aires

ON THIS PAGE

NYC New York City · **CC0** Creative Commons Zero, a public-domain dedication tool · **LOC** Library of Congress · **FEMA** Federal Emergency Management Agency · **ICS** Incident Command System

SINAGIR: Qué hacer después de una inundación

TERMS ON THIS PAGE ITU-R: International Telecommunication Union Radiocommunication Sector The body responsible for the cited radio-frequency and propagation recommendations.

SINAGIR: Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil Argentina's national system for disaster risk management and civil protection.

SINAGIR: Plan Familiar de Emergencias

Argentine gas regulator: Monóxido de carbono

CDC: How to Create an Emergency Water Supply, 27 June 2025

Industrias Soch: Bidón 10 litros - AGUA

TERMS ON THIS PAGE SINAGIR: Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil Argentina's national system for disaster risk management and civil protection.

CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

Banco de la Nación Argentina: Cotización Billetes

DD Hammocks: tarp product warnings, Spanish

IFRC: The IFRC Shelter Kit, 2010

Jomegat: Pole tarp and rope shelter 4855.JPG

Administración de Parques Nacionales: Campamentos

TERMS ON THIS PAGE DD Hammocks: DD Hammocks The manufacturer's trading name used to identify the cited shelter and setup instructions.

IFRC: International Federation of Red Cross and Red Crescent Societies The humanitarian federation credited with the cited guidance.

JPG, Joint Photographic Experts Group The group whose name identifies a widely used photographic image-compression format. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

DD Hammocks: Setting up your DD Tarp

Sailrite Fabric Calculator: Tarp Tips

Telas Once: Silver impermeable, CABA

GEAR AID: Which Sealant Should I Use?

CABA: Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area.

Codisur: Tarp impermeable 3 × 3 m, SKU 8070

Andrés Bonafina: Usina del Arte, 21 September 2014

ON THIS PAGE

SINAGIR Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil · **IFRC** International Federation of Red Cross and Red Crescent Societies · **JPG** JPEG image filename extension · **CABA** Ciudad Autónoma de Buenos Aires · **m** metre, a length unit · **×** multiplied by

Buenos Aires City: history of Usina del Arte

Código Alimentario Argentino, Chapter XII

AySA: cleaning and disinfecting a household tank

TERMS ON THIS PAGE SKU: Stock keeping unit A seller’s code for identifying a product or variant in inventory.

CABA, Ciudad Autónoma de Buenos Aires The autonomous city of Buenos Aires, a distinct jurisdiction within the wider metropolitan area. AySA, Agua y Saneamientos Argentinos The water and sanitation provider named in the Buenos Aires context. m, Metre The base unit of length in the International System of Units. D + number, Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

Argentina: efficient household heating

Hobbycraft: sewing a draught excluder

Las Mil Telas: cotton calico, 1.50 m wide

m: Metre The base unit of length in the International System of Units.

Argentina: efficient household heating

Argentine gas regulator: Monóxido de carbono

SINAGIR: Plan Familiar de Emergencias

Hobbycraft: sewing a draught excluder

Las Mil Telas: cotton calico, 1.50 m wide

Banco Nación: exchange-rate table

Xiaomi: 10000mAh Mi Power Bank 3 Ultra Compact specifications

Mega Cuper: mini USB LED lamp

CDC: carbon monoxide prevention

CDC: creating and storing an emergency water supply

Dario Alpern: aljibe at Museo Molino Forclaz

TERMS ON THIS PAGE USB: Universal Serial Bus A standard family of connections used to carry data or power between devices.

LED, Light-emitting diode An electronic component that emits light when electric current passes in its conducting direction. CDC, Centers for Disease Control and Prevention The United States public health agency credited with the cited information. D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

National heritage register: Molino Forclaz ensemble

Soch: Argentine-made 20 L water bidón with tap

ON THIS PAGE

m metre, a length unit · **SINAGIR** Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil · **USB** Universal Serial Bus, the wired interface used for data and device power · **LED** Light-emitting diode · **L** litre, a volume unit

TERMS ON THIS PAGE CDC: Centers for Disease Control and Prevention The United States public health agency credited with the cited information.

Belelli and Vázquez: captación de agua de lluvia

National agriculture programme: aljibes in Vera, Santa Fe

CNEA: water-filter research near Ingeniero Jacobacci

TERMS ON THIS PAGE AySA: Agua y Saneamientos Argentinos The water and sanitation provider named in the Buenos Aires context.

CNEA, Comisión Nacional de Energía Atómica Argentina's national atomic energy commission, credited with the environmental sampling research. L, Litre One cubic decimetre of volume, or one thousand millilitres. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

CDC: making water safe in an emergency

National Health Ministry: BEN 757, section VII.6

CNEA, Comisión Nacional de Energía Atómica Argentina's national atomic energy commission, credited with the environmental sampling research. BEN, Boletín Epidemiológico Nacional Argentina's national epidemiological bulletin reporting disease surveillance information.

SINAGIR: precautions during intense rain

Historic England: inspecting and repairing rainwater systems

SINAGIR, Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil Argentina's national system for disaster risk management and civil protection. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Megaflex / Weber: Megafácil technical sheet

Tecnoperfil: Megaflex adhesive membrane, 10 cm × 10 m

Banco Nación: displayed banknote exchange rates

US Department of Energy: stormwater gutters and downspouts

USGS: Facing the Great Disaster, 2006

TERMS ON THIS PAGE cm: Centimetre A unit of length equal to one hundredth of a metre.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

George Lawrence: San Francisco after the earthquake

OSHA: Emergency Preparedness, Getting Started

CDC: How to Create an Emergency Water Supply

ON THIS PAGE

CNEA Comisión Nacional de Energía Atómica · **SINAGIR** Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil · **cm** centimetre, 0.01 metre · **m** metre, a length unit · **×** multiplied by · **US** United States · **USGS** United States Geological Survey

FEMA: Incident Objectives, ICS 202 v3.1

FEMA P-1019: Emergency Power Systems, 2014

TERMS ON THIS PAGE OSHA: Occupational Safety and Health Administration The United States workplace-safety agency.

EIA: Measuring Electricity

SAM: Battery Storage model documentation

Gervacio Rosales: Mercado Central, Nave 2 photograph

INTA: La huerta orgánica familiar

Universidad Nacional de Luján: Huerta-Jardín manual

LTrus: Buenos Aires community garden

TERMS ON THIS PAGE EIA: Energy Information Administration The United States agency publishing energy statistics and explaining energy units.

SAM: System Advisor Model The energy modelling software whose documentation describes battery storage.

INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

INTA: Mi casa, mi huerta

INTA: growing fresh food in southern Patagonia

Teagasc, Ireland: growing tomatoes

University of Minnesota Extension: raised-bed gardens

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

Centro de Materiales: Nº 21 builder's line, 10 m

Sra. Huerta: compost, 20 L

Harlan P. Banks: Liberty Hyde Bailey, NAS memoir

L. H. Bailey: Manual of Gardening, second edition, 1910

Liberty Hyde Bailey: portrait published in 1915

NC State Extension: instructions for tracking the garden harvest

TERMS ON THIS PAGE NAS: National Academy of Sciences The United States scientific academy publishing the cited biographical memoir.

USA: United States of America Identifies the country or jurisdiction of the source, price or institution.

ON THIS PAGE

FEMA Federal Emergency Management Agency · **ICS** Incident Command System · **SAM** System Advisor Model · **INTA** Instituto Nacional de Tecnología Agropecuaria · **m** metre, a length unit · **L** litre, a volume unit · **NAS** National Academy of Sciences

NC State: North Carolina State University The United States university credited with horticultural or extension information.

L: Litre One cubic decimetre of volume, or one thousand millilitres.

TERMS ON THIS PAGE NAS: National Academy of Sciences The United States scientific academy publishing the cited biographical memoir.

USA: United States of America Identifies the country or jurisdiction of the source, price or institution.

NC State Extension: counting or weighing vegetables

Mercado Central: wholesale fruit and vegetable price records

Library of Congress: pamphlet-stitch teaching sheet

Systel Argentina: Clipse capacities, resolution and tare

Librería Flash: A4 paper, 80 g/m², 500 sheets

TERMS ON THIS PAGE NC State: North Carolina State University The United States university credited with horticultural or extension information.

Banco Nación: displayed banknote exchange table

De Francesco: Argentine scale-price comparison

University of Minnesota Extension: harvest and vegetable storage

ANMAT: food traceability and recall records

Argentina: updated MERCOSUR food-labelling provisions

TERMS ON THIS PAGE ANMAT: Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology.

MERCOSUR: Mercado Común del Sur The Southern Common Market, a South American regional bloc relevant to the cited provisions.

La Matanza: locally developed garden planner

INTA: agroclimatic information tools

European Food Safety Authority: use-by and best-before dates

ANMAT: Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology.

EU: European Union The political and economic union responsible for the European reference or rule cited.

US FDA: reducing food waste while retaining food safety

INTI and INTA Córdoba: domestic compost production

Colorado State University Extension: Making Compost

ON THIS PAGE

g gram, 0.001 kilogram · **m²** square metre, an area unit · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **MERCOSUR** Mercado Común del Sur · **INTA** Instituto Nacional de Tecnología Agropecuaria · **US** United States · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **INTI** Instituto Nacional de Tecnología Industrial

TERMS ON THIS PAGE US: United States of America Identifies the country or jurisdiction of the source, price or institution.

FDA, Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here. NC State, North Carolina State University The United States university credited with horticultural or extension information. INTI, Instituto Nacional de Tecnología Industrial Argentina's industrial technology institute. It provides technical and measurement services. INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

INTI: Manual de buenas prácticas para producir compost hogareño

Pavel Ševela: Compost bin (2), documentary photograph

UNNE, Instituto Agrotécnico: household compost management

Buenos Aires City: Guía de compostaje domiciliario

US EPA: Composting at Home

TERMS ON THIS PAGE INTI: Instituto Nacional de Tecnología Industrial Argentina's industrial technology institute. It provides technical and measurement services.

UNNE: Universidad Nacional del Nordeste Argentina's National University of the Northeast.

BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. US, United States of America Identifies the country or jurisdiction of the source, price or institution.

EPA: Environmental Protection Agency The United States environmental authority responsible for the cited material.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

US EPA: compostable and biodegradable plastics

University of Florida IFAS: wire compost bin

Ferretería Vazquez: 1.20 m by 5 m galvanised mesh roll

Banco Nación: dated banknote exchange table

Don Agro: TFA analogue compost thermometer

EPA: Environmental Protection Agency The United States environmental authority responsible for the cited material.

BY-SA, Creative Commons Attribution-ShareAlike Reuse requires attribution. Shared adaptations carry the specified licence or a compatible one under its terms. IFAS, Institute of Food and Agricultural Sciences The University of Florida institute that provides agricultural research and extension.

ON THIS PAGE

FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **INTI** Instituto Nacional de Tecnología Industrial · **UNNE** Universidad Nacional del Nordeste · **US** United States · **EPA** Environmental Protection Agency, United States · **BY-SA** Creative Commons Attribution-ShareAlike · **IFAS** Institute of Food and Agricultural Sciences · **m** metre, a length unit

TFA: TFA Dostmann The name of the instrument manufacturer credited with the compost thermometer; its model number identifies the product.

Ireland EPA: A Household Guide to Composting, third edition

TFA Dostmann: compost thermometer 19.2008

TERMS ON THIS PAGE UNNE: Universidad Nacional del Nordeste Argentina's National University of the Northeast.

TFA, TFA Dostmann The name of the instrument manufacturer credited with the compost thermometer; its model number identifies the product. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Comodoro Rivadavia: municipal composting guidance

INTI, Instituto Nacional de Tecnología Industrial Argentina's industrial technology institute. It provides technical and measurement services. IFAS, Institute of Food and Agricultural Sciences The University of Florida institute that provides agricultural research and extension. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Argentina Ministry of Health: Healthy eating graphic and GAPA

Verum: Potato harvest near Fulda, Germany, 29 August 2016

INASE: certification stamps and potato sale authorisations

La Matanza / INTA EEA AMBA: potato planner

TERMS ON THIS PAGE GAPA: Guías Alimentarias para la Población Argentina Argentina's national dietary guidelines.

INASE: Instituto Nacional de Semillas Argentina's national seed institute, responsible for seed and cultivar records.

EEA: Estación Experimental Agropecuaria An agricultural experiment station. The following place name identifies the station in the Argentine institute's network.

AMBA: Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area. The boundary depends on the definition and date cited.

Teagasc, Ireland: Potato planting and cultivation

INTA: subsurface drip irrigation for potatoes in Traslasierra

INTA: Manual de cultivos para la huerta orgánica familiar

Purdue: Grain Fill Stages in Corn

EEAOC: Cultivo de poroto, Avance 42-4, December 2021

EEAOC: Estación Experimental Agroindustrial Obispo Colombres The agroindustrial experiment station in Tucumán, Argentina.

ON THIS PAGE

EPA Environmental Protection Agency, United States · **GAPA** Guías Alimentarias para la Población Argentina · **INASE** Instituto Nacional de Semillas · **INTA** Instituto Nacional de Tecnología Agropecuaria · **EEA** Estación Experimental Agropecuaria · **AMBA** Área Metropolitana de Buenos Aires Buenos Aires and its surrounding metropolitan area · **EEAOC** Estación Experimental Agroindustrial Obispo Colombres

UC Davis: Potato, Early Crop

Teagasc, Ireland: Condensation in potato stores

University of Minnesota: Harvesting and storing home garden vegetables

Finnish Food Authority: Glycoalkaloids in potatoes

Purdue / Iowa State: Managing Dry Grain in Storage, AED-20

TERMS ON THIS PAGE EEAOC: Estación Experimental Agroindustrial Obispo Colombres The agroindustrial experiment station in Tucumán, Argentina.

UC: University of California The university system whose researchers or extension offices are cited.

AED: Automated external defibrillator A device designed to analyse heart rhythm and prompt an appropriate response.

Wile, Finland: Wile 55 manufacturer guidance

University of Minnesota: Proper spring grain drying and storage

EFSA: Lectins in food and undercooked beans

Colorado State University: High Elevation Food Preparation Guide

USDA FoodData Central: SR Legacy data download

Mercado Central de Buenos Aires: November 2026 wholesale vegetables

TERMS ON THIS PAGE EFSA: European Food Safety Authority The European Union body that assesses food-related risks.

USDA, United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here. SR, Standard Reference The name of the United States agriculture department's legacy food composition dataset.

Don Agro: Wile 55 grain moisture meter, code 257

Banco de la Nación Argentina: banknote exchange table

Río Negro: Sembrar local planting calendar

Bean appreciator: Black beans, uncooked, 27 November 2024

Photograph: Rhode Island Red hens, New York

INTA Formosa: heat and poultry management, 2025

University of Minnesota: meat chickens

University of Minnesota: chicks and pullets

INTA Chubut: sheep, steppe and wet meadows

SENASA: family-agriculture goat health guide

INTA: dairy-goat production, management and health

ON THIS PAGE

UC University of California · **EFSA** European Food Safety Authority · **USDA** United States Department of Agriculture · **INTA** Instituto Nacional de Tecnología Agropecuaria · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

Teagasc: value of trained dairy staff, 2026

SENASA Resolution 1035/2024: pig feed controls

SENASA Resolution 1699/2019, updated text

SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

SENASA: register or update RENSPA

SENASA: animal transit document

USDA APHIS: biosecurity basics

SENASA: biosecurity and early reporting, 2026

University of New Hampshire: small-flock health

TERMS ON THIS PAGE SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

RENSPA: Registro Nacional Sanitario de Productores Agropecuarios Argentina's register that identifies agricultural producers and their production sites for sanitary oversight.

USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

APHIS: Animal and Plant Health Inspection Service The United States agriculture service responsible for animal and plant health.

Angelitos del Norte: dated feed price list

Banco Nación: exchange comparison

Sanitarios Bonomi: 500 L tank listing

SENASA: eggs and egg products

Santa Fe ASSAL: handling higher-risk foods

University of Minnesota: raising chickens for eggs

EU laying-hen welfare: Directive 1999/74/EC

ASSAL: Agencia Santafesina de Seguridad Alimentaria The food-safety agency of Santa Fe Province, Argentina.

NEA: Noreste Argentino Northeastern Argentina. The abbreviation locates the region discussed.

US: United States of America Identifies the country or jurisdiction of the source, price or institution.

EU: European Union The political and economic union responsible for the European reference or rule cited.

ON THIS PAGE

SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **RENSPA** Registro Nacional Sanitario de Productores Agropecuarios · **USDA** United States Department of Agriculture · **APHIS** Animal and Plant Health Inspection Service · **L** litre, a volume unit · **ASSAL** Agencia Santafesina de Seguridad Alimentaria · **EU** European Union

EC: European Community The suffix identifies the European Community legal instrument in the directive number.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

INTA Formosa: heat and poultry management, 2025

INTA Chubut: sheep, steppe and wet meadows

University of Minnesota: raising chickens for eggs

EU laying-hen welfare: Directive 1999/74/EC

TERMS ON THIS PAGE SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

ASSAL: Agencia Santafesina de Seguridad Alimentaria The food-safety agency of Santa Fe Province, Argentina.

INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

Photograph: Wash Common Farm, England

INTI CIRSOC: structural regulation service

Argentina Resolution 11/2026: CIRSOC approval

Avícola Rosarossa: 10 kg feeder quotation

CIRSOC: Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles The Argentine body associated with national structural safety regulations.

INTA: building a mobile poultry house

University of Vermont: efficient wash/pack planning

Argentina: BPA amendment, Resolution 22/2025

University of Vermont: hygienic design

University of Vermont: container landing platforms

TERMS ON THIS PAGE CIRSOC: Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles The Argentine body associated with national structural safety regulations.

BPA: Buenas Prácticas Agrícolas Good agricultural practices. In the Argentine farming context these are measures for producing and handling crops responsibly.

University of Vermont: wash/pack floor design

IGN: POSGAR 07 national geodetic frame

INTA Balcarce: establishment-scale cartography

ON THIS PAGE

EC European Community, in this legal citation · **INTA** Instituto Nacional de Tecnología Agropecuaria · **EU** European Union · **INTI** Instituto Nacional de Tecnología Industrial · **CIRSOC** Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles · **kg** kilogram, a mass unit · **BPA** Buenas Prácticas Agrícolas Good agricultural practices · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **POSGAR** Posiciones Geodésicas Argentinas

Mario Martin Sbarbaro: Puerto Alvear, Entre Ríos

IGN: MDE-Ar version 2.1 elevation model

TERMS ON THIS PAGE IGN: Instituto Geográfico Nacional Argentina's national mapping agency and the source for the cartographic or survey reference.

POSGAR: Posiciones Geodésicas Argentinas Argentina's national geodetic reference framework for survey coordinates.

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. MDE-Ar, Modelo Digital de Elevaciones de la República Argentina A gridded elevation model published by Argentina's national mapping institute.

INTA: SisINTA georeferenced soil profiles

Buenos Aires Province: water-approval framework

Córdoba APRHI: exploitation of water resources

University of Missouri: livestock and poultry sites

SMN: climate normals, 1991-2020

Teagasc: managing the farmyard

APRHI: Administración Provincial de Recursos Hídricos Córdoba's provincial water-resources authority.

SMN, Servicio Meteorológico Nacional Argentina's national weather service. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Argentina: BPA, Joint Resolution 22/2025

INTA Reconquista: Y porá water-planning platform

USDA / Lance Cheung: cattle water point, South Carolina

Nebraska Extension: feed dry-matter conversions

TERMS ON THIS PAGE BPA: Buenas Prácticas Agrícolas Good agricultural practices. In the Argentine farming context these are measures for producing and handling crops responsibly.

University of Minnesota: measuring forage quality

University of Florida: forage moisture testing

NC State: conserving hay and silage

SENASA: animal feed and registered products

Oregon State: minerals for mixed livestock

INTA: livestock management in summer

ON THIS PAGE

IGN Instituto Geográfico Nacional, Argentina's national geographic institute · **MDE-Ar** Modelo Digital de Elevaciones de la República Argentina · **INTA** Instituto Nacional de Tecnología Agropecuaria · **APRHI** Administración Provincial de Recursos Hídricos Córdoba's provincial water-resources authority · **SMN** Servicio Meteorológico Nacional · **BPA** Buenas Prácticas Agrícolas Good agricultural practices · **USDA** United States Department of Agriculture · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

SENASA, Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods. INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

Kansas State: sizing a livestock watering system

Don Agro: Crossio 3/4-inch valve and float kit

Construcción Vía Web: PN10 PEAD rolls

Don Agro: Vulplast circular 500 L drinker

Banco Nación: banknote exchange-rate display

TERMS ON THIS PAGE PN10: Nominal pressure designation, PN 10 The pipe or fitting's nominal pressure class. Actual service limits depend on material and operating conditions.

PEAD: Polietileno de alta densidad High-density polyethylene, a plastic used for pipe and other durable products.

L, Litre One cubic decimetre of volume, or one thousand millilitres. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

INTA and CREA: a livestock water plan

INTA: environmental management of feedlots

University of Minnesota: manure sampling and analysis

Teagasc: nutrient and fertiliser management

INTA Córdoba: spatial manure N and P contributions

CREA: Consorcios Regionales de Experimentación Agrícola Argentina's network of regional farm experimentation groups, credited with the livestock planning source.

USDA NRCS: Nutrient Management, practice 590

Nutrition, Food Safety & Health | Pressure canner and canning jars

NCHFP | Ensuring Safe Canned Foods

SENASA | Authorised food products and establishments

SENASA | Botulism and preserved vegetables, 3 February 2026

TERMS ON THIS PAGE USDA: United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here.

NRCS: Natural Resources Conservation Service The United States agriculture agency that provides soil and land-conservation information.

ON THIS PAGE

PEAD Polietileno de alta densidad High-density polyethylene, a plastic used for pipe and other durable products · **L** litre, a volume unit · **INTA** Instituto Nacional de Tecnología Agropecuaria · **CREA** Consorcios Regionales de Experimentación Agrícola · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service · **NCHFP** National Center for Home Food Preservation · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

NCHFP: National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

US National Agricultural Library | Historical pressure canners

ANMAT | Who must obtain a food-handler credential

NCHFP | Freezing green, snap or wax beans

NCHFP | Blanching vegetables

SENASA, Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods. ANMAT, Administración Nacional de Medicamentos, Alimentos y Tecnología Médica Argentina's agency for medicines, food and medical technology.

NCHFP, National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

NCHFP | Packaging and labelling foods

Argentina Health | How to store and preserve food

NCHFP | Snap and Italian beans: green and wax

NCHFP | Using Pressure Canners

NCHFP | Cooling jars and testing seals

TERMS ON THIS PAGE NCHFP: National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here.

Gafa | FGHF freezer manufacturer operating manual

Leogar | Gafa FGHF200B-M advertised price

Banco de la Nación Argentina | Banknote exchange board

FGHF / FGHF200B-M: Gafa freezer model designation The letter-number marking identifies a product family or variant. Use the specific model's operating manual.

FDA | Food and water safety during power outages and floods

Food Safety Authority of Ireland | Temperature Control

TERMS ON THIS PAGE FDA: Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here.

EU, European Union The political and economic union responsible for the European reference or rule cited. SENASA, Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

INTA Alto Valle | Apple rootstocks, 2018

ON THIS PAGE

US United States · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **NCHFP** National Center for Home Food Preservation · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **INTA** Instituto Nacional de Tecnología Agropecuaria

SENASA | Nursery and propagation-material frequently asked questions

Gervacio Rosales | Espaldera en otoño, 26 April 2014

Luis Iannamico, INTA | Cultivo del nogal, 2015

INTA | Nut-crop zoning and productive development platform

University of Minnesota Extension | Growing apples

Teagasc, Ireland | Commercial apple production

SENASA | Electronic plant transit document, DTV-e

EU, European Union The political and economic union responsible for the European reference or rule cited. INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

SENASA, Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods. DTV-e, Documento de Tránsito Vegetal electrónico Argentina's electronic document for the movement of regulated plant material. D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

INTA | New poplar clone for windbreaks, 16 July 2024

CIEFAP | Forest windbreaks in Patagonia

Savannainstitute | Young three-row windbreak in Illinois

USD: United States dollar The currency used for a price or conversion. One dollar contains one hundred cents.

CIEFAP, Centro de Investigación y Extensión Forestal Andino Patagónico The forest research and extension centre for the Andean Patagonian region. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

USDA NRCS | Windbreak/Shelterbelt Establishment and Renovation, 380, July 2021

Teagasc, Ireland | Strawberries: greenhouse salad crops

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. EU, European Union The political and economic union responsible for the European reference or rule cited. SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria Argentina's authority for animal and plant health and for the safety and quality of agricultural foods.

DTV-e, Documento de Tránsito Vegetal electrónico Argentina's electronic document for the movement of regulated plant material. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Enrique Goites, INTA | Manual de cultivos para la Huerta Orgánica Familiar, 2008

ON THIS PAGE

SENASA Servicio Nacional de Sanidad y Calidad Agroalimentaria · **INTA** Instituto Nacional de Tecnología Agropecuaria · **DTV-e** Documento de Tránsito Vegetal electrónico, Argentine plant-transit documentation · **CIEFAP** Centro de Investigación y Extensión Forestal Andino Patagónico · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service

INTA | Aromáticas en la huerta orgánica, 2nd edition, 2008

Royal Horticultural Society | How to grow mint

AndyScott | Museum of the Home, Herb Garden

Royal Botanic Gardens, Kew | Salvia rosmarinus

Royal Horticultural Society | How to grow basil

University of Minnesota Extension | Growing herbs in home gardens

Royal Horticultural Society | Herbs: growing

INTA | Presentan un nuevo cultivar de romero con sello INTA

Buenos Aires Province | Manual de huertas, 2022

National Center for Home Food Preservation | Herbs

INTA | Mi casa, mi huerta

University of Maryland Extension | Growing vegetables in raised beds

University of Minnesota Extension | Raised bed gardens

NOA: Noroeste Argentino Northwestern Argentina. The abbreviation locates the region discussed.

NEA, Noreste Argentino Northeastern Argentina. The abbreviation locates the region discussed. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Buenos Aires Province | Manual de huertas, 2022

INTA | Mi casa, mi huerta

University of Minnesota Extension | Raised bed gardens

University of Maryland Extension | Growing vegetables in raised beds

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

INTA | Huertas: tools and irrigation references

Easy Argentina | Landiner Huerta, 50 L, reference 1360339

Banco Nación | Banknote exchange reference

SENASA: Registro Nacional Sanitario de Productores Agropecuarios

SENASA: Documento de Tránsito Electrónico

Carlos Antonio Writte: sheep in Patagonia

University of Maryland Extension: pasture stocking rate

Original worked examples: livestock, soil cover and gears

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **L** litre, a volume unit · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

University of California ANR: sheep on small acreage

European Union: Council Directive 98/58/EC

ANR: Agriculture and Natural Resources The University of California division offering the cited extension guidance.

EC, European Community The suffix identifies the European Community legal instrument in the directive number. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

INTA: Pergamino cover-crop experimental platform

FAUBA: options for terminating service crops

USDA NRCS Indiana: Cover Crop Termination

Mr.1032: cover crop being crimped

Royal Horticultural Society: mulches and mulching

FAUBA: Facultad de Agronomía de la Universidad de Buenos Aires The University of Buenos Aires faculty responsible for the cited agronomic information.

INTA: cover crops against wind erosion

Kansas State: soil-health field assessment

INTA: cover crops and weed control in soybean

INTA Alto Valle: indices of harvest maturity

Gervacio Rosales: Espaldera en otoño

Original orchard and pantry worked examples

European Commission: general food-law requirements

USDA FAS: Argentina Fresh Deciduous Fruit Annual

Michigan State University: checking apple maturity

SENASA: Granny Smith harvest decision, Alto Valle

FAS: Foreign Agricultural Service The United States Department of Agriculture service that publishes international agricultural information.

STEC: Systel Croma scale listing

Banco de la Nación Argentina: currency quotation

Royal Charles Steadman: Granny Smith, POM00002046

TERMS ON THIS PAGE STEC: STEC retailer The trading name of the seller whose dated equipment price is cited.

ON THIS PAGE

ANR Agriculture and Natural Resources · **EC** European Community, in this legal citation · **INTA** Instituto Nacional de Tecnología Agropecuaria · **FAUBA** Facultad de Agronomía de la Universidad de Buenos Aires · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service · **FAS** Foreign Agricultural Service · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria

USDA National Agricultural Library: Pomological Watercolors

University of Minnesota: growing apples

Iowa State University: apple cultivation and propagation

Irving Rusinow: pantry, Haskell County, Kansas

USDA Office of Information: Storing Home Canned Foods

ANMAT: allergen labelling

Todo Estantes: TE-ESTANTERIA-2016

ANMAT: Manual de manipulación segura de alimentos

Argentina: storing and conserving foods

NCHFP: storing home-canned foods

NCHFP: Ensuring Safe Canned Foods

NCHFP: Suitable Containers, Covers and Weights

NCHFP: Packaging and Storing Dried Foods

SENASA: Botulism risk in preserved vegetables, 3 February 2026

Original worked designs, quantities and operating records

FDA: Safe Food Handling

FDA: Food and Drug Administration The United States agency responsible for the food or medical product guidance cited here.

NCHFP: Sauerkraut

Penn State Extension: Fermentation, Sauerkraut and Pickles

W. W. Cozzens fruit drying, San Jose, 1888

INTA La Rioja: solar drying training, 20 March 2025

SDSU Extension: Dehydrating Apples, 23 October 2023

University of California: Apples, drying and dryness checks

SDSU: South Dakota State University The university extension programme credited with the cited preservation guidance.

UConn Extension: Dehydrate Some Local Apples, 8 December 2016

TERMS ON THIS PAGE SDSU: South Dakota State University The university extension programme credited with the cited preservation guidance.

ON THIS PAGE

USDA United States Department of Agriculture · **ANMAT** Administración Nacional de Medicamentos, Alimentos y Tecnología Médica · **NCHFP** National Center for Home Food Preservation · **SENASA** Servicio Nacional de Sanidad y Calidad Agroalimentaria · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **INTA** Instituto Nacional de Tecnología Agropecuaria · **SDSU** South Dakota State University

UConn: University of Connecticut The United States university credited with the source.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Penn State Extension: Dried Apples

TERMS ON THIS PAGE D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Vassilik: Food dehydrator photograph

FDA: Water Activity in Foods, technical guide 39

INTA Mendoza: pilot plant for dehydrating fruit and vegetables

ByEG, San Miguel: Catania VDP-10AI listing

ByEG: ByEG retailer The seller's trading name on the cited price listing.

NCHFP, National Center for Home Food Preservation The University of Georgia centre that publishes the food-preservation method cited here. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Original worked designs, quantities and operating records

NCHFP: Packaging and Storing Dried Foods

TERMS ON THIS PAGE INTA: Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers.

INTA La Rioja: Construction of a fruit and vegetable drying module, August 2025

Montana State University: Drying Fruits

Banco de la Nacion Argentina: banknote quotations

TERMS ON THIS PAGE ByEG: ByEG retailer The seller's trading name on the cited price listing.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Original worked designs, quantities and operating records

Montana State University: Drying Fruits

ByEG, San Miguel: Catania VDP-10AI listing

Banco de la Nacion Argentina: banknote quotations

NARA 285778: Root cellar with ventilation shaft

UC Davis: Golden Delicious apple storage

TERMS ON THIS PAGE NARA: National Archives and Records Administration The United States agency preserving the archival record or photograph.

ON THIS PAGE

FDA Food and Drug Administration, the United States regulatory agency named in the dated source · **INTA** Instituto Nacional de Tecnología Agropecuaria · **NCHFP** National Center for Home Food Preservation · **NARA** National Archives and Records Administration · **UC** University of California

UC Davis: Pumpkin and Winter Squash

USDA FSIS: Thermometers when smoking meat

TERMS ON THIS PAGE UC: University of California The university system whose researchers or extension offices are cited.

USDA, United States Department of Agriculture The federal department responsible for the agricultural, food and research programmes cited here. FSIS, Food Safety and Inspection Service The United States Department of Agriculture service responsible for the food-safety guidance cited here.

UC Davis: Carrot storage

UC Davis: Dry onion storage

INTA, Instituto Nacional de Tecnología Agropecuaria Argentina's agricultural research and extension institute. It publishes field trials and advice for growers. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

FSIS: Food Safety and Inspection Service The United States Department of Agriculture service responsible for the food-safety guidance cited here.

USDA FSIS: Refrigerating meat after smoking

Iowa State University Extension: Crop rotation in the vegetable garden

New Mexico State University: Nitrogen fixation by legumes, Guide A-129

Illinois Extension: Sow, grow, rotate

Buenos Aires Ciudad: ten winter-garden recommendations

Original eight-bed rotation, space and labour calculations

USDA photograph: soybean root nodules

Flora de Filipinas | Atlas II, plate 407

P5 · Related documented chapter source

Dandelion structures

P6 · Related documented chapter source

Dandelion leaf cookery

Cleaning produce

was checked in detailed primary-page search-index text after a direct-access failure. Existing page 145 is retained. Source ranges describe the published account, not the From READ A RECIPE'S MEASURES LITERALLY

Kitchen units

was checked in detailed primary-page search-index text after a direct-access failure. Existing page 145 is retained. Source ranges describe the published account, not the From ORGANISE THE TWO COOKING STAGES

ON THIS PAGE

UC University of California · **USDA** United States Department of Agriculture · **FSIS** Food Safety and Inspection Service

P7 · Related documented chapter source

Wild-garlic confusion

P17 · Related documented chapter source

Suspected plant poisoning

Ramsons flower structure

Lily-of-the-valley

Autumn crocus seasonality

Container cultivation

Drying culinary herbs

P8 · Related documented chapter source

Burdock growth and harvest

P9 · Related documented chapter source

Burdock root cookery

Burdock botanical cross-check

P10 · Related documented chapter source

Reading a study method

P11 · Related documented chapter source

Licorice cultivation and structure

Names and preparations

Interpreting results

A real evidence-and-risk example

Kew: Salvia rosmarinus, Plants of the World Online

sib.gob.ar

biblioteca.inia.cl

Position and uncertainty

Algarrobo research in context

INIA: Instituto de Investigaciones Agropecuarias Chile's agricultural research institute in the cited crop reference.

Regional records and their limits

Citing a dynamic database

uses indexed repository metadata, D90 uses detailed indexed floristic descriptions after direct-access failures. The locality drawing is fictional. Existing photographs are From ACCESS, ATTRIBUTION AND EVIDENCE

P12 · Related documented chapter source

Licorice leaf and rhizome

rechecks the licorice source used in Batch 62. The extraction diagram uses chosen masses to explain ratios, it supplies no solvent recipe, therapeutic dose or potency claim. From KEEP THE PLANT AND PRODUCT DISTINCT

rechecks the licorice source used in Batch 62. The extraction diagram uses chosen masses to explain ratios, it supplies no solvent recipe, therapeutic dose or potency claim. From READ BENEFIT AND HARM TOGETHER

Product comparison and use record

Garlic: form and harms

Echinacea: define the outcome

Ginger: preparation and setting

Native and total extract ratios

P13 · Related documented chapter source

Annual-moringa cultivation

Moringa leaf, flower and pod

Clean produce handling

Clarity is not disinfection

P14 · Related documented chapter source

Murta in Argentina

Flower and fruit anatomy

Murta garden context

Semi-ripe cuttings

Published orchard system

rechecks the fresh-produce guidance used as D101. The cutting mixture and harvest calculations are chosen examples. Orchard dimensions retain their southern Chile From FROM THE SHRUB TO A CLEAN INGREDIENT

P15 · Related documented chapter source

Orange daylily

Daylily structure

Minnesota division method

Florida planting comparison

Cats and lily exposure

Initial care and escalation

Rinsing and contamination limits

Cleaning around a small wound

Contact face and tape placement

Pressure and circulation

Tetanus assessment

Daily care of a minor cut

Botanical evidence and cautions

Leaf form and crop terminology

Petiole versus leaf blade

Crown, rhizome and roots

Rhubarb freezing procedure

Container suitability

Closure and batch label

Headspace by pack type

Temperature and freezer loading

ACCEPTED NAME

ANDEAN STEWARDSHIP

SHOOT AND PANICLE

GRAIN EXTERIOR

INTERNAL STRUCTURE

STOVETOP METHOD

VOLUME CONVERSIONS

COOKED-FOOD HANDLING

TERMS ON THIS PAGE mL: Millilitre One thousandth of a litre, a unit of volume.

D + number: Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

STOVETOP METHOD

VOLUME CONVERSIONS

COOKED-FOOD HANDLING

RECORD FIELDS

GEOREFERENCING

PHOTOGRAPHIC EVIDENCE

DIAGNOSTIC VIEWS

IMAGE QUALITY

ARGENTINE FLORA

NAMES AND USE CLAIMS

SENSITIVE LOCALITIES

Misleading resemblance

Plant-part hazards

Ecological consequences

Produce hygiene

Delayed symptoms

Poison first aid

Argentina contact

Plant-part relationships

Corm and root structure

Species and leaf form

Corm selection and acridity

Produce preparation

Rourou recipe

Cooling and clean utensils

Reheating leftovers

Status and individual records

Visit intervals and replacement

Field equipment and marking

Whole-plant interpretation

Apple structures

Quality and uncertainty

Regional plant-use context

Knowledge and consent

White algarrobo name

Black algarrobo name

White algarrobo structures

Black algarrobo structures

Seed versus whole-fruit flour

Argentine processing guide

Process control and verification

Raw-flour handling

TERMS ON THIS PAGE g: Gram A unit of mass equal to one thousandth of a kilogram.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Black algarrobo structures

White algarrobo structures

Argentine processing guide

Université Laval | Mercator Arctic map, 1595, 11-c.170-1595-r

Université Laval | Catalogue object 11-c.170-1595-r

Question, observation and inference

Reading a photograph

Transcription and review

Keeping digital copies

Enna Jettick photograph

Attempted mail collection

Museum object and interpretation

Manipulated-photography context

Amish historical context

Technology and community choices

A particular Lancaster quilt

Documented machine piecing

Square piecing

Seam calibration and alignment

Layering and stitch checks

Covering the quilt edge

Tilt and the seasonal cycle

Events and hemispheres

2026 event times

Daylight at an equinox

Fixed-staff observation

Solar-position geometry

Calculation limits

Solar time and clock time

US Naval Observatory, Introduction to Calendars

Mashantucket Pequot Museum, Our Moons

E. G. Richards, Calendars (2012)

Ethiopian Orthodox Tewahedo Church, The Liturgical Year

US Naval Observatory, Leap Years

US Naval Observatory, Astronomical Almanac Glossary

US Naval Observatory, Julian Dates

Library of Congress, 40 Hours, 5 Days (2024)

The Henry Ford, authenticated quotations

Library of Congress, April Fools (2016)

US Naval Observatory, The Date of Easter

Surviving historical results

Cleomedes and assumptions

WGS 84 definition

Satellite laser ranging

TERMS ON THIS PAGE WGS: World Geodetic System 1984 A geodetic reference system used to express and compare geographic coordinates.

laser / LASER: Light amplification by stimulated emission of radiation A device that produces a directional beam of light by stimulated emission.

Measurement uncertainty

Gravity and the geoid

SI speed of light

SI: International System of Units (Système international d’unités) The common measurement system built on units such as the metre, kilogram and second.

Range and instrument models

Adult education and participation

Worked examples and later recall

Observe understanding during practice

Length units

What a memory experiment establishes

Feedback about teaching

A philosophical claim in its own context

ON THIS PAGE

US United States · **WGS** World Geodetic System · **SI** Système international d’unités, the International System of Units

Museum identification of the portrait

The reproduced historical image

Pineal anatomy and neural control

Landmarks of the central nervous system

Descartes: the actual pineal argument

Circadian timing across the body

A measured human response to light

Historical record

Observation context

Authorship and custody

Copies and readability

Paper protection

Fixity and its limits

Entries and corrections

Foodways as cultural evidence

Mediterranean food heritage

Washoku and transmission

Agriculture and altitude

Modern nutrition guidance

A corrected clinical study

TERMS ON THIS PAGE FAO: Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference.

PREDIMED, Prevención con Dieta Mediterránea The name of a Spanish prevention trial studying a Mediterranean dietary pattern. It identifies the study discussed in the citation. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Reading the study statistic

Food hygiene framework

Historical setting and genres

A dialogue and its reception

The reproduced historical object

The Tablet's Latin transmission

Newton: manuscript and dating

Exact wording and editorial views

Reading a primary source

What an editor has changed

The working manual

Moxon’s identity and life dates

A specific nineteenth-century improvement

The reproduced tool plate

The modern reversal procedure

Measurement and its limits

-D338 · primary records and observation protocols · click each title to open the source

Royal Society manuscript catalogue

USA-NPN, How to Observe Handbook (2010)

USA-NPN documentation (11 March 2025)

USA-NPN, Phenophase Definitions v2.0

TERMS ON THIS PAGE USA-NPN: USA National Phenology Network The United States network tracking seasonal biological events such as leaf-out and flowering.

Denny et al., monitoring methods (2014)

USA-NPN Nature’s Notebook FAQ

TERMS ON THIS PAGE et al.: Et alii, et aliae or et alia (and others) In a citation, the expression indicates additional authors whose names are omitted from the shortened reference.

USA-NPN: USA National Phenology Network The United States network tracking seasonal biological events such as leaf-out and flowering.

D368 · historical objects, technical parameters and editorial methods

Galileo, trans. Edward Stafford Carlos (1880)

Linda Hall Library: The Face of the Moon

Museo Galileo: telescope, inventory 2427

Museo Galileo: telescope, inventory 2428

NIST: FIPS 180-4, Secure Hash Standard

Zentralbibliothek Zürich: Basel broadside, 1566

US Naval Observatory: calendars

Mashantucket Pequot Museum: Thirteen Moons

ON THIS PAGE

USA-NPN USA National Phenology Network · **USA** United States of America · **FAQ** Frequently asked questions · **NIST** National Institute of Standards and Technology · **FIPS** Federal Information Processing Standards A United States government standards series for information processing · **US** United States

TERMS ON THIS PAGE NIST: National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references.

FIPS: Federal Information Processing Standards A United States government standards series for information processing.

US, United States of America Identifies the country or jurisdiction of the source, price or institution. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Instituto Geográfico Nacional | Manual de signos cartográficos

THE MET · OBJECT 43.106.1

NATIONAL GALLERIES OF SCOTLAND

NIST · RANDOMIZED BLOCK DESIGNS

NIST · RANDOMIZED DESIGNS

MEKETRE'S GRANARY

TURIN STRIKE PAPYRUS

THE SCRIBES

IRRIGATION LABOUR TABLET

ROCHDALE PIONEERS

OSTROM: LIFE AND CONTRIBUTION

OSTROM'S PRIZE LECTURE

OSTROM'S LECTURE SLIDES

SI : International System of Units (Système international d'unités) The common measurement system built on units such as the metre, kilogram and second. D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

TimeBanks.Org

US Food and Drug Administration

Metrología y calidad

Guide to SI, Appendix B: conversion factors

Mercado Central de Buenos Aires

SI, International System of Units (Système international d'unités) The common measurement system built on units such as the metre, kilogram and second. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Argentina

ON THIS PAGE

NIST National Institute of Standards and Technology · **SI** Système international d'unités, the International System of Units · **US** United States

European Commission

European Union

USDA Agricultural Marketing Service

US Internal Revenue Service

Scottish recording guide

The Masons' Company

Historic England: types of marks

Greig: Stonemasons' marks

TERMS ON THIS PAGE RAE : Real Academia Española The Spanish-language academy responsible with partner academies for the cited reference.

ASALE : Asociación de Academias de la Lengua Española The association of Spanish-language academies.

D + number : Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Black Abbey photograph

Glasgow Cathedral photograph

Wallace: Leaving a mark on history

MEASUREMENT LANGUAGE

RAE and ASALE

CONTENTS PAG

TERMS ON THIS PAGE RAE: Real Academia Española The Spanish-language academy responsible with partner academies for the cited reference.

ASALE: Asociación de Academias de la Lengua Española The association of Spanish-language academies.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. Th record gives the title, credit or publication details.

Argentina, Cultura

History of the Theosophical Society

Man Visible and Invisible, Plate XII, pp. 98-99 and author's note

The Key to Theosophy, section VI, pp. 69-71

Shiva as Lord of the Universe in Benares (Kashi Vishvanatha)

Recognizing the Gods

Buddha Shakyamuni

Dmitry G: Citroën Jumper wiring photograph

ON THIS PAGE

USDA United States Department of Agriculture · **US** United States · **RAE** Real Academia Española · **ASALE** Asociación de Academias de la Lengua Española

Library of Congress: Roudanez automobile-wiring guide

Bosch: automotive integrated circuits

Bosch: electronic engine control unit

DENSO: alternator troubleshooting

NHTSA: technician guidance on DTN air bags

Tektronix: programmable DC power-supply information

Fluke: Ohm’s law

TERMS ON THIS PAGE NHTSA: National Highway Traffic Safety Administration The United States road and vehicle safety agency.

DTN, Detiannuo A shortened manufacturer name on air-bag inflator markings described by the United States vehicle safety authority. D + number, Book evidence record The number identifies a source entry in the book’s evidence section. The linked record gives the title, credit or publication details.

www.scouts.org.uk

prod-cms.scouts.org.uk

IGN: Manual de signos cartográficos

USGS: US Topo map symbol guide

USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

www.ncei.noaa.gov

www.cdc.gov

www.brambleberry.com

TERMS ON THIS PAGE NOAA: National Oceanic and Atmospheric Administration The United States agency supplying ocean, weather and climate records.

www.rmg.co.uk

Jacek Halicki: Prague astronomical dial, 2015

Prague City Tourism: Old Town Hall astronomical clock

Czech Academy of Sciences astronomy guide: Prague clock

NASA Science: Moon phases

Ytierny: Gros-Horloge detail, Rouen

City of Rouen: Gros-Horloge

TERMS ON THIS PAGE NASA: National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here.

ON THIS PAGE

NHTSA National Highway Traffic Safety Administration, the United States road-vehicle safety agency · **DTN** Detiannuo · **DC** Direct current · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **USGS** United States Geological Survey · **US** United States · **NASA** National Aeronautics and Space Administration

Rouen Normandie Tourisme: Le Gros-Horloge

NIST: timekeeping and clocks FAQs

FAQs: Frequently asked questions A source section organised as questions and answers.

D + number: Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

KHK: calculation of gear dimensions

TERMS ON THIS PAGE KHK: Kohara Gear Industry The Japanese gear manufacturer credited with the reference on gear geometry.

NIST, National Institute of Standards and Technology The United States laboratory that maintains measurement standards and publishes technical references. FAQs, Frequently asked questions A source section organised as questions and answers. NHS, National Health Service The public health service named as the source of the guidance in the United Kingdom. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Marion Post Wolcott: the Allen family storage house, November 1940

CDC · collecting rainwater and your health

CDC · how household water treatment works

CDC · making water safe in an emergency

CDC · creating and storing an emergency water supply

Carlos Verbelen | Tandil author photograph, TD2

NHS: knee pain

NHS, National Health Service The public health service named as the source of the guidance in the United Kingdom. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Carlos Verbelen: Tandil rocky-pasture photograph

Consejo Federal de Inversiones: Sierras de Tandilia

Municipalidad de Tandil: IDE GeoServicios

Carlos Verbelen: wider Tandil landscape photograph

TERMS ON THIS PAGE IDE: Infraestructura de Datos Espaciales A spatial-data infrastructure for publishing and sharing geographic data and map services.

Baldomer Gili i Roig | Sagrada Família, 1905

Museu d'Art Jaume Morera | Sagrada Familia catalogue presentation

Sagrada Família | Official history of the basilica

TERMS ON THIS PAGE USGS: United States Geological Survey The federal science agency providing geologic, water, mapping and Earth-observation data.

ON THIS PAGE

NIST National Institute of Standards and Technology · **IDE** Infraestructura de Datos Espaciales, spatial-data infrastructure

IGN, Instituto Geográfico Nacional Argentina's national mapping agency and the source for the cartographic or survey reference. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

NHS: deep vein thrombosis

Pilatus: PC-12 NGX factsheet, PIL1219E

PC-12 NGX: Pilatus PC-12 NGX The manufacturer's model and variant designation, used here as a reference for an aircraft comparison.

ANAC: aerodrome and obstacle procedures

OSHA: Permit-required confined spaces

UMN: Deep winter greenhouses

TERMS ON THIS PAGE ANAC: Administración Nacional de Aviación Civil Argentina's civil aviation authority.

PC-12 NGX, Pilatus PC-12 NGX The manufacturer's model and variant designation, used here as a reference for an aircraft comparison. CDC, Centers for Disease Control and Prevention The United States public health agency credited with the cited information. NIOSH, National Institute for Occupational Safety and Health The United States agency conducting research on workplace health and safety. OSHA, Occupational Safety and Health Administration The United States workplace-safety agency. UMN: University of Minnesota The United States university credited with the extension or research material.

CDC, Collecting Rainwater and Your Health. L2: Textron Aviation,

FIA: Formula 1 rules for 2026

BUENOS AIRES PROVINCE, WATER CODE, LAW 12,257

FIA: Fédération Internationale de l'Automobile The international organisation responsible for the cited motorsport rules.

GOES: Geostationary Operational Environmental Satellites The weather satellite programme supplying imagery and observations from geostationary orbit.

Estudio Inmobiliario JM: Aero Country Club

Yacoub: De La Garma, Ruta 75

Contacto Propiedades: La Primavera, Tunuyán

Mendoza DGI and notarial water records

DGI: Departamento General de Irrigación The Mendoza authority responsible for irrigation and water administration.

Departamento General de Irrigación

Blasco-Fotheringham: 44 ha, Calamuchita

Río Azul Patagonia: El Hoyo, RN 40

Catibi: Villa de Miguel, Dina Huapi

ON THIS PAGE

IGN Instituto Geográfico Nacional, Argentina's national geographic institute · **ANAC** Administración Nacional de Aviación Civil, Argentina · **UMN** University of Minnesota · **FIA** Fédération Internationale de l'Automobile · **DGI** Departamento General de Irrigación · **ha** hectare, 10,000 square metres · **RN** Ruta Nacional

Inmobiliaria Baez: casa hangar

RN: Ruta Nacional An Argentine national highway. The following number identifies the route.

Departamento General de Irrigación

Blasco-Fotheringham: 44 ha, Calamuchita

Río Azul Patagonia: El Hoyo, RN 40

Catibi: Villa de Miguel, Dina Huapi

Estudio Inmobiliario JM: Aero Country Club

Inmobiliaria Baez: casa hangar

Villa Propiedades: San Miguel del Monte

TECHNOALPIN, SNOWFACTORY

Götz, Colonia Lanusse listing 5762329

Antón, Route 71 Trevelin 5 ha

Argentina, Sistema Acuífero Guaraní

IGN, geology and hydrogeology of the Guaraní system

Entre Ríos, Law 9172, FAO legal repository

TERMS ON THIS PAGE ha: Hectare A unit of area equal to 10,000 square metres.

IGN, Instituto Geográfico Nacional Argentina's national mapping agency and the source for the cartographic or survey reference. FAO, Food and Agriculture Organization of the United Nations The international organisation publishing the agricultural or food reference.

DOE: How Hydropower Works

USGS: Desalination

POWO: Royal Botanic Gardens, Kew. Full name records are linked beside every entry. Observation checklist: editorial method.

Register 198

Register 199

POWO: Plants of the World Online The botanical reference maintained by the Royal Botanic Gardens, Kew.

Register 200

Register 201

PLANT REGISTER: NAMES AND EVIDENCE

Kew Gardens Treetop Walkway

Treetop Walkway

ON THIS PAGE

ha hectare, 10,000 square metres · **RN** Ruta Nacional · **IGN** Instituto Geográfico Nacional, Argentina's national geographic institute · **FAO** Food and Agriculture Organization of the United Nations · **DOE** Department of Energy · **USGS** United States Geological Survey · **POWO** Plants of the World Online

Utah Poison Control Center: Dangers of foraging

Bandera nacional

The Haudenosaunee creation story

Calendars and their history

Mark 6, verses 30-44

John 6, verses 1-15

Man's Higher Consciousness, Hilton Hotema

Antarctic single-frame aerial photographs

The Antarctic Treaty

Apollo 11 mission overview

Musée national Gustave Moreau: Jupiter and Semele

Library of Congress: William Blake, Europe, a prophecy

US National Archives: Original design of the Great Seal

NASA Science: Saturn facts

9/11 Memorial & Museum: About the memorial

NASA, National Aeronautics and Space Administration The United States agency responsible for the space, aeronautics or Earth-observation source cited here. D + number, Book evidence record The number identifies a source entry in the book's evidence section. The linked record gives the title, credit or publication details.

Museo Nacional del Prado: Saturno, Francisco de Goya

9/11 Memorial & Museum: Spencer Finch's memorial artwork

Project Gutenberg: The Kybalion, Three Initiates

Vatican Museums: Sistine Chapel ceiling

Nielsen and colleagues, 2013: evaluation of left-brain versus right-brain hypotheses

NASA Goddard: Origins of the elements

Bernoulli's equation

Lise Meitner

Ida Noddack

The wave nature of the electron

Michiyo Tsujimura

A rearrangement involving migration of an allyl group, 1940

OpenStax: University Physics, Ohm's law

ON THIS PAGE

US United States · **NASA** National Aeronautics and Space Administration

Paré's printed iron hand

Examining early articulated iron hands

James Sharp's domestic gas cooker, around 1850

Alfred King's cooker for 148 Piccadilly

Desaga's burner and laboratory spectroscopy

Mochet Le Vélocar, 1926

Rover safety bicycle, Coventry, 1885

Industrial length and the gauge block

Planetary satellite physical parameters

Voyager's planetary voyage

Magnetic declination

How to orient a map and compass

US patent 2,723,660: Artificial uterus, Emanuel M. Greenberg

Old Town Hall and the astronomical clock

Gros-Horloge

Restoring the Gros-Horloge

NIH Office of Dietary Supplements: Iron, professional fact sheet

NCCIH: Reflexology

AySA: Calidad del agua

TERMS ON THIS PAGE NIH: National Institutes of Health The United States biomedical research agency and its associated institutes.

NCCIH: National Center for Complementary and Integrative Health The United States research centre evaluating complementary health approaches.

AySA: Agua y Saneamientos Argentinos The water and sanitation provider named in the Buenos Aires context.

National Park Service: Washington Monument construction

Bullitt County History Museum

Ciudad de Buenos Aires

Argentina · national legislation archive

University of Washington Libraries · Special Collections

Library of Congress · Worlds Revealed

Fuerza Aérea Argentina

ON THIS PAGE

US United States · **NIH** National Institutes of Health · **NCCIH** National Center for Complementary and Integrative Health

US Federal Aviation Administration

Library of Congress · Geography and Map Division

US National Park Service · Statue of Liberty National Monument

US National Park Service · Statue of Liberty

Corpus dei disegni di architettura del Duomo di Milano

David Rumsey Map Collection · Stanford Libraries

Instituto Geográfico Nacional · Argentina

Smithsonian Libraries and Archives

OpenStax · Rice University

NASA · History

NASA · biographies

Mittelbau-Dora Memorial

Ernő Rubik: Rubik's Cube, 1974

Official three-by-three solve guide

American Geographical Society Library · University of Wisconsin-Milwaukee

Huertas: local guidance for the family garden

Andean roots and tubers

1927 Ford Roadster pedal car

McMurdo Station

To the South Pole for Halloween

The National Aeronautics and Space Act of 1958 creates NASA

Explorer 1 becomes America's first satellite

Tratado Antártico

Operation Fishbowl

The artificial radiation belt made on July 9, 1962

The Starfish exo-atmospheric, high-altitude nuclear weapons test

Apollo 11 flight plan

William Ramsay and Emily Aston: molecular surface energy of mixtures

Phenylation in the presence of copper as a catalyst, 1906

Mary Engle Pennington and the cold chain

Sibyl M. Rock, computing manual for analysis of mass spectra

ON THIS PAGE

US United States · **NASA** National Aeronautics and Space Administration

Loney Clinton Gordon

Production of fumaric acid by Rhizopus arrhizus

Sara Borrell Ruiz

Electroanalytical chemistry of gadolinium, 1983

Katheryn L. Lawson: Behavior of Indium at Tracer Concentrations, 1957

Hydrogen-bonded self-assembled peptide nanotubes, 1999

Yerba mate: the Argentine production chain

Experimental station in the Alto Valle

Vegetables and pulses

Horticulture statistics

Enset

Bambara groundnut

Yam

Breadfruit history

Pacific Food Guide: food preferences

Taro

Kūmara in Aotearoa

Orchid innovation and the vanilla orchid

Ananás dos Açores, São Miguel

EDEN ISS in Antarctica

Malus domestica · Apple

Cynara cardunculus · Artichoke

Solanum melongena · Aubergine

TERMS ON THIS PAGE EDEN ISS: Evolution and Design of Environmentally closed Nutrition-Sources / International Space Station The greenhouse project tested controlled crop production in an Antarctic environment for space-related research.

Persea americana · Avocado

Vigna subterranea · Bambara groundnut

Musa cultivars · Banana

Hordeum vulgare · Barley

Beta vulgaris · Beetroot

Brassica rapa · Bok choy

ON THIS PAGE

ISS International Space Station; EDEN ISS is the name of an Antarctic greenhouse research project

Artocarpus altilis · Breadfruit

Brassica oleracea · Broccoli

Cucurbita moschata · Butternut squash

Bitter-tasting courgettes

Brassica oleracea · Cabbage

Daucus carota · Carrot

Manihot esculenta · Cassava

Cassava and bamboo shoots

Beta vulgaris · Chard

Cicer arietinum · Chickpea

Cocos nucifera · Coconut

Vigna unguiculata · Cowpea

Taraxacum officinale aggregate · Dandelion

Phoenix dactylifera · Date

Glycine max · Edamame

Ensete ventricosum · Enset

Vicia faba · Fava bean

Glucose-6-phosphate dehydrogenase deficiency

Acca sellowiana · Feijoa

Ficus carica · Fig

Eleusine coracana · Finger millet

Allium sativum · Garlic

Vitis vinifera · Grape

Psidium guajava · Guava

Corylus avellana · Hazelnut

Hibiscus sabdariffa · Hibiscus, roselle

Lactuca sativa · Iceberg lettuce

Brassica juncea · Indian mustard

Artocarpus heterophyllus · Jackfruit

Helianthus tuberosus · Jerusalem artichoke

Pachyrhizus erosus · Jícama

Pachyrhizus erosus

Brassica oleracea · Kale

Amaranthus caudatus · Kiwicha

Actinidia deliciosa · Kiwifruit, green

Allium ampeloprasum · Leek

Citrus × limon · Lemon

Lens culinaris · Lentil

Litchi chinensis · Lychee

Macadamia integrifolia · Macadamia

Zea mays · Maize

Starch and phytolith evidence for early maize in the Central Balsas

Mangifera indica · Mango

Vigna radiata · Mung bean

Solanum quitoense · Naranjilla

Tetragonia tetragonioides · New Zealand spinach

Opuntia ficus-indica · Nopal

Avena sativa · Oat

Oxalis tuberosa · Oca

Abelmoschus esculentus · Okra

Olea europaea · Olive

Allium cepa · Onion

Carica papaya · Papaya

Pastinaca sativa · Parsnip

Arachis hypogaea · Peanut

Pyrus communis · Pear, European

Capsicum annuum · Pepper, sweet

Ananas comosus · Pineapple

Musa cooking cultivars · Plantain, cooking banana

Solanum tuberosum · Potato

Natural toxins in vegetables and beans

Cydonia oblonga · Quince

Chenopodium quinoa · Quinoa

Raphanus sativus · Radish

ON THIS PAGE

× botanical hybrid sign in the Citrus name

Rheum, culinary hybrids · Rhubarb

Oryza sativa · Rice, Asian

Sorghum bicolor · Sorghum

Spinacia oleracea · Spinach

Fragaria × ananassa · Strawberry

Ipomoea batatas · Sweet potato

Colocasia esculenta · Taro

Eragrostis tef · Teff

Solanum lycopersicum · Tomato

Brassica rapa · Turnip

Dioscorea alata · Ube

Ullucus tuberosus · Ulluco

Citrus × sinensis · Valencia orange

Vanilla planifolia · Vanilla

Nasturtium officinale · Watercress

Fasciola clinical overview

Citrullus lanatus · Watermelon

Triticum aestivum · Wheat, bread

Raw flour and dough

Xanthosoma sagittifolium · Xanthosoma

Opuntia joconostle · Xoconostle

Smallanthus sonchifolius · Yacón

Dioscorea rotundata · Yam, white Guinea

Ilex paraguariensis · Yerba mate

Pouteria sapota · Zapote mamey

Cucurbita pepo · Zucchini

TERMS ON THIS PAGE SCN: Suprachiasmatic nucleus A small region of the brain involved in coordinating daily biological rhythms.

PHOTOGRAPH RECORDS: TALLOW AND GHEE

Documentary images used at reference 1419; full original frames, with no retouching or generated additions

REFERENCE PC1

D535 Tallow-beef suet after rendering

ON THIS PAGE

× botanical hybrid sign in the Citrus name · **SCN** Suprachiasmatic nucleus, a brain region coordinating daily rhythms

FotoosvanRobin · 30 March 2007 · CC BY-SA 2.0

Catalogue: rendered beef suet in a jar. Original Flickr title describes salt and peppercorns. This is a seasoned preparation, not a measured pure-fat test.

Source photograph and catalogue Licence and reuse conditions

D536 Pure Ghee-Homemade-Maharashtra

Phadke09 · 28 March 2021 · CC BY-SA 4.0

Catalogue: homemade ghee. Photograph shows a smooth pale-yellow surface in a metal vessel. The record supplies no batch temperature or yield.

D537 Home made Ghee

Neha Sonal · 7 June 2015 · CC BY-SA 4.0

Catalogue: homemade ghee. Granules are visible on the spoon and in the bowl. This is a separate preparation from D536, not a before-and-after experiment.

Credit applies to each photograph. The images retain their stated licences; no photographer endorsement is implied. D535 originated on Flickr; D536 and D537 are catalogued as the photographers' own work.

Return to the material photographs

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THE TEN THEMES AND THEIR HISTORICAL FIGURES

One combined cover. Eight subject openings. Portrait names link to sources.

Emblem Isaac Newton Tree, open book and the physical laws behind the city.

Shelter Thomas Young Exposed timber structure and material stiffness.

Water Blaise Pascal Cistern, terraces, liquid equilibrium and pressure.

Medicine Tu Youyou Sweet wormwood, a lens and the artemisinin investigation.

The body Leonardo da Vinci The cloister, teaching figure and skeleton.

Tools Galileo Galilei The workbench, telescope, plane and calipers.

Wisdom René Descartes Manuscript, geometry, globe and orrery.

Pantry Louis Pasteur Stored grain, jars, lantern and fermentation research.

Valley James Watt Mill, connected settlement and an imagined refuge.

Star map Johannes Kepler Gold orbital arcs, planets and the star compass.

The portraits and landscapes are modern illustrations. The underground refuge is an imagined setting inspired by rock-cut architecture, not a construction plan or evidence of a secret base. The botanical and anatomical art are cover illustrations, not identification or diagnostic plates.

Equations use modern notation. A historical association does not mean the pictured figure wrote the exact displayed formula. The original ten portrait artworks remain preserved.

ON THIS PAGE

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Central medallion: Carlos “Charlie” Verbelen, engraved from his supplied portrait. The original photograph appears in Bio1.

Sources and consolidated image credits

Sicardy and colleagues: Charon occultation, 11 July 2005; ESO research release

Historical measurement from Chile and Argentina. The 603.6 km historical radius is not silently substituted for the current JPL value of 606.0 km.

https://www.eso.org/public/news/eso0602/

Sicardy et al.: Charon’s size and upper limit on its atmosphere from a stellar occultation

Nature 439, 52-54, 2006. The chapter’s numerical training observations are explicitly synthetic.

https://doi.org/10.1038/nature04351

JPL Solar System Dynamics: planetary satellite physical parameters

Mean radius is the radius of a sphere with equivalent volume. Diameters in this reader are twice that value, rounded for display.

https://ssd.jpl.nasa.gov/sats/phys_par/sep.html

Bureau International des Poids et Mesures: the International System of Units

https://www.bipm.org/en/measurement-units

Museo Galileo: measuring the height of lunar mountains

https://brunelleschi.imss.fi.it/esplora/cannocchiale/dswmedia/simula/esimula1_1_st.html

NASA: Europa facts and the Io-Europa-Ganymede orbital resonance

https://science.nasa.gov/jupiter/jupiter-moons/europa/europa-facts/

NASA technical report: tidal heating and cryovolcanism

https://ntrs.nasa.gov/api/citations/20210026013/downloads/Quick_%20Chapter5_Cryovolcanism_13Jun2021.docx.pdf

NASA/JPL: image-use policy

https://www.jpl.nasa.gov/jpl-image-use-policy/

NASA: librations of the Moon

https://cdaweb.gsfc.nasa.gov/pub/documents/archived_websites/pwg.gsfc.nasa.gov/stargaze/Smoon4.htm

Museo Galileo: Jovilabe, inventory 3178

The surviving brass object is catalogued as second half of the seventeenth century, maker unknown; it is connected with Galileo’s programme, not confidently attributed as a surviving instrument built by him.

https://catalogue.museogalileo.it/object/Jovilabe.html

Observatoire de Paris: 350 years of Rømer and finite light travel

ON THIS PAGE

ESO European Southern Observatory, an intergovernmental astronomy organisation with observing facilities in Chile · **JPL** Jet Propulsion Laboratory, managed by the California Institute of Technology for NASA · **km** kilometre, 1,000 metres · **NASA** National Aeronautics and Space Administration

Includes links to the 1676 source and historical analysis. Rømer's light-travel-time argument is not described as a modern numerical determination of c.

https://celerite.obspm.fr/

Freeth, Jones, Steele and Bitsakis: calendars and eclipse prediction on the Antikythera Mechanism

Nature 454, 614-617, 2008. Surviving evidence and scholarly reconstruction are distinguished from the new teaching wheel.

https://doi.org/10.1038/nature07130

Fred Espenak, NASA: periodicity of solar eclipses

Period values quoted by the source are for an epoch around 2000. The worked calendar wheel is a cycle demonstration, not a local eclipse prediction service.

https://eclipse.gsfc.nasa.gov/SEsaros/SEperiodicity.html

International Dunhuang Programme, British Library: the Dunhuang Star Atlas

A manuscript that combines a cloud-divination text with accurate positional star charts; cultural evidence does not validate the divination claims.

https://idp.bl.uk/discover/learning/chinese-astronomy/articles/the-chinese-sky/the-dunhuang-star-atlas/

Bonnet-Bidaud, Praderie and Whitfield: a comprehensive study of the Dunhuang Chinese sky

The 28 xiu are historically defined by leading stars and are not simply 28 equal sectors.

https://idp.bl.uk/wp-content/uploads/2023/09/THE-DUNHUANG-CHINESE-SKY_-A-COMPREHENSIVE-STUDY-OF-THE-OLDEST-KNOWN-STAR-ATLAS.pdf

European Space Agency: Huygens lands on Titan

https://www.esa.int/Science_Exploration/Space_Science/Cassini-Huygens/Europe_reaches_new_frontier_Huygens_lands_on_Titan

galileo / Galileo records the changing positions of Jupiter's moons. Galileo Galilei; scan from History of Science Collections, University of Oklahoma Libraries. Public domain according to the linked collection record.

eso_charon_chords / The 2005 Charon occultation: three observing tracks. ESO Creative Commons Attribution 4.0 International, https://creativecommons.org/licenses/by/4.0/. Unmodified source image.

moon_ganymede / Ganymede / PIA00716. NASA/JPL; NASA Photojournal PIA00716. NASA/JPL image-use policy applies. Named team credits retained; no endorsement implied.

moon_titan / Titan / PIA14909. NASA/JPL-Caltech/Space Science Institute; NASA Photojournal PIA14909. NASA/JPL image-use policy applies. Named team credits retained; no endorsement implied.

moon_callisto / Callisto / PIA03456. NASA/JPL/DLR; NASA Photojournal PIA03456. NASA/JPL image-use policy applies. Named team credits retained; no endorsement implied.

moon_io / Io / PIA02308. NASA/JPL/University of Arizona; NASA Photojournal PIA02308. NASA/JPL image-use policy applies. Named team credits retained; no endorsement implied.

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NASA National Aeronautics and Space Administration · **ESO** European Southern Observatory, an intergovernmental astronomy organisation with observing facilities in Chile

moon_moon / Moon / PIA00405. NASA/JPL/USGS; NASA Photojournal PIA00405. NASA/JPL image-use policy applies. Named team credits retained; no endorsement implied.

moon_europa / Europa / PIA19048. NASA/JPL-Caltech/SETI Institute; NASA Photojournal PIA19048. NASA/JPL image-use policy applies. Named team credits retained; no endorsement implied.

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moon_oberon / Oberon / PIA00034. NASA/JPL; NASA Photojournal PIA00034. NASA/JPL image-use policy applies. Named team credits retained; no endorsement implied.

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moon_charon / Charon / PIA19866. NASA/Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute; NASA Photojournal PIA19866. NASA/JPL image-use policy applies. Named team credits retained; no endorsement implied.

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z350 / Twenty selected moons / supplied ZeusC poster. User-supplied ZeusC archive, sheet 350. Original marks preserved. Supplied reference. Underlying creator and reuse rights must be read separately from the archive watermark.

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The complete originals are preserved in the gallery and recovery archive. New vectors explain stated examples and are not certified fabrication drawings. An archive watermark does not establish all underlying commercial publication rights. See the publication-format plan before preparing a sales edition.

Sources and consolidated image credits

Library of Congress: Jesuit province of Paraguay, 1732

Read the dedication, scale and pictorial relief as historical evidence. Modern national boundaries cannot be recovered from its mission symbols.

https://www.loc.gov/item/2003683882/

Instituto Geográfico Nacional: POSGAR reference-frame questions

https://www.ign.gob.ar/NuestrasActividades/Geodesia/Posgar/faq

Food and Agriculture Organization: plan surveying

https://www.fao.org/fishery/docs/CDrom/FAO_Training/FAO_Training/General/x6707e/x6707e07.htm

Instituto Geográfico Nacional: GEOIDE-Ar16 height conversion

The service relates POSGAR07 ellipsoidal heights to SRVN16 orthometric heights within its stated area and model.

https://www.ign.gob.ar/NuestrasActividades/Geodesia/Geoide-Ar16/calculadora

Food and Agriculture Organization: measuring height differences

https://www.fao.org/fishery/static/FAO_Training/FAO_Training/General/x6707e/x6707e05.htm

Utah Geospatial Resource Center: the survey chain and western grid

https://gis.utah.gov/blog/2019-03-11-the-western-grid/

National Institute of Standards and Technology: retirement of the US survey foot

https://www.nist.gov/news-events/news/2023/01/new-years-eve-2023-marked-retirement-us-survey-foot

NOAA: magnetic declination and the local horizontal field

ON THIS PAGE

NASA National Aeronautics and Space Administration · **POSGAR** Posiciones Geodésicas Argentinas · **POSGAR07** Posiciones Geodésicas Argentinas 2007, the named Argentine geodetic reference frame · **SRVN16** Sistema de Referencia Vertical Nacional 2016 · **US** United States · **NOAA** National Oceanic and Atmospheric Administration

East-positive convention. Numerical corrections in this reader are synthetic unless a location, date and model output are explicitly supplied.

https://www.ngdc.noaa.gov/geomag/declination.shtml

Honeywell: HMC5883L manufacturer datasheet

Manufacturer document hosted by SparkFun. Chip ratings do not certify the unspecified board and battery assembly in the supplied poster.

https://cdn.sparkfun.com/datasheets/Sensors/Magneto/HMC5883L-FDS.pdf

Museo Galileo: Paolo Massucci triangulation instrument, 1604

Historical mathematical instrument with angular, polygon and other scales. The new paper alidade is a teaching design, not a facsimile.

https://catalogue.museogalileo.it/object/TriangulationInstrument.html

Smithsonian Libraries: The plane table, 1865

United States Coast Survey publication; historical instrument plates.

https://library.si.edu/digital-library/book/planetable1865100harr

Vitruvius, The Ten Books on Architecture, Morgan translation, 1914

Book I discusses wind orientation and shadows; Book VIII, chapter V, describes levelling and the chorobates. Public-domain text.

https://www.gutenberg.org/files/20239/20239-h/20239-h.htm

Royal Museums Greenwich: geomantic compass NAV0442

Made by Wang Yangxi, circa 1850. The record identifies a south-pointing needle, nine rings and a 24-sector direction ring. The reader uses a new labelled analytical diagram, not an unlicensed museum photograph.

https://www.rmg.co.uk/collections/objects/rmgc-object-42654

Whipple Museum: Xi Yang-San geomantic compass, late eighteenth century

Object 1123. Its 24 concentric rings are distinct from a direction ring divided into 24 sectors.

https://collections.whipplemuseum.cam.ac.uk/objects/12431/

ground_map1732 / Jesuit province of Paraguay and adjoining territories. Giovanni Petroschi, engraver; Library of Congress Geography and Map Division, G5200 1732 .R4. Library of Congress collection: public domain or no known copyright restrictions; free to use and reuse.

ground_table / Plane table with tripod / USGS-000210. USGS Museum Staff, United States Geological Survey. Public domain, as stated by the collection.

ground_field / Plane-table surveying in Alaska. NOAA National Geodetic Survey. United States government collection image; source credit retained.

survey / A levelling instrument in an 1831 plate. John Augustus Lloyd. Philosophical Transactions; digitized copy catalogued by the Internet Archive. Public domain according to the linked collection record.

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NOAA National Oceanic and Atmospheric Administration

ground_winds / The Tower of the Winds at Athens / historical photograph. The Ten Books on Architecture, translated by Morris Hicky Morgan; illustrations prepared under Herbert Langford Warren, Harvard University Press, 1914. Digital copy: Project Gutenberg. Public-domain historical edition; source credit retained.

ground_windplan / Diagram of the winds / Fra Giocondo edition, 1511. Diagram from the Venice 1511 edition of Vitruvius by Fra Giocondo, reproduced in Morris Hicky Morgan's 1914 translation. Digital edition: Project Gutenberg. Public-domain historical edition.

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z093 / Digital compass using magnetometer / ZeusC supplied sheet 093. User-supplied ZeusC archive, sheet 093. Original marks preserved. Supplied reference. Underlying creator and reuse rights must be read separately from the archive watermark.

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Sources and consolidated image credits

Library of Congress: Buenos Aires docks stereograph, 1908

United Photographic Company. Collection identifier LC-DIG-stereo-1s16929; no known restrictions on publication.

https://www.loc.gov/item/2019631277/

CERN: antimatter

Used to distinguish experimental production and confinement from an ordinary stocked commodity. No headline price is adopted.

https://home.cern/science/physics/antimatter

INTI: trazabilidad metrológica, chemical metrology

Argentine institutional reference for the distinction between a stated result and its chain of comparisons.

https://www.inti.gob.ar/assets/uploads/files/metrologia-quimica/02-trazabilidad-metrologica.pdf

NIST: metrological traceability, frequently asked questions

Traceability belongs to a measurement result and includes uncertainty; a logo or instrument purchase is not sufficient.

https://www.nist.gov/metrology/metrological-traceability

NIST Technical Note 1297: propagation of uncertainty

The reader works original numerical examples with explicitly stated independence assumptions.

ON THIS PAGE

CERN European Organization for Nuclear Research; its acronym comes from the historical French Conseil européen pour la recherche nucléaire · **INTI** Instituto Nacional de Tecnología Industrial · **NIST** National Institute of Standards and Technology

https://www.nist.gov/pml/nist-technical-note-1297/nist-tn-1297-appendix-law-propagation-uncertainty

US Environmental Protection Agency: technetium-99

The agency distinguishes technetium-99 from metastable technetium-99m. The poster does not specify an available purchase.

https://www.epa.gov/radiation/radionuclide-basics-technetium-99

US Environmental Protection Agency: AP-42, section 8.8, Nitric Acid

February 1998 historical engineering and emissions reference. Used for the conceptual process and source audit, not current plant certification or operating instructions.

https://www.epa.gov/sites/default/files/2020-09/documents/8.8_nitric_acid.pdf

Antoine Laurent Lavoisier: Traité Élémentaire de Chimie, 1789

Selected plates digitised by Science History Institute. Copperplate engravings by Marie Anne Pierrette Paulze Lavoisier. Public domain.

https://digital.sciencehistory.org/works/v979v4270

The Met: David's portrait of Antoine Laurent and Marie Anne Lavoisier

1788; object 436106. The museum identifies both sitters and provides an Open Access public-domain image.

https://www.metmuseum.org/art/collection/search/436106

Science History Institute: Alchemical laboratory, 1652

Norton / Ashmole / Vaughan. The printed image is after a fifteenth-century manuscript; dates of composition, manuscript and print must not be collapsed.

https://digital.sciencehistory.org/works/9s161688c

Wilhelm Ostwald: Nobel lecture on catalysis, 1909

The lecture relates catalysis to rates and intermediate reactions. Calculated curves in this reader are synthetic teaching models.

https://www.nobelprize.org/prizes/chemistry/1909/ostwald/lecture/

European Chemicals Agency: guide on safety data sheets and exposure scenarios

2018 institutional guide. Its explanation of the 16 sections is paired with the current official Annex II source.

https://op.europa.eu/en/publication-detail/-/publication/f91ba6ab-c06c-11e8-9893-01aa75ed71a1/language-en

European Union: Regulation 2020/878, safety data sheet structure

Official primary text consulted for section headings. Readers must obtain the actual product and supplier documents for their use.

https://eur-lex.europa.eu/eli/reg/2020/878/oj/eng

Robert Boyle: The Sceptical Chymist, 1661

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US United States · **m** metre, a length unit

Public-domain primary text. The dialogue disputes claims about the three chymical principles and the interpretation of products obtained by operations.

https://www.gutenberg.org/cache/epub/22914/pg22914-images.html

Science History Institute: The Laboratory, 1755

Thomas Major after David Teniers II. Public domain. A particular engraved scene, not an equipment specification.

https://digital.sciencehistory.org/works/m613mz29d

Indiana University: The Chymistry of Isaac Newton, Symbol Guide

A manuscript-specific scholarly comparison for interpreting signs. This does not authenticate the supplied modern contact sheet.

https://newton.dlib.indiana.edu/page/symbols

process_port / Along the docks, Buenos Ayres, Argentine Republic. United Photographic Company, publisher. Library of Congress, LC-DIG-stereo-1s16929. Library of Congress: no known restrictions on publication.

process_david / Antoine Laurent and Marie Anne Lavoisier. Jacques Louis David. The Metropolitan Museum of Art, object 436106. Public domain; The Met Open Access image.

process_plate8 / Gasometer and associated apparatus / plate VIII. Marie Anne Pierrette Paulze Lavoisier, engraver. Antoine Laurent Lavoisier, Traité Élémentaire de Chimie, plate VIII. Courtesy of Science History Institute. Public Domain Mark 1.0.

process_plate2 / Supports, funnels and laboratory vessels / plate II. Marie Anne Pierrette Paulze Lavoisier, engraver. Antoine Laurent Lavoisier, Traité Élémentaire de Chimie, plate II. Courtesy of Science History Institute. Public Domain Mark 1.0.

process_norton / An alchemical laboratory with an enclosed balance. Thomas Norton / Elias Ashmole / Robert Vaughan, Theatrum Chemicum Britannicum. Courtesy of Science History Institute. Public Domain Mark 1.0.

process_major / The Laboratory. Thomas Major, engraver, after David Teniers II. Courtesy of Science History Institute. Public Domain Mark 1.0.

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z068 / Nitric acid manufacturing / ZeusC supplied sheet 068. User-supplied ZeusC archive, sheet 068. Original marks preserved. Supplied reference. Underlying creator and reuse rights must be read separately from the archive watermark.

zP7005 / Supplied alchemical symbol contact sheet. Supplied by the author in ZeusC_ZEVSC_Photos-1-007.zip, image p7_005. The ZEVSC mark and screenshot labels are preserved. Underlying symbol compiler and image creator have not been identified. User-supplied reference. Underlying publication rights have not been verified.

Historical portrait-signatures: contemporary author illustrations bearing Carlos “Charlie” Verbelen. The named person identifies the portrait. A different design serves each five-page group. Date references follow.

José de San Martín. Born 25 February 1778. Died 17 August 1850.

https://sanmartiniano.cultura.gob.ar/noticia/cronologia-sanmartiniana/

Benjamin Franklin. Born 17 January 1706. Died 17 April 1790.

https://fi.edu/en/science-and-education/benjamin-franklin/faq

Marie-Anne Paulze Lavoisier. Born 20 January 1758. Died 10 February 1836.

https://comptes-rendus.academie-sciences.fr/chimie/item/10.1016/j.crci.2014.11.010.pdf

Isaac Newton. Born 4 January 1643. Died 31 March 1727.

https://newtonproject.ox.ac.uk/his-life-and-work-at-a-glance

Leonardo da Vinci. Born 15 April 1452. Died 2 May 1519.

https://mini-site.louvre.fr/trimestriel/2019/l%C3%A9onard_de_vinciGB/5/

Marie Curie. Born 7 November 1867. Died 4 July 1934.

https://www.nobelprize.org/prizes/physics/1903/marie-curie/facts/

Wilhelm Ostwald. Born 2 September 1853. Died 4 April 1932.

Argentine institutional reference for the distinction between a stated result and its chain of comparisons.

Traceability belongs to a measurement result and includes uncertainty; a logo or instrument purchase is not sufficient.

The reader works original numerical examples with explicitly stated independence assumptions.

The agency distinguishes technetium-99 from metastable technetium-99m. The poster does not specify an available purchase.

Selected plates digitised by Science History Institute. Copperplate engravings by Marie Anne Pierrette Paulze Lavoisier. Public domain.

The lecture relates catalysis to rates and intermediate reactions. Calculated curves in this reader are synthetic teaching models.

2018 institutional guide. Its explanation of the 16 sections is paired with the current official Annex II source.

Official primary text consulted for section headings. Readers must obtain the actual product and supplier documents for their use.

Public-domain primary text. The dialogue disputes claims about the three chymical principles and the interpretation of products obtained by operations.

A manuscript-specific scholarly comparison for interpreting signs. This does not authenticate the supplied modern contact sheet.

https://www.wilhelm-ostwald-park.de/en/biografie

Benjamin Franklin. Born 17 January 1706. Died 17 April 1790.

Marie-Anne Paulze Lavoisier. Born 20 January 1758. Died 10 February 1836.

Isaac Newton. Born 4 January 1643. Died 31 March 1727.

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m metre, a length unit

Leonardo da Vinci. Born 15 April 1452. Died 2 May 1519.

Marie Curie. Born 7 November 1867. Died 4 July 1934.

Wilhelm Ostwald. Born 2 September 1853. Died 4 April 1932.

Robert Boyle. Born 25 January 1627. Died 30 or 31 December 1691.

https://makingscience.royalsociety.org/people/na8137/robert-boyle

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Sources and consolidated image credits

Source checks dated 2026-11-08. The following register keeps the supplied archive identity and the underlying collection credits distinct.

INTI / Instituto Nacional de Tecnología Industrial: metrology publications

Argentine calibration and measurement context. SAC means Servicio Argentino de Calibración y Medición.

https://www.inti.gob.ar/areas/metrologia-y-calidad/fisica/metrologia-fisica/publicaciones

Universidad Nacional de Rosario / Laboratorio de Extensión de la Escuela de Ingeniería Eléctrica

Institutional history records creation in 1965 and the laboratory's 2012 SAC affiliation. Its dated page is a historical source, not a guarantee of present services.

https://www.fceia.unr.edu.ar/leie/

BIPM / International System of Units

SI derives from Système international d'unités. Units and quantity values must be distinguished.

Underwood and Gorham / Challenges and approaches for particle size analysis of micrographs of nanoparticles loaded onto textile surfaces

NIST Special Publication 1200-22, 2017. Sampling, image interpretation and particle-analysis limitations.

https://www.nist.gov/publications/challenges-and-approaches-particle-size-analysis-micrographs-nanoparticles-loaded-0

NIST/SEMATECH e-Handbook / Lognormal distribution

Distribution definitions and parameter-dependent moments. Worked values here are independently calculated from stated teaching inputs.

https://www.itl.nist.gov/div898/handbook/eda/section3/eda3669.htm

ImageJ / Analyze menu and particle analysis

Set Scale and Analyze Particles. Its exclusion-of-edge-objects option differs from this reader's centre-based counting frame.

https://imagej.net/ij/docs/menus/analyze

Sarmiento, Cefarelli and Almandoz / El microscopio electrónico de barrido

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SAC Servicio Argentino de Calibración y Medición, an Argentine calibration and measurement service · **BIPM** Bureau international des poids et mesures, the International Bureau of Weights and Measures · **SI** Système international d'unités, the International System of Units · **NIST** National Institute of Standards and Technology

Museo 27, 2015, page 105. Universidad Nacional de La Plata. Institutional scanning-electron microscopy history and two credited figures. CC BY 4.0.

https://sedici.unlp.edu.ar/handle/10915/52149

Keithley / Overview of two-wire and four-wire (Kelvin) resistance measurements

Manufacturer explanation of separate current and voltage connections. The three-volt board in this reader is a teaching design.

https://download.tek.com/document/2110_2Wire4WireKelvinResistanceAppNote.pdf

ZEISS / Ernst Abbe and the scientific foundation of microscopy

Institutional history, including Abbe's work with Carl Zeiss from 1866 and the 1872 instrument development.

https://www.zeiss.com/corporate/en/about-zeiss/past/history/ernst-abbe.html

Nikon MicroscopyU / Resolution

Optical resolution depends on wavelength and numerical aperture. Abbe and Rayleigh expressions describe different stated criteria.

https://www.microscopyu.com/microscopy-basics/resolution

OpenStax / University Physics, volume 2: RC circuits

Resistor-capacitor charging and discharging. Meter-loading examples here add an explicitly modelled parallel input resistance.

https://openstax.org/books/university-physics-volume-2/pages/10-5-rc-circuits

Gamry Instruments / Basics of electrochemical impedance spectroscopy

Impedance, Nyquist and Bode representations and equivalent circuits. A matching curve alone cannot establish a unique physical mechanism.

https://www.gamry.com/application-notes/EIS/basics-of-electrochemical-impedance-spectroscopy/

BioLogic / Checking non-stationary impedance measurements, application note 69

Stationarity concerns in impedance measurements. No corrosive electrochemical experiment is specified in the teaching builds.

https://www.biologic.net/documents/how-to-check-and-correct-non-stationary-eis-measurements-using-ec-lab-part-1-an-example-in-corrosion-an69-i/

IUPAC Gold Book / Electrochemical impedance spectroscopy

Terminology for the frequency-dependent electrical response.

https://goldbook.iupac.org/terms/view/09168

Robert Hooke / Micrographia, 1665. Wellcome Collection

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https://wellcomecollection.org/works/kta5fzzz

History of Science Museum, Oxford / A history of the microscope in ten objects

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BY Attribution condition in a Creative Commons licence · **IUPAC** International Union of Pure and Applied Chemistry

Historical optical instruments and the distinction between original objects and later reconstructions.

https://hsm.ox.ac.uk/a-history-of-the-microscope-in-ten-objects

JCGM 100:2008 / Guide to the expression of uncertainty in measurement

Linear propagation, standard uncertainty and coverage factors. The worked example assumes independent inputs.

https://doi.org/10.59161/JCGM100-2008E

NIST / Metrological traceability

Traceability is a property of a measurement result through a documented calibration chain, not a label conferred by an instrument brand.

NASA / Katherine Johnson biography

Historical context and life dates for the portrait. NASA Langley desk photograph dated 1966.

https://www.nasa.gov/centers-and-facilities/langley/katherine-johnson-biography/

la_plata_sem / The first scanning electron microscope in La Plata's museum service. Patricia Sarmiento, Adrián Oscar Cefarelli and Gastón Osvaldo Almandoz, "El microscopio electrónico de barrido", Museo 27 (2015), p. 105. Universidad Nacional de La Plata. Creative Commons Attribution 4.0 International. https://creativecommons.org/licenses/by/4.0/ Image extracted from the article without retouching.

la_plata_micrographs / Dinoflagellate micrographs from the La Plata article. Patricia Sarmiento, Adrián Oscar Cefarelli and Gastón Osvaldo Almandoz, "El microscopio electrónico de barrido", Museo 27 (2015), p. 105. Universidad Nacional de La Plata. Creative Commons Attribution 4.0 International. https://creativecommons.org/licenses/by/4.0/ Image extracted from the article without retouching.

johnson_desk / Katherine Johnson at her NASA Langley desk. NASA/Langley Research Center. Image identifier LRC-1966-B701_P-06717. NASA image-use guidelines apply. No NASA endorsement is implied. https://www.nasa.gov/nasa-brand-center/images-and-media/

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hooke_flea / Hooke's flea, engraved foldout. Robert Hooke, Micrographia (1665). Digitised copy: Wellcome Collection, b30326370. Public Domain Mark 1.0, as stated by the collection manifest. https://creativecommons.org/publicdomain/mark/1.0/

z083 / TEM micrograph and lognormal-size poster / supplied ZeusC sheet 083. Supplied ZeusC archive, sheet 083. The visible underlying mark reads "© nanoencruption"; ownership beyond that printed mark is

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JCGM Joint Committee for Guides in Metrology · **NIST** National Institute of Standards and Technology · **NASA** National Aeronautics and Space Administration · **TEM** Transmission electron microscopy, or a transmission electron microscope

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z092 / Supplied original 92. User-supplied ZeusC archive, sheet 092. Original marks preserved. Supplied reference. Underlying creator and reuse rights must be read separately from the archive watermark.

Cecilia Grierson. Born 22 November 1859. Died 10 April 1934.

https://buenosaires.gob.ar/gcaba_historico/noticias/homenaje-cecilia-grierson-maestra-y-medica

https://www.wikidata.org/wiki/Q5056433

Luis Federico Leloir. Born 6 September 1906. Died 2 December 1987.

https://www.leloir.org.ar/autobiografia-luis-leloir

https://www.wikidata.org/wiki/Q233985

Barbara McClintock. Born 16 June 1902. Died 2 September 1992.

https://buenosaires.gob.ar/gcaba_historico/noticias/homenaje-cecilia-grierson-maestra-y-medica

https://buenosaires.gob.ar/gcaba_historico/noticias/homenaje-cecilia-grierson-maestra-y-medica

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Luis Federico Leloir. Born 6 September 1906. Died 2 December 1987.

https://www.leloir.org.ar/autobiografia-luis-leloir

https://www.leloir.org.ar/autobiografia-luis-leloir

https://www.wikidata.org/wiki/Q233985

Barbara McClintock. Born 16 June 1902. Died 2 September 1992.

https://catalogues.royalsociety.org/CalmView/Record.aspx?id=NA5972&src=CalmView.Persons

https://catalogues.royalsociety.org/CalmView/Record.aspx?id=NA5972&src=CalmView.Persons

https://catalogues.royalsociety.org/CalmView/Record.aspx?id=NA5972&src=CalmView.Persons

https://www.wikidata.org/wiki/Q199654

Katherine Johnson. Born 26 August 1918. Died 24 February 2020.

https://www.nasa.gov/centers-and-facilities/langley/katherine-johnson-biography/

https://www.nasa.gov/centers-and-facilities/langley/katherine-johnson-biography/

https://www.wikidata.org/wiki/Q11740

Ernst Abbe. Born 23 January 1840. Died 14 January 1905.

https://www.zeiss.com/corporate/en/about-zeiss/past/history/ernst-abbe.html

https://www.zeiss.com/corporate/en/about-zeiss/past/history/ernst-abbe.html

https://www.wikidata.org/wiki/Q76359

Michael Faraday. Born 22 September 1791. Died 25 August 1867.

ON THIS PAGE

TEM Transmission electron microscopy, or a transmission electron microscope · = equals

https://www.rigb.org/explore-science/explore/collection/michael-faradays-research-and-work

https://www.rigb.org/explore-science/explore/collection/michael-faradays-research-and-work

https://www.rigb.org/explore-science/explore/collection/michael-faradays-research-and-work

https://www.wikidata.org/wiki/Q8750

Ernst Ruska. Born 25 December 1906. Died 27 May 1988.

https://www.fhi.mpg.de/873469/Ernst_Ruska

https://www.fhi.mpg.de/873469/Ernst_Ruska

https://www.fhi.mpg.de/873469/Ernst_Ruska

https://www.wikidata.org/wiki/Q71022

Antonie van Leeuwenhoek. Born 24 October 1632. Died 26 August 1723.

https://catalogues.royalsociety.org/CalmView/Record.aspx?id=NA8438&src=CalmView.Persons

BOOK IV / 92CE / 39

Sources: history and experiment

Source checks completed 8 November 2026. Select a title to open its source. Source names are kept readable; technical records live in the Interactive Library.

Argentina: the Pampero crossing and the beginnings of national aviation

Institutional chronology. Flight on 25 December 1907; Aero Club Argentino founded on 13 January 1908. The lifting calculation in this reader is an explicitly hypothetical modern example.

Newbery remembered through Icarus and the Andean condor

National monuments record. Monument by Hernán Cullen Ayerza, inaugurated in 1936. The symbolism is cultural evidence, not a flight mechanism.

Huang and colleagues: Biomni, original 2025 preprint

Figure 1b corresponds to the supplied biomedical tool map. Archived version 1, 2 June 2025, marked as a preprint. Creative Commons Attribution 4.0. No clinical efficacy is inferred from the figure.

Biomni: the authors' software and environment record

Primary code repository. A reproducible study records a specific commit and environment; the current repository may differ from the 2025 figure.

DESeq2: differential analysis of count data

Official package documentation. A named tool still needs appropriate inputs, design and assumptions.

The Protein Data Bank and structural evidence

RCSB documentation. Record the entry, method and provenance; distinguish experimental structures from computed models.

The International System of Units

ON THIS PAGE

= equals

BIPM, Bureau international des poids et mesures. Unit definitions and quantity conventions.

Wilbur Wright to Octave Chanute, 6 October 1901

Historical letter in an academic transcription collection. Bicycle-wheel comparison, expected and observed angles, and the need to revisit the method.

The Smithsonian: researching the Wright way

Museum interpretation of the Wrights' experimental work.

The Wrights' 1901 wind-tunnel tests

NASA Glenn historical explanation of the Smeaton coefficient, model comparisons and controlled test conditions.

Original 1901 airfoil and lift balance

Photograph by Orville Wright, Wright State University Libraries, item ms1 15 3 2.

Glide angle and the height-to-distance relationship

NASA Glenn. The geometrical relationship requires its stated steady-flight assumptions.

The lift equation and its reference quantities

Source checks completed 8 November 2026. Select a title to open its source. Source names are kept readable; technical records live in the Interactive Library.

Source checks completed 8 November 2026. Select a title to open its source. Source names are kept readable; technical records live in the Interactive Library.

https://www.wikidata.org/wiki/Q71022

https://catalogues.royalsociety.org/CalmView/Record.aspx?id=NA8438&src=CalmView.Persons

NASA Glenn. Air density, velocity, reference area and lift coefficient.

Source checks completed 8 November 2026. Select a title to open its source. Source names are kept readable; technical records live in the Interactive Library.

https://www.fhi.mpg.de/873469/Ernst_Ruska

https://www.wikidata.org/wiki/Q71022

https://catalogues.royalsociety.org/CalmView/Record.aspx?id=NA8438&src=CalmView.Persons

Source checks completed 8 November 2026. Select a title to open its source. Source names are kept readable; technical records live in the Interactive Library.

https://www.wikidata.org/wiki/Q8750

https://www.fhi.mpg.de/873469/Ernst_Ruska

https://www.wikidata.org/wiki/Q71022

How the drag equation was written around 1900

Argentina: the Pampero crossing and the beginnings of national aviation

ON THIS PAGE

BIPM Bureau international des poids et mesures, the International Bureau of Weights and Measures · **NASA** National Aeronautics and Space Administration

Source checks completed 8 November 2026. Select a title to open its source. Source names are kept readable; technical records live in the Interactive Library.

https://www.rigb.org/explore-science/explore/collection/michael-faradays-research-and-work

https://www.wikidata.org/wiki/Q8750

https://www.fhi.mpg.de/873469/Ernst_Ruska

https://www.wikidata.org/wiki/Q71022

NASA Glenn. Historical coefficients retain their original unit conventions.

PAGE 47 / 49

Sources: methods and original records

Source checks completed 8 November 2026. Select a title to open its source. Source names are kept readable; technical records live in the Interactive Library.

Paired observations and the difference between measurements

NIST statistical handbook. The flight dataset in this reader is synthetic and is explicitly labelled.

Confidence limits for a mean

NIST statistical handbook. The worked interval uses independent approximately normal pair differences and nine degrees of freedom.

Otto Lilienthal: Der Vogelflug als Grundlage der Fliegekunst, 1889

ETH-Bibliothek Zürich, Rar 4730, Berlin 1889. Public Domain Mark. Historical text and plates remain distinct from the newly calculated teaching polar.

Lilienthal's glider in the Smithsonian collection

Museum object record. A historical object is evidence about a particular construction, not a certification of a modern copy.

The German Patent and Trade Mark Office: Otto Lilienthal

Documented links among the Lilienthals' inventions, workshop income and research on flight.

The Lilienthal Museum: lectures, books and experiments

Annotated bibliography identifying the 1889 book, later editions, experimental reports and artistic material.

Reynolds number and scale effects

NASA Glenn. Similar geometry does not ensure similar flow.

Power as the rate of energy transfer

The Pampero photograph in the national cultural archive

Institutional article and preserved image. Photographer not named in the supplied record.

The 1902 Wright glider in flight

Library of Congress, Wright Brothers negatives, digital item ppprs.00604.

ON THIS PAGE

NASA National Aeronautics and Space Administration · **NIST** National Institute of Standards and Technology

Argentina: structural design regulations and supporting publications

INTI-CIRSOC. Consult the applicable material and loading rules and local adoption for an actual full-size installation. The scale studies here are not construction approval.

Universal Cell Embeddings: the authors' model repository

Primary model documentation, used to explain the abbreviation on the supplied biomedical diagram.

Mouse Phenome Database

The Jackson Laboratory's primary database.

HOMER: Hypergeometric Optimization of Motif EnRichment

Primary software documentation. This expansion explains the genomics tool label; a reproducible study still records its version.

Consolidated image and artwork credits

This register brings the image and artwork credits together. The original collection and the supplied archive are distinct parts of provenance.

Newbery and Anchorena with the Pampero. Archivo General de la Nación, reproduced by Argentina's Ministry of Culture; photographer not identified. Historical photograph. The collection credit is retained; no new open licence is invented for the digital reproduction.

The original airfoil and lift balance. Orville Wright. Wright State University Libraries, Special Collections and Archives, MS-1, ms1 15 3 2. The collection displays a No Copyright - United States rights statement. Collection reprint services have separate terms.

A Wright glider in flight. Wright Brothers collection, Library of Congress, ppprs.00604; catalog record 2001696487. Library of Congress collection: no known restrictions on publication.

A circling family of storks. Otto Lilienthal, Der Vogelflug als Grundlage der Fliegekunst. Berlin, 1889. ETH-Bibliothek Zürich, Rar 4730. Public Domain Mark, as stated by the holding institution.

Bird flight as the foundation of flight, 1889 title page. Otto Lilienthal, Der Vogelflug als Grundlage der Fliegekunst. Berlin, 1889. ETH-Bibliothek Zürich, Rar 4730. Public Domain Mark, as stated by the holding institution.

Lilienthal's second plate: curved surfaces in still air. Otto Lilienthal, Der Vogelflug als Grundlage der Fliegekunst. Berlin, 1889. ETH-Bibliothek Zürich, Rar 4730. Public Domain Mark, as stated by the holding institution.

Flat and curved surfaces, figure 30. Otto Lilienthal, Der Vogelflug als Grundlage der Fliegekunst. Berlin, 1889. ETH-Bibliothek Zürich, Rar 4730. Public Domain Mark, as stated by the holding institution.

The biomedical tool map supplied by ZeusC. User-supplied ZeusC archive, sheet 097, with original watermark retained. Underlying figure: Kexin Huang and colleagues, Biomni, Figure 1b, 2025 preprint. Underlying figure: Creative Commons Attribution 4.0. ZeusC archive identity and original marks are retained separately.

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INTI-CIRSOC Instituto Nacional de Tecnología Industrial and its Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles

The Wilsonville propulsion illustration supplied by ZeusC. User-supplied ZeusC archive, sheet 103. The sheet names Aurora Aerospace; authorship and institutional status have not been independently established. User-supplied reference with original marks preserved. Underlying ownership and reuse permission are unresolved.

The small portrait-signatures

These are contemporary author artworks bearing Carlos "Charlie" Verbelen, inspired by the person named below each drawing. They are not historical autographs or endorsements. A subject-related design appears only on pages 7, 15, 22, 29, 36 and 43. There is no duplicate beginning-and-end mark.

Page 7: Bernardo Houssay. Born 10 April 1887. Died 21 September 1971. Biological research and the discipline of evidence.

Date reference: Bernardo Houssay

Page 15: Otto Lilienthal. Born 23 May 1848. Died 10 August 1896. The historical book and the measured wing.

Date reference: Otto Lilienthal

Page 22: Orville Wright. Born 19 August 1871. Died 30 January 1948. A small model becomes an experiment.

Date reference: Orville Wright

Page 29: Leonardo Torres Quevedo. Born 28 December 1852. Died 18 December 1936. Mechanical invention and the cost of a working system.

Date reference: Leonardo Torres Quevedo

Page 36: Wilbur Wright. Born 16 April 1867. Died 30 May 1912. Bird observation and the experimental history of flight.

Date reference: Wilbur Wright

Page 43: James Clerk Maxwell. Born 13 June 1831. Died 5 November 1879. Quantities, symbols and physical meaning.

Date reference: James Clerk Maxwell

New explanatory diagrams and teaching calculations were prepared for this book. Historical material, symbolic interpretation, assumed examples and unresolved claims are identified in their captions. A watermark alone does not establish all underlying publication rights.

Previous Interactive Library Whole-book reference

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A Wright glider in flight. Wright Brothers collection, Library of Congress, ppprs.00604; catalog record 2001696487. Library of Congress collection: no known restrictions on publication.

A circling family of storks. Otto Lilienthal, Der Vogelflug als Grundlage der Fliegekunst. Berlin, 1889. ETH-Bibliothek Zürich, Rar 4730. Public Domain Mark, as stated by the holding institution.

Bird flight as the foundation of flight, 1889 title page. Otto Lilienthal, Der Vogelflug als Grundlage der Fliegekunst. Berlin, 1889. ETH-Bibliothek Zürich, Rar 4730. Public Domain Mark, as stated by the holding institution.

Lilienthal's second plate: curved surfaces in still air. Otto Lilienthal, Der Vogelflug als Grundlage der Fliegekunst. Berlin, 1889. ETH-Bibliothek Zürich, Rar 4730. Public Domain Mark, as stated by the holding institution.

Flat and curved surfaces, figure 30. Otto Lilienthal, Der Vogelflug als Grundlage der Fliegekunst. Berlin, 1889. ETH-Bibliothek Zürich, Rar 4730. Public Domain Mark, as stated by the holding institution.

The biomedical tool map supplied by ZeusC. User-supplied ZeusC archive, sheet 097, with original watermark retained. Underlying figure: Kexin Huang and colleagues, Biomni, Figure 1b, 2025 preprint. Underlying figure: Creative Commons Attribution 4.0. ZeusC archive identity and original marks are retained separately.

The Wilsonville propulsion illustration supplied by ZeusC. User-supplied ZeusC archive, sheet 103. The sheet names Aurora Aerospace; authorship and institutional status have not been independently established. User-supplied reference with original marks preserved. Underlying ownership and reuse permission are unresolved.

Historical and technical sources / 1

Luis Federico Leloir: autobiography

First-person account of the research group, patronage, equipment and continuity.

Fundación Instituto Leloir: seventy-five years

Institutional account: the institute opened on 3 November 1947 in Palermo, Buenos Aires.

César Milstein: Nobel autobiography

Argentina, Cambridge and the experimental career behind antibody research.

César Milstein: Nobel facts

Born 8 October 1927 in Bahía Blanca; died 24 March 2002 in Cambridge. Shared the 1984 medicine prize.

Emanuel M. Greenberg: US patent 2,723,660

Filed 22 July 1954; published 15 November 1955. Read the specification and claims as well as the drawings.

Partridge and colleagues: an extra-uterine system for the premature lamb, 2017

Primary animal study, Nature Communications 8:15112. Its scope must not be extended to a demonstrated human clinical treatment.

US Food and Drug Administration: artificial-womb technology meeting, 2023

Historical regulatory discussion of development plans and first-in-human studies. This is not a present-day approval claim.

The Wisdom of the Body: contemporary bibliographic review

Documents Walter B. Cannon's 1932 book; the workshop control examples are new teaching models.

Historical and technical sources / 2

Arne Tiselius: Nobel lecture, 13 December 1948

Electrophoresis and adsorption as methods of investigating large molecules.

Bio-Rad: protein standards and molecular-mass estimation

Manufacturer reference for relative migration and calibration. A standard curve belongs to the stated gel system.

U. K. Laemmli: cleavage of structural proteins during bacteriophage T4 assembly, 1970

Primary paper associated with the widely used discontinuous protein-gel system.

The Metropolitan Museum of Art: Water Clock of the Peacocks

Public-domain manuscript folio dated 715 AH / 1315 CE, from a copy of al-Jazari's treatise. Distinguish manuscript date from author's lifetime.

Ashmolean Museum: a copy of al-Jazari's mechanical treatise

Institutional account of the 1206 work and its later manuscript tradition.

Wellcome Collection: Walter Bradford Cannon

Historical portrait, image M0014715; credited separately from new title art.

Michaelis and Menten's 1913 paper in translation

A reminder that reaction measurements, models and fitting assumptions belong together.

Consolidated artwork credits

ZeusC source images retain their original marks and are each reproduced once in this reader. The protein poster's underlying creator remains unverified. Greenberg's name and patent dates come from the patent record.

The Metropolitan Museum of Art. Folio from al-Jazari's treatise, copy dated 715 AH / 1315 CE. Rogers Fund, 1955 Accession 55.121.15. Public Domain; Met Open Access.

The five title artworks are new interpretations associated with Leloir, Milstein, Cannon, Tiselius and al-Jazari. They are not authenticated likenesses from life. Al-Jazari's imagined portrait is explicitly interpretive. The original manuscript image is separately dated and credited.

The supplied author photograph and navy-and-gold medallion are preserved unchanged. The new author-story artwork uses the author-approved portrait identity. The approved main book cover is retained.

New diagrams are contemporary explanatory illustrations. Illustrated author signatures mark selected historical chapter endings.

The 99 reference photographs are preserved in the source archive. Their useful visual principles inform original parts panels and new prose; the photographed publication's branding and page text are not reproduced in the lessons.

MEANINGS ON THIS PAGE

AH: Anno Hegirae, Islamic calendar year numbering; a lunar-calendar year is not interchangeable with a Common Era year.

ON THIS PAGE

AH Anno Hegirae, Islamic calendar year numbering · **CE** Common Era, historical year notation

CE: Common Era, the year numbering used for the manuscript comparison.

Accession: A unique collection entry used to preserve an item’s identity and source.

Previous Interactive Library Whole-book reference

PAGE 50 / 50

AH: Anno Hegirae, Islamic calendar year numbering; a lunar-calendar year is not interchangeable with a Common Era year.

CE: Common Era, the year numbering used for the manuscript comparison.

Accession: A unique collection entry used to preserve an item’s identity and source.

Historical and technical sources / 1

Museo Nacional del Petróleo, Argentine national heritage record

Archivo General de la Nación: the Comodoro discovery record

SEGEMAR: La rodocrosita de Mina Capillitas

IUPAC Gold Book: alkanes

IUPAC Gold Book: solubility

IUPAC-NIST Solubility Data Series

Smithsonian: corundum, variety ruby

Australian Museum: sapphire and ruby

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Historical and technical sources / 2

Deutsches Museum: Haüy’s 1784 crystal treatise

Royal Institution: Faraday’s original benzene sample

Royal Institution: the name on the 1825 vial

Metropolitan Museum: Greek carnelian scarab, 25.78.94

Library of Congress: Ida Tarbell and the Standard Oil investigation

PAGE 51 / 52

Consolidated artwork credits

The three supplied ZeusC images are preserved with their supplied marks. The hydrocarbon and solvent sheets still have unresolved underlying illustrators. Their limitations are explained beside the new lessons.

The gemstone chart is by Andy Brunning / Compound Interest. The 2016 source chart restores the credit removed from the supplied crop.

Fletcher Fund, 1925; Metropolitan Museum of Art, 25.78.94. Public Domain, Met Open Access.

René Just Haüy; collection image: Deutsches Museum. Public Domain, as stated by the museum.

ON THIS PAGE

CE Common Era, historical year notation · **SEGEMAR** Servicio Geológico Minero Argentino · **IUPAC** International Union of Pure and Applied Chemistry

The five illustrated titles are contemporary interpretations of Haüy, Comodoro and Capillitas, Tarbell, and Faraday. The decorative carved stone on Faraday's cover is not a reproduction of the catalogued scarab; the historical object appears on its own credited plate.

The author portrait was supplied by Carlos "Charlie" Verbelen. Custom author lettering and portrait-signatures are modern artwork, not historical autographs or endorsements.

New vector drawings, counted dry models and interactive calculations were prepared for this reader. The original source images remain available separately in the gallery and recovery files.

Previous Interactive Library Whole-book reference

PAGE 52 / 52

New vector drawings, counted dry models and interactive calculations were prepared for this reader. The original source images remain available separately in the gallery and recovery files.

flag

Government of Argentina. Argentina: national symbols

https://www.argentina.gob.ar/interior/asuntos-politicos-e-institucionales/simbolos-nacionales

rosario

Government of Argentina. Monumento Nacional a la Bandera

https://www.argentina.gob.ar/cultura/monumentos/monumento-nacional-la-bandera

moreau

Musée Gustave Moreau. Jupiter et Sémélé, collection record

https://musee-moreau.fr/fr/collection/objet/jupiter-et-semele

oneida

Oneida Nation of the Thames. The Oneida Creation Story

https://oneida.on.ca/about/oneida-creation-story/

oneida2

Oneida Nation, Wisconsin. Creation Story

https://oneida-nsn.gov/our-ways/creation-story/

brendan

Library of Congress, Geography and Map Division. Searching for Saint Brendan's Island

https://blogs.loc.gov/maps/2021/04/searching-for-saint-brendans-island/

ortelius

Library of Congress. Ortelius Atlas

https://www.loc.gov/collections/general-maps/articles-and-essays/general-atlases/ortelius-atlas/

seal

United States National Archives. Original Design of the Great Seal, 1782

https://www.archives.gov/milestone-documents/original-design-of-the-great-seal-of-the-united-states

Government of Argentina. Monumento Nacional a la Bandera

https://www.argentina.gob.ar/cultura/monumentos/monumento-nacional-la-bandera

sealdies

United States Department of State. The Great Seal of the United States

https://1997-2001.state.gov/www/publications/great_seal.pdf

alchemist

National Gallery of Art. The Alchemist, 1663

https://www.nga.gov/research/publications/online-editions/dutch-paintings-seventeenth-century-alchemist-1663

stupa

Rubin Museum of Himalayan Art. Stupa

https://rubinmuseum.org/highlights/stupa/

stupa2

International Dunhuang Programme, British Library. Buddhist Stupas

https://idp.bl.uk/discover/exhibitions/aurel-stein-a-hundred-years-on/buddhist-stupas/

elements

NASA Goddard Space Flight Center; data compiled by Jennifer Johnson. Periodic Table of the Elements: Origins of the Elements

https://svs.gsfc.nasa.gov/13873/

moon

National Aeronautics and Space Administration. Moon phases

https://science.nasa.gov/moon/moon-phases/

exam

Bullitt County History Museum. 1912 School Exam: answers and original questions

https://bullittcountyhistory.org/bchistory/schoolexam1912ans.html

supplied

Supplied archive; underlying creators vary. ZeusC sourceimage collection supplied for this book

Rubin Museum of Himalayan Art. Stupa

https://rubinmuseum.org/highlights/stupa/

ats

Antarctic Treaty Secretariat. The Antarctic Treaty

https://www.ats.aq/e/antarctictreaty.html

ON THIS PAGE
NASA National Aeronautics and Space Administration

kybalion

Three Initiates; Project Gutenberg transcription. The Kybalion, consulted edition 1912

https://www.gutenberg.org/cache/epub/14209/pg14209-images.html

memorial

National September 11 Memorial & Museum. Trying to Remember the Color of the Sky on That September Morning

https://www.911memorial.org/connect/blog/trying-remember-color-sky-september-morning

eda

National Institute of Standards and Technology. Exploratory Data Analysis: introduction

https://www.itl.nist.gov/div898/handbook/eda/section1/eda11.htm

Three Initiates; Project Gutenberg transcription. The Kybalion, consulted edition 1912

https://www.gutenberg.org/cache/epub/14209/pg14209-images.html

AR1

Government of the City of Buenos Aires. Torre Monumental: the building and its clock

https://buenosaires.gob.ar/gcaba_historico/cultura/patrimonio-de-la-ciudad/torre-monumental/escudos-y-emblemas/torre-monumental/historia-de-la-torre-m

City history identifies the Britishresident centenary gift, construction in 19121916, architect Ambrose Macdonald Poynter and Gillett & Johnston clock. Four dials and quarter/hour bells have distinct functions. The city describes electrical assistance to the mechanical system; this is not our inspection report.

AR2

Servicio de Hidrografía Naval, Observatorio Naval Buenos Aires. Argentina: historical and current civiltime offsets

https://www.hidro.gov.ar/observatorio/LaHora.asp?op=3

Official table states that UTC3 continues from 15 March 2009. Checked 7 November 2026. A dated rule must accompany any historical conversion; today's offset cannot be projected backwards.

AR3

Instituto Nacional de Tecnología Industrial. Hora INTI: the reference behind a displayed time

https://www.inti.gob.ar/hora-inti

Institutional explanation of the atomic time scale and its distribution. It identifies the naval observatory separately as the authority determining Argentine official time. Internet reception, display resolution and accuracy are distinct.

AR4

Gaboto2018; Wikimedia Commons repository record. Torre Monumental, 31 October 2015

https://commons.wikimedia.org/wiki/File:Torre_Monumental_(antigua_Torre_de_los_Ingleses)_2015-10-31.jpg

ON THIS PAGE

= equals

Dated modern documentary photograph. Creative Commons AttributionShareAlike 4.0 International. Repository 1920pixelwide rendition; complete frame, no new retouching.

US1

S. T. Smith, General Superintendent, Kansas Division, Union Pacific Railway; University of NebraskaLincoln digital history project. An actual railway timechange order, November 1883

https://railroads.unl.edu/documents/view_document_id=rail.gen.0002.html

Order issued 14 November, effective 18 November 1883. East of Wallace: 8:51 becomes 9:00; west: 8:01 becomes 8:00. Meridian references are 90° and 105° west. The primary transcript separates clock setting, telegraphic comparison and acknowledgment. We do not adopt its modern editorial geographical gloss.

Servicio de Hidrografía Naval, Observatorio Naval Buenos Aires. Argentina: historical and current civiltime offsets

https://www.hidro.gov.ar/observatorio/LaHora.asp?op=3

Official table states that UTC3 continues from 15 March 2009. Checked 7 November 2026. A dated rule must accompany any historical conversion; today's offset cannot be projected backwards.

US2

National Institute of Standards and Technology. Timekeeping and clocks: counting periodic events

https://www.nist.gov/pml/time-and-frequency-division/timekeeping-and-clocks-faqs

Explains clocks through a periodic process and a means of counting it. Our offset logs, uncertainty bounds and service diagrams are original teaching examples, not laboratory certification.

US3

United States Naval Observatory, Astronomical Applications Department. Computing approximate sidereal time

https://aa.usno.navy.mil/faq/GAST

Distinguishes mean and apparent sidereal time and supplies the rate relationship to Universal Time. Our day comparison uses the familiar approximate mean sidereal day of 23 h 56 min 4 s. It is not a prediction of a particular star transit.

US4

National Aeronautics and Space Administration. Moon phases

https://science.nasa.gov/moon/moon-phases/

Explains illumination by the Sun and the roughly 27.3day orbital and 29.5day phase cycles. The 59tooth teaching wheel is our invented demonstrator; no such gear count is attributed here to Prague or Rouen.

US5

Library of Congress, Prints and Photographs Division; unidentified photographer. Prague: astronomical clock, historical albumen photograph

ON THIS PAGE

= equals · **°** degree, an angle unit · **h** hour, 60 minutes · **min** minute, 60 seconds · **s** second, a time unit

Catalogue 94512610; digital identifier cph.3c09004; LOT 7739, page 151, No. 298. Date range 18601890. Do not reduce this interval to an exact exposure year. Catalogue states no known restrictions on publication in the United States.

https://www.loc.gov/item/94512610/

US6

Library of Congress, Prints and Photographs Division; Photochrom Print Collection. The great clock, Rouen, France

https://www.loc.gov/item/2001698689/

Catalogue 2001698689; digital identifier ppmsc.05346; print number 6954. Circa 1890circa 1900. This is a colour photochrom print, not evidence of the original scene's exact colours. Catalogue states no known restrictions on reproduction.

US7

Dirk Huizenga (Zenhaus), photograph 14 April 2013. Historic clockworks in the Daniels & Fisher Tower, Denver

https://commons.wikimedia.org/wiki/File:Dh130414-144645.jpg

Repository description identifies SethThomas clockworks, serial 1688, 26 August 1911. Photographer reports replacement by an electric drive; the image alone cannot establish its date or current operating arrangement. Creative Commons AttributionShareAlike 3.0 Unported.

US8

OpenStax, University Physics Volume 1, section 15.4. Pendulums: the limits of a simple model

https://openstax.org/books/university-physics-volume-1/pages/15-4-pendulums

EU1

Prague City Tourism. Old Town Hall with the astronomical clock

https://prague.eu/en/objevujte/old-town-hall-with-astronomical-clock-staromestska-radnice-s-orlojem

Official description distinguishes the Roman time scale, outer oldBohemian sunsetbased scale, unequal daylight hours and sidereal indicator. The medieval mechanism, later calendar, sculptures and present appearance must have separate histories.

EU2

Alena Hadravová and Petr Hadrava; International Astronomical Union, 2007. Astronomy in Prague: from the past to the present

https://www.cambridge.org/core/services/aop-cambridge-core/content/view/89E28D78C24451EAD1A89C5B3825B786/S1743921307009817a.pdf/astronomy-in

Historical paper credits Mikuláš of Kadaň with construction on the astronomical recommendations of Jan Šindel. Used to distinguish documented attribution from the later Master Hanuš blinding legend. The earlier book link to an Academyhosted guide was unavailable in this check.

Repository description identifies SethThomas clockworks, serial 1688, 26 August 1911. Photographer reports replacement by an electric drive; the image alone cannot establish its date or current operating arrangement. Creative Commons AttributionShareAlike 3.0 Unported.

EU3

City of Rouen. GrosHorloge: what the displays mean

https://rouen.fr/gros-horloge

Official account identifies the Gothic belfry, Renaissance pavilion, single hour hand, lunar globe and weekday figure changing at noon. Sheep imagery relates to wool and the city’s paschal lamb emblem. Our separated mechanism drawings are teaching models, not surveyed reconstructions.

EU4

Rouen Normandie Tourisme. Le GrosHorloge: the medieval mechanism

Dates the mechanism to 1389 and explicitly reports electrical operation since the 1920s. The description also gives the weekday deity sequence. These are attributed institutional descriptions, not our inspection or certification of the mechanism’s present

Dates the mechanism to 1389 and explicitly reports electrical operation since the 1920s. The description also gives the weekday deity sequence. These are attributed institutional descriptions, not our inspection or certification of the mechanism’s present condition.

https://www.visiterouen.com/offres/le-gros-horloge-rouen-fr-3940868/

EU5

Jacek Halicki. Prague astronomical dial, 23 August 2015

https://commons.wikimedia.org/wiki/File:2015_Zegar_astronomiczny_w_Pradze_03.jpg

Creative Commons AttributionShareAlike 4.0 International. Existing full book rendition preserved; the repository photographer’s recorded edits predate this edition. We apply no new retouching.

EU6

Ytierny. GrosHorloge detail, 13 September 2013

https://commons.wikimedia.org/wiki/File:Gros-Horloge,_d%C3%A9tail.jpg

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EU7

Institute of Conservation. Care and conservation of clocks

https://www.icon.org.uk/static/bd0645a5-b050-46ae-bf17138c18e887bc/careandconservationofclocks.pdf

Professional conservation guidance. Inappropriate oiling and untrained intervention can damage a movement. Our records chapter concerns documentation, observation and referral; it does not supply a dismantling or servicing recipe.

Dates the mechanism to 1389 and explicitly reports electrical operation since the 1920s. The description also gives the weekday deity sequence. These are attributed institutional descriptions, not our inspection or certification of the mechanism’s present condition.

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EU8

Pastorius, original diagram; Leonard G., English modifications. Schema Orloj: original and Englishlabelled diagram

https://commons.wikimedia.org/wiki/File:Schema_Orloj_en.png

English diagram visually matched to supplied ZeusC sheet 236. Original record: https://commons.wikimedia.org/wiki/File:Schema_Orloj.png . Original Czech upload 24 January 2006; English file version dated 4 January 2007; Creative Commons AttributionShareAlike 3.0 Unported selected from the offered licences. The supplied sheet adds the ZeusC mark and changes the raster presentation. Its ambiguous labels are discussed, not silently endorsed.

WO1

Kohara Gear Industry, KHK technical reference. Calculation of gear dimensions

https://khkgears.net/new/gear_knowledge/gear_technical_reference/calculation_gear_dimensions.html

For standard unshifted external spur gears, reference diameter equals module times tooth count. Nominal centre distance equals module times the sum of the two tooth counts, divided by two. Tooth profiles, tolerances and bearing fits require real component data; our pitchcircle diagrams are distinct from the separate original cardmodel cutting patterns and their stated prototype limits.

WO2

Biblioteca Nacional de España. The Compleat Orrery: collection lead

https://bdh.bne.es/bnesearch/detalle/bdh0000130867

The nationallibrary watermark is visible in supplied sheet 397. Direct catalogue access failed during this check. No unviewed catalogue fields are asserted. Identification is supported by the visible print and the matched published facsimile in WO3; catalogue and reusedetail verification remain open.

WO3

Jadranka Ryle, Reinventing the Yggdrasil, InFormation 7(1), 2018, figure 10, page 22. Published facsimile identifying the Dunn print

The matching facsimile credits Samuel Dunn, The Compleat Orrery Described by S. Dunn, published by Robert Wilkinson, London, 1780; image source Biblioteca Nacional de España. We use this bibliographic identification, not the paper's arthistorical argument.

The matching facsimile credits Samuel Dunn, The Compleat Orrery Described by S. Dunn, published by Robert Wilkinson, London, 1780; image source Biblioteca Nacional de España. We use this bibliographic identification, not the paper's arthistorical argument. The modern paper is not reproduced in the reader.

https://journals.oslomet.no/index.php/ar/article/download/2629/2787/9744

Z1

Visible Nina Pastuhova signature; ZeusC archive mark. Supplied sheet 235: Rouen clock photograph

Exact original from book_images_pdf_frames_ZeusC (1).zip. The signature's web address is preserved in the image. Exposure date, original posting and independent reproduction licence have not been verified. Do not assign Ytierny's separate credit or licence to this sheet.

Z2

Pastorius / Leonard G. underlying diagram; ZeusC archive mark. Supplied sheet 236: Prague dial labels

https://commons.wikimedia.org/wiki/File:Schema_Orloj_en.png

Original supplied bytes are preserved. Native vector teaching drawings are newly composed; labels such as Mean Solar Ecliptic and Mean Revolutions of the Moon require explanation. Siderial is retained only as the source's spelling and corrected to sidereal in the lessons.

Z3

S. Dunn in the visible title; Biblioteca Nacional de España watermark; ZeusC archive mark. Supplied sheet 397: The Compleat Orrery

Original supplied bytes are preserved. Matched facsimile identifies Samuel Dunn, Robert Wilkinson and London, 1780, as detailed in WO3. Dense source lettering is not guessed or invented; original vectors explain selected principles separately.

M1

Original Edition 60 teaching work by Carlos "Charlie" Verbelen. Declared calculations and original teaching diagrams

Reproducible arithmetic covers clock offset and rate, endpoint reading bounds, pendulum sensitivity, a 12:1 compound gear train, unequal daylight hours, a sevenposition index and a 59tooth lunar demonstrator. Examples are invented, clearly labelled and unrelated to measured performance of any named monument.

AR5

Selplast. Ibico 30 cm steel rule 770100: dated price anchor

https://www.selplast.com.ar/productos/regla-metal-acero-30-cm-ibico-770100-cr-46237/

Checked 7 November 2026: ARS 2784.00. Opened retailer page; displayed consumer price; separate taxexclusive amount 2300.83; conditional discounts excluded. Stock, freight and checkout were not confirmed. Budget allowances are separately identified as author estimates.

Original supplied bytes are preserved. Native vector teaching drawings are newly composed; labels such as Mean Solar Ecliptic and Mean Revolutions of the Moon require explanation. Siderial is retained only as the source's spelling and corrected to sidereal in the lessons.

AR6

Canelo Herramientas. Metal cutter 18 mm: dated price anchor

https://caneloherramientas.empretienda.com.ar/herramientas/cutter-metalico-18mm

Checked 7 November 2026: ARS 6877.50. Opened retailer page; current displayed amount differs from an older discounted search snippet; no separate tax breakdown in retrieved view. Stock, freight and checkout were not confirmed. Budget allowances are separately identified as author estimates.

AR7

Pluma Magica. Tintoretto vinyl adhesive 100 g: dated price anchor

https://plumamagica.empretienda.com.ar/escolar/adhesivos/plasticolaadhesivo-vinilico-tintoretto-x-100gr

Checked 7 November 2026: ARS 860.00. Opened retailer page; transferpayment discount excluded; no separate tax breakdown in retrieved view. Stock, freight and checkout were not confirmed. Budget allowances are separately identified as author estimates.

ON THIS PAGE

cm centimetre, 0.01 metre · **ARS** Argentine peso · **mm** millimetre, 0.001 metre · **g** gram, 0.001 kilogram

US9

Harbor Freight. Pittsburgh 12 inch steel rule 66199: dated price anchor

https://www.harborfreight.com/hand-tools/measuring-marking-layout/rulers-squares/12-inch-stainless-steel-ruler-66199.html

Checked 7 November 2026: USD 2.49. Primary retailer indexed listing; direct page refresh returned 403. Before tax and shipping. Stock, freight and checkout were not confirmed. Budget allowances are separately identified as author estimates.

US10

Harbor Freight. Gordon utility knife: dated price anchor

https://www.harborfreight.com/home/moving/utility-knives.html

Checked 7 November 2026: USD 2.49. Primary retailer indexed category; direct refresh returned 403. Before tax and shipping. Stock, freight and checkout were not confirmed. Budget allowances are separately identified as author estimates.

US11

Walmart. Elmer's washable school glue 4 US fluid ounces: dated price anchor

https://www.walmart.com/browse/office-supplies/elmer-s-school-glue/1229749_1431586_8883644_4514580_8093153

Checked 7 November 2026: USD 1.17. Primary retailer indexed category. Separate locationdependent promotional view showed 0.50; promotion not assumed. Before tax and shipping. Stock, freight and checkout were not confirmed. Budget allowances are separately identified as author estimates.

Harbor Freight. Pittsburgh 12 inch steel rule 66199: dated price anchor

https://www.harborfreight.com/hand-tools/measuring-marking-layout/rulers-squares/12-inch-stainless-steel-ruler-66199.html

Checked 7 November 2026: USD 2.49. Primary retailer indexed listing; direct page refresh returned 403. Before tax and shipping. Stock, freight and checkout were not confirmed. Budget allowances are separately identified as author estimates.

US12

National Institute of Standards and Technology. A Walk Through Time: early clocks

https://www.nist.gov/pml/time-and-frequency-division/popular-links/walk-through-time/walk-through-time-early-clocks

Archived historical account, version accurate as of 2004. Describes waterlevel clocks and the difficulty of controlling water flow. Our bottle timer and calibration procedure are original workshop proposals, not a reconstruction or a physically tested product.

WO4

Brian Dengel, KHKUSA / Gear Solutions. Determining tooth thickness of various gear types

https://khkgears.us/media/1bge1lkj/gear-solutions_khk_how-to-calculate-the-nominal-values-of-chordal-tooth-thickness-in-all-types-of-gearing.pdf

ON THIS PAGE

USD United States dollar · **US** United States

Manufacturerauthored discussion of nominal tooth thickness and allowance for backlash. The separate moduletwo card patterns use original calculated involute flanks, a declared 0.20 mm total tooth thinning, and simplified root joins. They are geometrically checked, not physically prototypetested or strengthrated.

Historical object

The two Ohm plates come from the supplied copy of the Smithsonian Libraries digitization of the 1827 book. The historical original is public domain. The complete retained source scan accompanies this reader. In the eventual full-book merge, existing historical plates are to be linked rather than inserted a second time.

Supplied ZeusC originals

Sheets 355 and 358 retain their original dimensions, pixels and watermarks. Their source identities are preserved in the recovery records. The visible mark identifies the supplied version; it does not

Sheets 355 and 358 retain their original dimensions, pixels and watermarks. Their source identities are preserved in the recovery records. The visible mark identifies the supplied version; it does not establish the underlying compiler's identity or grant a new publication licence. These rights questions remain open.

New explanatory drawings

Eight new teaching plates and one actual-size label sheet are supplied as editable SVG files. SVG means Scalable Vector Graphics. Their calculations are constructed examples, not new experimental measurements. Circuit geometry is explicit; the physical bench drawing is illustrative and does not specify a particular breadboard model.

Sheets 355 and 358 retain their original dimensions, pixels and watermarks. Their source identities are preserved in the recovery records. The visible mark identifies the supplied version; it does not establish the underlying compiler's identity or grant a new publication licence. These rights questions remain open.

Portrait-signature

The saved combined design CCV-P0262 is used at the closing, with Ohm's name and dates. It remains a modern interpretive artwork with the author's lettering. The larger 379-design collection remains preserved in the earlier recovery. No random portrait replaces the historical connection.

A reading edition and a print template

The A4 file is laid out for ordinary A4 printing. The smaller-screen PDF reflows the text. Both retain searchable text and internal navigation. This is not a publisher-certified paperback, hardcover or Kindle file. The actual-size label sheet should be printed from A4 at 100%, then checked with a ruler.

Follow the evidence

Sources checked on 12 November 2026. Select a title to open the record. A source identifier such as R01 points to a record, not a confidence rating. Full addresses and image-preservation hashes are included in the recovery files.

The historical person

Ernő Rubik, photographed at the 2014 Genius Gala by Babak Mansouri. The photographer's public-domain dedication is recorded with the image. The downloaded photograph is unchanged. [R08]

ON THIS PAGE

mm millimetre, 0.001 metre · **PDF** Portable Document Format · **%** percent, parts per hundred

The historical mechanism

Hungarian patent 170062 is retained in full as an official historical document. Two complete pages are reproduced in the gallery, and additional full-page renders accompany the archive. The source's marks remain intact. The printed issue date and the catalogue date are discussed explicitly. [R04, R06]

The supplied poster

The ZeusC sheet retains its source pixels and watermark. Its original compiler and republication rights have not been established. Keep the source record with any later use. The standalone checkpoint preserves it for recovery; the full-book merge must link one gallery copy rather than insert repeated posters.

The new diagrams

Twelve editable SVG files explain piece counts, moves, conditions, history, constraints, scale and records. Two are actual-size A4 print sheets. Cube states come from the tested coordinate model. The anatomy builds have not been physically prototyped; dimensions and times are plans to verify.

Print and digital reading

The A4 reader is intended for ordinary printing. The smaller-screen PDF reflows the prose, and the HTML includes editable records and calculations. These are reading editions, not a completed printer-certified paperback, hardcover or Kindle conversion. The original complete-book cover remains unchanged.

reflows the prose, and the HTML includes editable records and calculations. These are reading editions, not a completed printer-certified paperback, hardcover or Kindle conversion. The original complete-book cover remains unchanged.

Follow the evidence

Checked 13 November 2026. Select a source title to open its record. R plus a number identifies a source, not a confidence score.

Historical objects

Image credits are beside the six gallery objects. The Missouri catalogue is used for record comparison; its separate noncommercial image licence is not confused with its open metadata. No Missouri specimen image is reproduced. The Lorentz likeness reference comes from the Museo Botánico de Córdoba history page. The Asa Gray reference is Smithsonian Institution Archives SIA2009-1252, circa 1855; that page carries usage conditions. Anna Atkins's 1861 portrait is a public-domain albumen print by an unidentified maker. [H02, H04, H25, H26]

Seven new covers

The field-herbarium front and six chapter covers are newly illustrated interpretations. Their scenery, specimen arrangements, decorative labels and symbolic details are not documentary reconstructions or specimen determinations. Ghini's likeness is imagined. Exact construction dimensions belong to the vector plates. The complete book's approved main cover is unchanged.

ON THIS PAGE

SVG Scalable Vector Graphics · **PDF** Portable Document Format · **HTML** HyperText Markup Language, the browser reader format

The small portrait-signatures

The saved Anna Atkins mark is retained for the imaging chapter. The Lorentz and Culpeper sign-offs combine the documented portrait with the author's original lettering. They are placed at chapter endings with space around them. They are not historical autographs or endorsements. The inherited 379-mark collection remains in the earlier recovery archive.

The Field Herbarium · 65 / 69 Previous Next

Supplied originals

The six source images are relevant inherited or newly retrieved collection objects. No unrelated ZeusC poster is inserted to fill space. The wider ZeusC image archives and watermarks remain in the parent recovery; their credits must follow them when reused.

Print and digital use

The A4 reader has selectable text and vector diagrams. The mobile PDF uses larger type relative to its page. The HTML reader includes editable records. Cover art is preserved at its native resolution and has not been certified as a full-page 300-pixel-per-inch print master. Paperback, hardcover and Kindle production remain later format work.

A practical design to verify

The twelve-packet press is an original teaching design informed by the cited methods. It has not been physically prototyped for this edition. Check board stiffness, buckle grip, airflow and drying performance with suitable material before relying on it for a collection. Receiving institutions set their own requirements.

The Field Herbarium · 66 / 69 Previous Next

The six source images are relevant inherited or newly retrieved collection objects. No unrelated ZeusC poster is inserted to fill space. The wider ZeusC image archives and watermarks remain in the parent recovery; their credits must follow them when reused.

Uncertainty and unquoted items are marked in rust. Missing information remains visible.

Colour is an aid, not the only key. The words remain readable in monochrome. The HTML reader lets you turn prose colour emphasis off.

The Field Herbarium · 67 / 69 Previous Next

Follow the evidence

Sources checked 13 November 2026. H followed by a number identifies a source record. Select a title to open the source.

H12 · Biodiversity Information Standards: Darwin Core quick reference guide

The Field Herbarium · 68 / 69 Previous Next

Sources checked 13 November 2026. H followed by a number identifies a source record. Select a title to open the source.

H26 · Anna Atkins portrait, albumen print, 1861, unidentified maker

The Field Herbarium · 69 / 69 Previous

ON THIS PAGE

PDF Portable Document Format · HTML HyperText Markup Language, the browser reader format

Historical objects

The source gallery identifies each object and its rights statement. The Burkart likeness was researched through the Instituto Darwinion history. Grinnell's likeness was checked against the 1939 memorial portrait, dated 14 March 1930. Those reference photographs are not presented as freely licensed gallery plates. The new painted likenesses are interpretive, not facsimiles. [H07, H33]

Seven illustrated covers

Chañar · 82 / 87 Previous Next

Supplied originals

The three relevant inherited plant images keep their full frames and credits. Repeated versions are preserved in the recovery records rather than repeated as lesson illustrations. The wider ZeusC originals and their watermarks remain in the parent archive. They should accompany later subjects where they supply relevant evidence.

Format and image quality

Text and vector diagrams remain sharp when enlarged. Cover art is stored at its native pixel dimensions, without claiming an untested print-resolution enlargement. The PDF navigation works internally; editable calculations and records are in the offline HTML workbench. External source links need an internet connection.

Workshop status

Chañar · 83 / 87 Previous Next

The three relevant inherited plant images keep their full frames and credits. Repeated versions are preserved in the recovery records rather than repeated as lesson illustrations. The wider ZeusC originals and their watermarks remain in the parent archive. They should accompany later subjects where they supply relevant evidence.

Unknown, uncertainty and unquoted entries are marked in rust.

Colour is an aid, not the only key. The words remain readable in monochrome. The HTML reader lets you turn prose colour emphasis off.

Chañar · 84 / 87 Previous Next

Follow the evidence

H followed by a number identifies a source record. Sources and price anchors checked 13 November 2026. Select a title to open it.

H13 · Dick Culbert: chañar fruit, La Rioja, 13 April 2009

Chañar · 85 / 87 Previous Next

H followed by a number identifies a source record. Sources and price anchors checked 13 November 2026. Select a title to open it.

H28 · Harbor Freight: digital caliper, item 63711, dated price anchor

Chañar · 86 / 87 Previous Next

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PDF Portable Document Format · HTML HyperText Markup Language, the browser reader format

H34 · Bancroft Library: Joseph and Hilda Wood Grinnell Papers

Chañar · 87 / 87 Previous

The original frames

The source gallery preserves each supplied frame and its documented credit. ZeusC is credited for the supplied dome designs where identified by the author. Historical photographs and prints retain their separate creators and rights. Original artwork does not establish technical capacity.

New illustrations

The chapter covers are modern interpretations linking a historical person, place and relevant objects. They are not photographs of a historical event. Vector diagrams are new explanatory drawings;

The chapter covers are modern interpretations linking a historical person, place and relevant objects. They are not photographs of a historical event. Vector diagrams are new explanatory drawings; dimensioned templates state their scale. The approved main cover of the complete book remains unchanged.

Quality and use

The original raster files retain their native dimensions. They are not certified as 300 ppi full-page print masters. Text, vector drawings and patterns can be enlarged without raster pixelation. The PDF contains working navigation; editable records and calculations are in the offline workbench.

The chapter covers are modern interpretations linking a historical person, place and relevant objects. They are not photographs of a historical event. Vector diagrams are new explanatory drawings; dimensioned templates state their scale. The approved main cover of the complete book remains unchanged.

person, place and relevant objects. They are not photographs of a historical event. Vector diagrams are new explanatory drawings; dimensioned templates state their scale. The approved main cover of the complete book remains unchanged.

Costs and time

Worked prices are hypothetical allowances unless a supplier, date, currency and product are explicitly recorded. The projects are proposed teaching activities; actual assembly time and physical performance have not been tested for this edition.

Measurements, quantities and prices

Gold: dimensions, quantities, time and prices. Example: 350 × 250 mm.

People and historical accounts

Purple: people and historical accounts.

Places

Blue: places, regions and jurisdictions.

Materials and tools

Brown: materials, tools and physical components.

Living systems

Green: plants, organs and living systems.

ON THIS PAGE

PDF Portable Document Format · **mm** millimetre, 0.001 metre · **×** multiplied by

Unresolved or conditional claims

Rust: unknowns, assumptions and conditional claims.

The label and unit carry the meaning even in monochrome. The HTML colour switch can remove prose highlighting.

Green: plants, organs and living systems.

Follow the evidence

H followed by a number points to a source below. Sources checked 14 November 2026.

H01 · Buenos Aires historical calendar: Bonpland arrives in 1817

H02 · Argentina, 9 April 2025: cherry origin designation is official

H03 · Cereza del Valle de Los Antiguos Patagonia: specification and Resolution 49/2025

H04 · INTA, January 2024: Patagonian cherries and local knowledge

H05 · University of Nebraska: Journals of the Lewis and Clark Expedition, 29 May 1806

H06 · USDA NRCS: chokecherry plant fact sheet

H07 · Ecological calendars, food sovereignty and climate adaptation at Standing Rock, 2022

H08 · Biodiversity Heritage Library: The North American Sylva, edition records

H09 · Kew: Cerasus virginiana nomenclatural record

H10 · University of Alaska Fairbanks: chokecherries, extraction and freezing

H11 · NIST Handbook 44, Appendix C: units of measurement

H12 · National Park Service: Meriwether Lewis

Charles Willson Peale. Public domain. Portrait of Meriwether Lewis.

https://commons.wikimedia.org/wiki/File:Meriwether_Lewis-Charles_Willson_Peale.jpg

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H01 · Buenos Aires historical calendar: Bonpland arrives in 1817

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H06 · USDA NRCS: chokecherry plant fact sheet

H07 · Ecological calendars, food sovereignty and climate adaptation at Standing Rock, 2022

H08 · Biodiversity Heritage Library: The North American Sylva, edition records

H09 · Kew: Cerasus virginiana nomenclatural record

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HTML HyperText Markup Language, the browser reader format · **INTA** Instituto Nacional de Tecnología Agropecuaria · **USDA** United States Department of Agriculture · **NRCS** Natural Resources Conservation Service · **NIST** National Institute of Standards and Technology

H10 · University of Alaska Fairbanks: chokecherries, extraction and freezing

H11 · NIST Handbook 44, Appendix C: units of measurement

H12 · National Park Service: Meriwether Lewis

François André Michaux. Public domain. Daguerreotype of François André Michaux. Image courtesy of the Harvard University Library.

https://commons.wikimedia.org/wiki/File:Fran%C3%A7ois_Andr%C3%A9_Michaux_daguerre

The original frames

credit. ZeusC is credited for the supplied dome designs where identified by the author. Historical photographs and prints retain their separate creators and rights. Original artwork does not establish technical capacity.

The replacement dome sources

The author selected three replacement Quadrosphere images on 14 November 2026 and confirmed ZeusC as their creator. The reading gallery uses those replacements. Superseded files remain only in the

The author selected three replacement Quadrosphere images on 14 November 2026 and confirmed ZeusC as their creator. The reading gallery uses those replacements. Superseded files remain only in the recovery history.

November 2026 and confirmed ZeusC as their creator. The reading gallery uses those replacements. Superseded files remain only in the recovery history.

Follow the evidence

H01 · Canadian Centre for Architecture: Amancio Williams fonds

H02 · INTI: timber construction and CIRSOC resources

H03 · R. Buckminster Fuller, US Patent 2,682,235, 29 June 1954

H04 · Buckminster Fuller Institute: geodesic domes

H05 · ZEISS Archives: history of planetariums

H06 · CPSC: Public Playground Safety Handbook, July 2025

H07 · European Commission JRC: Eurocode 5, timber structures

Walther Bauersfeld

GFHund. CC BY 3.0. Walther Bauersfeld, Mathematical Society Jena, visitors' conference at Abbeanum in Jena, 26th until 28th October 1930. (Cropped from File:Mathematische Gesellschaft Jena 1930.jpg)

https://commons.wikimedia.org/wiki/File:Bauersfeld,Walther_1930_Jena.jpg

Costs and time

Worked prices are hypothetical allowances unless a supplier, date, currency and product are explicitly recorded. The projects are proposed teaching activities; actual assembly time and physical performance have

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NIST National Institute of Standards and Technology · **INTI** Instituto Nacional de Tecnología Industrial · **CIRSOC** Centro de Investigación de los Reglamentos Nacionales de Seguridad para las Obras Civiles · **US** United States · **BY** Attribution condition in a Creative Commons licence

Follow the evidence

H01 · UNLP: Carlos Spegazzini, life and legacy

H02 · Argentina National Parks: Taraxacum officinale record

H03 · University of California: dandelion identification and life cycle

H04 · Harvard University Herbaria: Gray's Manual of Botany

H05 · NCCIH: dandelion evidence and safety

H06 · FDA: seven tips for cleaning fruits and vegetables

H07 · Albertina, inventory 3075: Dürer's Great Piece of Turf, 1503

H08 · Cummins and colleagues, 2018: A separated vortex ring underlies the flight of the dandelion

H09 · Maryland Department of Natural Resources: George Jamar's dandelion greens, including the oil alternative

Asa Gray

John Adams Whipple. CC0. Asa Gray by John Adams Whipple, 1861, albumen silver print, from the National Portrait Gallery which has explicitly released this digital image under the CC0 license.

John Adams Whipple. CC0. Asa Gray by John Adams Whipple, 1861, albumen silver print, from the National Portrait Gallery which has explicitly released this digital image under the CC0 license. (https://npg.si.edu/object/npg_NPG.77.174)

https://commons.wikimedia.org/wiki/File:Asa_Gray_by_John_Adams_Whipple,_1861,_album

albumen silver print, from the National Portrait Gallery which has explicitly released this digital image under the CC0 license. (https://npg.si.edu/object/npg_NPG.77.174)

https://commons.wikimedia.org/wiki/File:Asa_Gray_by_John_Adams_Whipple,_1861,_album

Albrecht Dürer

Albrecht Dürer. Public domain. Dürer painted himself half-length and slightly turned, beside a window that opens onto a mountainous landscape. Dürer painted himself with an open black and white doublet with a striped cap, an undershirt trimmed with go

https://commons.wikimedia.org/wiki/File:Selbstportr%C3%A4t,_by_Albrecht_D%C3%BCrer,_f

BOOK VII · WISDOM AND VISUAL LANGUAGE

Visual poetry

Planetary image comparison

NASA, Cydonia observations and image parameters https://nssdc.gsfc.nasa.gov/planetary/mgs_cydonia.html

Historical microscopy

Nobel Prize, Santiago Ramón y Cajal https://www.nobelprize.org/prizes/medicine/1906/cajal/facts/

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UNLP Universidad Nacional de La Plata · **NCCIH** National Center for Complementary and Integrative Health · **FDA** Food and Drug Administration, the United States regulatory agency named in the dated source · **CC0** Creative Commons Zero, a public-domain dedication tool · **NASA** National Aeronautics and Space Administration

Brain landmarks

National Institute of Mental Health, Get to Know Your Brain, 2023
https://www.nimh.nih.gov/news/media/2023/get-to-know-your-brain

Taste

National Institute on Deafness and Other Communication Disorders, Taste Disorders
https://www.nidcd.nih.gov/sites/default/files/taste-disorders.pdf

Pitkanen and colleagues, Diagnosing and Managing Velopharyngeal Insufficiency, DOI 10.1097/SCS.0000000000009822 https://pmc.ncbi.nlm.nih.gov/articles/PMC12020403/

BOOK VII · WISDOM AND VISUAL LANGUAGE

Palatal function

Pitkanen and colleagues, Diagnosing and Managing Velopharyngeal Insufficiency, DOI 10.1097/SCS.0000000000009822 https://pmc.ncbi.nlm.nih.gov/articles/PMC12020403/

BOOK VII · WISDOM AND VISUAL LANGUAGE

Definitions and image credits

Pareidolia: perception of a recognisable form in a pattern without that recognition proving the form's origin. Sagittal: a plane separating left and right.

Pareidolia: perception of a recognisable form in a pattern without that recognition proving the form's origin. Sagittal: a plane separating left and right. Coronal: a plane separating front and back. Transverse: a cross-plane separating upper and lower portions. VPD: velopharyngeal dysfunction. VPI: velopharyngeal insufficiency. NIDCD: National Institute on Deafness and Other Communication Disorders. NIMH: National Institute of Mental Health.

Credits and limitations

The supplied anatomy images and stone collage retain separate provenance and publication-rights review. Removed animal-lettering studies are not part of this edition.

Pareidolia: perception of a recognisable form in a pattern without that recognition proving the form's origin. Sagittal: a plane separating left and right. Coronal: a plane separating front and back. Transverse: a cross-plane separating upper and lower portions. VPD: velopharyngeal dysfunction. VPI: velopharyngeal insufficiency. NIDCD: National Institute on Deafness and Other Communication Disorders. NIMH: National Institute of Mental Health.

Keep the source beside the claim

The supplied images are credited to ZeusC as identified by the author. New vector drawings state their own geometry and scope. They are explanatory models, not replicas of an undocumented construction detail. Original source files remain in the offline gallery. All new prices are labelled allowances unless a dated supplier quotation is recorded.

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DOI Digital object identifier

https://basc.pnnl.gov/resource-guides/continuous-air-barrier-exterior

https://www.epa.gov/recycle/composting-home

https://collection.sciencemuseumgroup.org.uk/objects/co522232/mag

https://www.asme.org/about-asme/engineering-history/landmarks/95

https://www.che.utah.edu/teaching_module/thermoelectric-human-p

https://www.sciencehistory.org/education/scientific-biographies/antoi

https://www.flickr.com/photos/151887236@N05/47007069511

Sources, images and drawing credits

H1 · Argentina national heritage: Casa sobre el Arroyo https://www.argentina.gob.ar/node/423208

H2 · National heritage bulletin, September 2018: co-authorship correction https://www.argentina.gob.ar/sites/default/files/boletin-septiemre-cnmlbh.pdf

H3 · Casa del Puente, 1949 image and rights record https://commons.wikimedia.org/wiki/File:Casa_del_Puente_-_Amancio_Williams.jpg

H4 · United States Department of Energy: passive solar home design https://www.energy.gov/sites/prod/files/guide_to_passive_solar_home_design.pdf

H5 · New Zealand Ministry for the Environment: passive solar guidance https://environment.govt.nz/publications/passive-solar-design-guidance/3-guidance-on-passive-solar-design/

H6 · Frank Lloyd Wright Foundation: Herbert Jacobs House https://franklloydwright.org/site/herbert-jacobs-house/

H7 · European Commission: energy renovation of buildings https://energy.ec.europa.eu/topics/energy-efficiency/energy-performance-buildings/energy-performance-buildings-directive/energy-renovation-buildings_en

H8 · United States Environmental Protection Agency: moisture control https://www.epa.gov/sites/default/files/2014-08/documents/moisture-control.pdf

H9 · Casa del Puente, Claudio Elias, 2019, CC BY-SA 4.0 https://commons.wikimedia.org/wiki/File:Casa_del_Puente_MDP.jpg

H10 · Amancio Williams portrait reference and rights record https://commons.wikimedia.org/wiki/File:Amancio_Williams.jpg

H11 · FAO: preparation for the fresh market, Andrés F. López Camelo https://www.fao.org/4/y4893e/y4893e05.htm

Model sources and limitations

Where water on a cold surface comes from https://www.energy.gov/cmei/buildings/consumer-dehumidifiers

Count a dose before building a fish feeder https://www.fao.org/4/w6928e/w6928e2f.htm

Follow the salt through a water balance https://www.energy.gov/cmei/ito/desalination-basics

BY-SA Creative Commons Attribution-ShareAlike · FAO Food and Agriculture Organization of the United Nations

Watch bracing change a frame https://earthquake.usgs.gov/education/shakingsimulations/classroom.php

Guide floating litter into a removable basket https://www.epa.gov/trash-free-waters

Sort by size without bruising the fruit https://www.fao.org/4/y4893e/y4893e00.htm

Map a sampling route before fitting a gas sensor https://www.osha.gov/sites/default/files/publications/OSHA3843.pdf

Put a greenhouse reading in its proper place https://www.umass.edu/agriculture-food-environment/greenhouse-floriculture/fact-sheets/ventilation-for-greenhouses

All new vector kit drawings and explanatory diagrams are original teaching illustrations. They do not reproduce another publisher's art. Supplied ZeusC originals remain preserved in the source galleries. Photographed reference-book spreads informed only the idea of placing visible materials beside numbered steps.

The cover and portrait-signature are contemporary generated illustrations. They are not archival images. Technical diagrams use explicit geometry and labels.

Supplied linen claim

Source transcription. The following reproduces the supplied image's assertions so they can be examined. It is not this book's factual or medical conclusion. Interface text such as "See less" is omitted; spacing is normalised.

A woman spinning flax in Ireland. Underwood & Underwood stereograph, copyright 1903; Library of Congress, LC-DIG-stereo-1s28020. The paired views were made for stereoscopic viewing. Historical photograph, public domain in the United States. It records textile work, not a healing-frequency experiment. [E25]

Wearing linen functions as a powerful health optimization technique because the fabric possesses a measured frequency of five thousand hertz. Engaging with this high-frequency textile actively elevates personal energetic vibrations upon contact with the body, thereby facilitating deep cellular recovery and promoting systemic physical healing.

Synthetic garments and conventional materials often drag down human energy fields, whereas organic flax-derived textiles maintain an exceptionally elevated vibrational baseline that supports optimal biological function. Integrating pure linen into daily attire transforms ordinary clothing choices into a deliberate wellness strategy, aligning daily routines with natural energetic laws to restore balance, vitality, and long-term health.

WEARING LINEN IS A HEALTH HACK. LINEN HAS A FREQUENCY OF 5000HZ, MEANING WHEN YOU WEAR LINEN YOU ARE ELEVATING YOUR FREQUENCY, PROMOTING HEALING.

Read the corresponding historical chapter for chronology, evidence and corrections. The supplied promotional image is preserved unchanged in the recovery archive; it is not used as historical illustration in the earlier reading pages.

A woman spinning flax in Ireland. Underwood & Underwood stereograph, copyright 1903; Library of Congress, LC-DIG-stereo-1s28020. The paired views were made for stereoscopic viewing. Historical photograph, public domain in the United States. It records textile work, not a healing-frequency experiment. [E25]

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Supplied cloudbuster claim

Source transcription. The following reproduces the supplied image's assertions so they can be examined. It is not this book's factual or medical conclusion. Interface text such as "See less" is omitted; spacing is normalised.

Wilhelm Reich's identification photograph on his Associate Warden's Record Card, Lewisburg Federal Penitentiary, March 1957. US federal government record, public domain; reproduced via Wikimedia Commons. This dated record identifies Reich. It is not a photograph of a weather experiment. The earlier chapter shows the surviving cloudbuster, photographed in 2012. [E26] [E06]

During the 1800s, humanity unlocked the ability to manipulate atmospheric energy using specialized tools known as cloudbusters. These remarkable devices were constructed entirely from copper, utilizing the metal's extraordinary natural conductivity to interact directly with the environment and actively remove clouds from the sky. This decentralized method of clearing the atmosphere offered incredible potential but posed a direct threat to the emerging industrial monopolies of the era.

Recognizing the immense power of this autonomous technology, Rockefeller systematically banned their existence and suppressed the knowledge of their capabilities. Uncovering these hidden historical technologies reveals the true, untapped potential of conductive copper systems that the modern world is only just beginning to rediscover.

IN THE 1800S PEOPLE USED DEVICES KNOWN AS CLOUDBUSTERS WHICH WERE COPPER DEVICES THAT HAD THE ABILITY TO REMOVE CLOUDS (ROCKEFELLER BANNED THEM)...

Read the corresponding historical chapter for chronology, evidence and corrections. The supplied promotional image is preserved unchanged in the recovery archive; it is not used as historical illustration in the earlier reading pages.

Supplied uranium-glass claim

Source transcription. The following reproduces the supplied image's assertions so they can be examined. It is not this book's factual or medical conclusion. Interface text such as "See less" is omitted; spacing is normalised.

An Art Deco uranium-glass bowl under ordinary light. Photograph: 8 September 2016. The object's exact maker and year of manufacture are not supplied in this image record. © Raimond Spekking / CC BY-SA 4.0 (via Wikimedia Commons). Image unaltered apart from display size. [E27] [E29]

The same bowl under ultraviolet (UV) light, photographed on the same date. This is a photograph of a surviving historical object, not a period photograph of a medical treatment. © Raimond Spekking / CC BY-SA 4.0 (via Wikimedia Commons). Image unaltered apart from display size. [E28] [E29]

https://commons.wikimedia.org/wiki/File:Uranglas-Schale,_Art_Deco,_under_UV_light-1371.jpg

https://creativecommons.org/licenses/by-sa/4.0/

ON THIS PAGE

US United States · **BY-SA** Creative Commons Attribution-ShareAlike · **UV** Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light

The official narrative insists that historical uranium glassware was a severe biological hazard rather than a legitimate health tool. A deeper look into early energetic practices suggests these unique vessels may have possessed subtle frequencies that interacted with the human body on a cellular level. By resting liquids in this specific glass, early adopters potentially unlocked a natural energetic charge that acted as a powerful and accessible healing agent.

This highly decentralized method of physical restoration presented an existential threat to the foundation of the modern medical system. Systematically labeling these common household items as inherently toxic provided the ultimate justification to suppress an independent health practice that could have potentially put the entire trillion-dollar pharmaceutical industry out of business.

WAS URANIUM GLASSWARE REALLY TOXIC OR DID IT NEARLY PUT THE TRILLION DOLLAR PHARMACEUTICAL INDUSTRY OUT OF BUSINESS?

The same bowl under ultraviolet (UV) light, photographed on the same date. This is a photograph of a surviving historical object, not a period photograph of a medical treatment. © Raimond Spekking / CC BY-SA 4.0 (via Wikimedia Commons). Image unaltered apart from display size. [E28] [E29]

The official narrative insists that historical uranium glassware was a severe biological hazard rather than a legitimate health tool. A deeper look into early energetic practices suggests these unique vessels may have possessed subtle frequencies that interacted with the human body on a cellular level. By resting liquids in this specific glass, early adopters potentially unlocked a natural energetic charge that acted as a powerful and accessible healing agent.

https://commons.wikimedia.org/wiki/File:Uranglas-Schale,_Art_Deco,_under_UV_light-1371.jpg

https://creativecommons.org/licenses/by-sa/4.0/

Read the corresponding historical chapter for chronology, evidence and corrections. The supplied promotional image is preserved unchanged in the recovery archive; it is not used as historical illustration in the earlier reading pages.

Supplied oscillator claim

Source transcription. The following reproduces the supplied image's assertions so they can be examined. It is not this book's factual or medical conclusion. Interface text such as "See less" is omitted; spacing is normalised.

Georges Lakhovsky, pictured in Radio News, February 1925, printed page 1383. The magazine captions him "Mr. George Lakhovsky". Portrait and caption extracted from the period scan without retouching. US publication from 1925, public domain. A contemporary portrait establishes identity, not treatment efficacy. [E12]

The Lachowski Oscillator is the cure the world had forgotten about.

The MWO is a multi-wave generator. All chemical processes in the body require energy, and the MWO multi-wave oscillator satisfies this need.

It saturates the cells of the body with energy. In turn, the chemical processes of each cell are brought into balance, allowing them to recover and function properly.

When you use the machine regularly, it maintains the body's electrical health at the cellular level.

ON THIS PAGE

UV Ultraviolet Electromagnetic radiation with wavelengths shorter than visible violet light · **BY-SA** Creative Commons Attribution-ShareAlike · **US** United States

Georges Lachowski's invented a method to restore the human body

Read the corresponding historical chapter for chronology, evidence and corrections. The supplied promotional image is preserved unchanged in the recovery archive; it is not used as historical illustration in the earlier reading pages.

X09 · Millikan: On the elementary electrical charge and the Avogadro constant (1913)

X10 · Rutherford: The scattering of alpha and beta particles by matter and the structure of the atom (1911)

X17 · Deutsche Biographie: Otto von Guericke

X18 · Boyle, New Experiments Physico-Mechanical, Touching the Spring of the Air (1660), Wellcome Collection

A15 · Argentina: Centro de Multiplicación de Aves, Negra INTA and Rubia INTA

Historical images retain their collection identity, date and rights statement in their caption. The explanatory SVG diagrams and illustrated title are contemporary teaching works. The four supplied promotional images are archived for recovery and are not displayed as historical evidence. Their transcriptions are paired with documented photographs or records. The exact maker of the Spanish subtle-body diagram remains unresolved.

Historical images, sources and price records

The photographs in this reader identify an object, event or experiment through a collection record. Museum photographs of ancient objects are explicitly distinguished from photographs made during the historical event. The vector drawings are contemporary teaching work. They supply readable labels, quantities and operations without presenting an invented scene as documentary evidence.

Prices checked on 14 November 2026 are limited to the identified Argentine rule and card listings. All other monetary ranges in these replacement lessons are editorial planning allowances. They are not quotations, exchange-rate conversions or promises of availability. Labour, delivery and missing tools require separate entries.

The superseded generic scenes remain only in the recovery history. Their old reading links lead to the applicable lesson or retained specimen record. This correction does not assert that every older cover and every inherited claim throughout the complete book has finished its separate audit.

The photographs in this reader identify an object, event or experiment through a collection record. Museum photographs of ancient objects are explicitly distinguished from photographs made during the historical event. The vector drawings are contemporary teaching work. They supply readable labels, quantities and operations without presenting an invented scene as documentary evidence.

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ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · SVG Scalable Vector Graphics

Editorial recovery: the Cosmic Pendulum illustration · reading page 2956

The fragment “occurs in the recovered image series.” lacks a subject in both preserved source PDFs: Edition 105, page 2107, and Edition 105.1, page 2396. It is omitted from the reading paragraph and retained verbatim in the full library’s sentence-repair evidence and recovery queue. Its missing subject has not been guessed. The separate sentence about a small dial has been rejoined using wording already present in those sources. This records an unresolved original fragment, not a newly supplied interpretation.

Approved portrait cover

The main cover uses the approved author-supplied artwork, with the author portrait below the open book.

Glossary: abbreviations and context

AAD: American Academy of Dermatology. The professional organisation cited for minor-cut skin-care information. · reading page 1315

AFIDI: Autorización Fitosanitaria de Importación. The Argentine plant-health import authorisation that records the conditions for the specified material and origin. · reading page 1028

AI: Artificial intelligence. Computer methods that perform tasks such as classification, prediction or language generation; an output still needs checking against its evidence. · reading page 2046

AIATSIS: Australian Institute of Aboriginal and Torres Strait Islander Studies. The institution cited for its research-ethics code. · reading page 1345

API: Application programming interface. A defined way for software to request data or operations from another program. The public-data method here does not require buying access to one. · reading page 3173

APN: Administración de Parques Nacionales. Argentina’s National Parks Administration; its research permissions concern the areas and activities within its jurisdiction. · reading page 920

ART: Argentina Time, UTC minus three hours. Times in the dated market account use this time zone, not the exchange’s local clock. · reading page 3182

AVH: Australasian Virtual Herbarium. A shared online access point for participating herbarium specimen records. · reading page 1443

BCRA: Banco Central de la República Argentina. Argentina’s central bank; the quoted exchange-rate reference is distinguished from a retail conversion offer. · reading page 168

CAS: California Academy of Sciences. In the specimen caption this names the holding institution. · reading page 1447

CEDEAR: Certificado de Depósito Argentino. A locally traded depositary certificate representing an interest in a foreign security under its stated conversion ratio. Its local price also reflects market and currency conditions. · reading page 3184

CET: Central European Time, UTC plus one hour. CEST means Central European Summer Time, UTC plus two hours where the summer-time rule applies. · reading page 1922

CFO: Chief financial officer. The executive role responsible for a company’s financial management and reporting. · reading page 3180

ON THIS PAGE
UTC Coordinated Universal Time, the international civil time standard; Argentina used UTC minus three hours for this event · **CEST** Central European Summer Time (UTC +2 hours)

CHSH: Clauser, Horne, Shimony and Holt. Their names identify a Bell-inequality test built from four correlations; the bound depends on the assumptions stated in the chapter. · reading page 2265

CORUFA: Consejo Regulador del Uso de Fuentes de Agua. The water-use regulatory council named in the Entre Ríos legal framework. · reading page 520

DBG: Denver Botanic Gardens. The institution identified in the herbarium record. · reading page 1451

DGI: Departamento General de Irrigación. Mendoza's irrigation authority, cited for water-right and delivery records. · reading page 535

DLE: Diccionario de la lengua española. The dictionary of the Real Academia Española and the Asociación de Academias de la Lengua Española. · reading page 2764

ECB: European Central Bank. Its published reference rate supplies the stated euro conversion basis; it is not a customer's executable exchange quote. · reading page 168

ESD: Electrostatic discharge. A sudden transfer of electric charge between objects at different potentials; an electronics workbench controls it with a coordinated handling and grounding system. · reading page 474

FAL: Free Art License. The reuse licence named for the photograph; its attribution and distribution conditions belong with the image credit. · reading page 554

FCI: Fédération Cynologique Internationale. The international canine organisation cited for the breed standard and historical account. · reading page 192

FSA-OWI: Farm Security Administration and Office of War Information. These names identify the Library of Congress historical photographic collection. · reading page 594

GAAP: Generally accepted accounting principles. In the United States company account, this label distinguishes financial statements prepared under the stated accounting rules from adjusted, non-GAAP measures. · reading page 3182

GEPIN: Gestión de Permisos de Investigación. The research-permission system named by Argentina's National Parks Administration. · reading page 920

GIAHS: Globally Important Agricultural Heritage Systems. The Food and Agriculture Organization programme that recognises living agricultural heritage systems and their associated knowledge and biodiversity. · reading page 1075

HR: Hazard ratio. A comparison of event rates over time between groups in a statistical model. It is not the absolute probability that an individual will experience the event. · reading page 1415

HSE: Health Service Executive. In the minor-cut care reference this is Ireland's public health service, not the United Kingdom's Health and Safety Executive. · reading page 1315

HTM: Half-turn metric. In the cube discussion, a quarter-turn or a half-turn of one face counts as one move. QTM, quarter-turn metric, counts a half-turn as two moves. · reading page 2214

IEEE: Institute of Electrical and Electronics Engineers. The standards organisation associated with the 802.11 wireless local-network standards. · reading page 1391

INFOR: Instituto Forestal. Chile's forestry research institute, cited for its chañar management manual. · reading page 965

ON THIS PAGE

HR Hazard ratio; a comparison of event rates, not an individual probability

INTEA: Innovaciones Tecnológicas Agropecuarias S.A. The Argentine company associated with INTA and the cited crop catalogue. · reading page 1087

INTI-SAC: Instituto Nacional de Tecnología Industrial and Servicio Argentino de Calibración y Medición. The label connects the national institute with its calibration and measurement service network. · reading page 2088

IRS: Internal Revenue Service. The United States federal tax agency cited for the barter-income explanation. · reading page 2753

LAD: Lugar Apto Denunciado. The Argentine aviation registration category named in the source; its existence must not be confused with approval for every proposed operation. · reading page 535

LOC: Library of Congress. The United States institution holding the cited historical photograph or document. · reading page 903

MSB: Millennium Seed Bank. The seed-conservation programme identified in the botanical specimen record. · reading page 1440

MWO: Multi-wave oscillator. The historical device name in this chapter; the expansion does not establish a medical benefit. · reading page 2709

NBS: National Bureau of Standards. The historical United States institution named in the Wu experiment account; it later became the National Institute of Standards and Technology. · reading page 2262

NEON: National Ecological Observatory Network. The ecological observation programme named in the specimen record. · reading page 1448

NGS: National Geodetic Survey. The United States surveying institution within NOAA, the National Oceanic and Atmospheric Administration. · reading page 2054

NIH: National Institutes of Health. The United States biomedical research agency cited for the medicine-and-supplement record. · reading page 1277

NMS: National Market System. The United States securities-market framework referred to by the ATS disclosure discussion. · reading page 3172

NTU: Nephelometric turbidity unit. A measure of light scattering in a turbidity test; it does not identify every contaminant or establish that water is drinkable. · reading page 2672

NYC: New York City. The municipal health reference cited for rooftop water tanks. · reading page 84

ORAU: Oak Ridge Associated Universities. The institution holding the cited historical radiation-related collection. · reading page 2706

OSB: Oriented strand board. An engineered wood panel made from bonded strands arranged in layers; its grade and service conditions determine suitability. · reading page 158

OTC: Over-the-counter. In the equity-market discussion this refers to trading away from a national securities exchange. ATS and non-ATS volumes are separate categories within the reporting data. · reading page 3173

PFOF: Payment for order flow. Compensation a broker receives for directing customer orders to another firm; it must be distinguished from the customer's execution quality and the broker's routing duties. · reading page 3176

ON THIS PAGE

INTA Instituto Nacional de Tecnología Agropecuaria · **ATS** Alternative trading system

PLA: Polylactic acid, also called polylactide. A polymer used in some printed parts. PLA+ is a supplier's modified-material label, so its properties require that supplier's data. · reading page 1756

PLOS: Public Library of Science. The publisher of the research journal PLOS ONE cited for the enset illustration. · reading page 1024

PN: Nominal pressure designation. In PN 10 the number is a classification label; allowable pressure still depends on the component, material, temperature and governing specification. · reading page 736

PROSEA: Plant Resources of South-East Asia. The botanical reference programme cited for the yam account. · reading page 1062

PVN: Paraventricular nucleus. The named hypothalamic region in the anatomical pathway diagram, rather than a general label for every relay in the brain. · reading page 2718

QTM: Quarter-turn metric. In cube move counting, a 90-degree face turn counts as one and a 180-degree face turn counts as two. · reading page 2214

RAE-ASALE: Real Academia Española and Asociación de Academias de la Lengua Española. The two institutional names identify the consulted Spanish-language dictionary. · reading page 2764

RCC: Reinforced cement concrete. This is the material abbreviation on the supplied structure drawing; it does not provide a reinforcement schedule or verified structural design. · reading page 142

RENFO: Registro Nacional Fitosanitario de Operadores de Material de Propagación, Micropropagación y/o Multiplicación Vegetal. The Argentine plant-propagation operator register cited for nursery traceability. · reading page 749

RET-INASE: Red de Ensayos Comparativos de Cultivares de Trigo Pan, published through the Instituto Nacional de Semillas. The trial network compares wheat cultivars under recorded site and season conditions. · reading page 840

RF: Radio frequency. Electromagnetic oscillations in the radio-frequency range; a named frequency alone supplies neither an exposure dose nor evidence of therapeutic effect. · reading page 2709

RH: Relative humidity. Water-vapour pressure expressed as a percentage of the saturation vapour pressure at the same temperature. A storage reading therefore belongs with its temperature. · reading page 806

RN: Ruta Nacional. In the Argentine property description, RN 40 names National Route 40. · reading page 533

RTP: Rádio e Televisão de Portugal. The Portuguese broadcaster whose archive holds the cited historical film. · reading page 1120

SAR: Saudi riyal. The currency of the exceptional falcon-auction price; the amount must not be relabelled as US dollars. · reading page 210

SW: Southwest. On the site grid it marks an orientation or corner, not a measured coordinate system by itself. · reading page 724

TDWG: Biodiversity Information Standards, historically the Taxonomic Databases Working Group. The organisation maintains standards including Darwin Core for biodiversity records. · reading page 936

TIFF: Tagged Image File Format. A raster-image file format; its name alone does not establish the image's resolution, colour accuracy or provenance. · reading page 2099

ON THIS PAGE
US United States

TNAU: Tamil Nadu Agricultural University. The institution cited for the annual-moringa cultivation guidance. · reading page 1284

TX: Transmit. On the serial-interface drawing TX and RX, receive, identify signal functions; the actual wiring still follows the device's pin specification. · reading page 1587

UCLA: University of California, Los Angeles. The institution named in the reverse-osmosis membrane history. · reading page 1367

UF: University of Florida. UF/IFAS identifies the university and its Institute of Food and Agricultural Sciences. · reading page 1059

URL: Uniform Resource Locator. The web address for a particular resource; preserve the address and access date with the source record. · reading page 1272

USCCB: United States Conference of Catholic Bishops. The institution publishing the cited Bible passage and explanatory notes. · reading page 2934

USNM: United States National Museum. The historical institutional designation retained in Smithsonian specimen identifiers. · reading page 1435

VIR: The N. I. Vavilov All-Russian Institute of Plant Genetic Resources. VIR is the institution's established abbreviated name in the biographical source. · reading page 1022

WCA: World Cube Association. The organisation cited for its competition rules and dated historical records. · reading page 2211

WGS: World Geodetic System. WGS 84 is a geodetic reference system; coordinates need the stated datum, units and relevant precision. · reading page 1989

WHO: World Health Organization. The institution cited for its food-hygiene framework. · reading page 794

XPS: Extruded polystyrene. A closed-cell plastic insulation material whose actual fire, moisture and load conditions must be checked from its product specification. · reading page 158

YPF: Yacimientos Petrolíferos Fiscales, the historical expansion of the Argentine energy company's name. A named project partner is distinct from a completed financing commitment. · reading page 168

Terra Realm: complete source-page restoration

Carlos Verbelen, Terra Realm Guidebook, supplied PDF, 121 pages. Its image pages contain multiple overlaid image layers. The reading book reproduces the complete rendered pages, including handwriting absent from isolated background images. The supplied file is preserved separately without alteration. Symbolic readings remain attributed to the manuscript and are not treated as established scientific evidence.

Terra Realm, original PDF page 2. Complete original page, including all 6 image layers. Carlos Verbelen, user-supplied manuscript. Rendered at 240 dpi without retouching. · reading page 2793

Terra Realm, original PDF page 3. Complete original page, including all 3 image layers. Carlos Verbelen, user-supplied manuscript. Rendered at 240 dpi without retouching. · reading page 2794

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VITRIOL: the seven initials of Visita Interiora Terrae Rectificando Invenies Occultum Lapidem. Expansion and English interpretation are transcribed from Terra Realm, original PDF page 76. · reading page 2877

SSCJE: Staff Selection Commission Junior Engineer examination, the examination label printed on the supplied engineering sheet. · reading page 1794

NSF: National Science Foundation, a United States federal agency that funds research and publishes research news.

NYSE: New York Stock Exchange, the exchange named in the market photograph and discussion.

NVDA: NVIDIA's stock ticker on Nasdaq. It identifies the security in the cited price series.

Estate cat-care restoration: feeding and accessible household routes

Cornell Feline Health Center, Feeding Your Cat. Complete and balanced food, energy balance and the limitations of treats. Consulted 20 November 2026. The estate-specific location and keeper-route paragraphs are editorial applications of the existing plans, not site surveys or clinical prescriptions. · reading page 441

Feline Veterinary Medical Association, Your Cat's Environmental Needs, 2026. Separate accessible resources, protected resting locations and consistent interaction. Consulted 20 November 2026.

American Animal Hospital Association, 2021 AAHA/AAFP Feline Life Stage Guidelines, Life Stage Checklists. Accessible resources and changing needs across life stages. Consulted 20 November 2026.

Terra Realm cover. New illustration created on 21 November 2026 using the built-in image tool and the author-supplied photograph. The imagery is a contemporary symbolic composition, not a historical artefact or measured map. It replaces the original opening collage in this reading edition. The remaining original manuscript pages 2-121 are retained. The Billionaire Guide cover is unchanged. · reading page 2792

TR-MERU-MET · Metropolitan Museum of Art, Cosmological Mandala with Mount Meru, accession 1989.140. China, 14th century. Image designated public domain. Credit: Purchase, Fletcher Fund and Joseph E. Hotung and Michael and Danielle Rosenberg Gifts, 1989. Accessed 21 November 2026. · reading page 2930

TR-MERU-RUBIN · Rubin Museum of Himalayan Art, Michael Henss, The Kalachakra Mandala in the Potala Palace; and the museum's Kalachakra cosmology illustration. Religious cosmology and variations between traditions. Accessed 21 November 2026. · reading page 2930

TR-MERU-KALACHAKRA · Rubin Museum of Himalayan Art, Kalachakra Cosmology Illustration. Six continents in this documented scheme. Accessed 21 November 2026. · reading page 2930

TR-MERU-OFFERING · Rubin Museum of Himalayan Art, Mandala Offering Set, SC2012.7.1a-e. Central Tibet, mid 20th century, gilt silver. Gift of Shelley and Donald Rubin. Accessed 21 November 2026. · reading page 2930

TR-MERCATOR · Princeton University Library, Mercator map, Northwest Passage exhibition. Polar geography, central magnetic rock and subsequent map revisions. Accessed 21 November 2026. · reading page 2930

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TR-PARCHMENT · Harry Yetter Masonic Research Library, Ancient Operative Masonry, S. R. Parchment, 1930, object M10.11 P37a. Bibliographic record supports title, author and publication. The supplied page photograph's creator, printing and publication rights are unverified. Accessed 21 November 2026. · reading page 2932

TR-KUDURRU · Musée du Louvre, Kudurru du roi Melishipak II, SB 23. Object, scene, inscription, measurements and discovery context. The user-supplied detail photograph is not attributed to the Louvre photographer; its separate rights are unverified. Accessed 21 November 2026. · reading page 2933

D390 · Tenement Museum: Lucas Glockner, Health, and Construction

Original source URL recovered from the retained catalogue. Supports the 97 Orchard Street account.

D391 · New York City Health: Drinking Water Tank Inspection Reporting

Original source URL recovered from the retained catalogue.

D393 · Library of Congress: Carol M. Highsmith interior photograph

Original collection URL recovered from catalogue entry L2065. Caption identifies LC-DIG-highsm-13198; confirm the catalogue identifier and rights statement before commercial publication.

D446 · Palacio San José: history of the building

Museum account. Construction began in 1848; the account distinguishes Jacinto Dellepiane and Pedro Fossati and the later building phases. Reference restored from the named historical topic on 21 November 2026.

D449 · UNESCO: Villa d'Este, Tivoli

World Heritage property record. Reference restored from the named historical topic on 21 November 2026.

D451 · UNESCO: Rhaetian Railway in the Albula / Bernina Landscapes

World Heritage property record. Reference restored from the named historical topic on 21 November 2026.

D453 · UNESCO: Rani-ki-Vav, the Queen's Stepwell at Patan

World Heritage inscription decision and statement of significance. Reference restored from the named historical topic on 21 November 2026.

D455 · UNESCO: Crespi d'Adda

World Heritage property record. Reference restored from the named historical topic on 21 November 2026.

D456 · UNESCO: Rice Terraces of the Philippine Cordilleras

World Heritage property record. Reference restored from the named historical topic on 21 November 2026.

D457 · UNESCO: Saltaire

World Heritage property record. Reference restored from the named historical topic on 21 November 2026.

D458 · Historic England: Duxford, Building 78 (Hangar 5)

Listed-building account describes the Training Depot Station begun in 1917 and units arriving in 1918. Reference restored from the named historical topic on 21 November 2026.

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URL Uniform Resource Locator · **UNESCO** United Nations Educational, Scientific and Cultural Organization

D821 · Tektronix: DC Power Supply Technical Information

Original title and URL recovered from the Edition 102 source separation record, page 5070, key B:2285.

D389 · Orchard Street facade: original photograph record unresolved

The surviving reading caption names Fletcher6 and crop author Beyond My Ken, with CC BY-SA 3.0. The original file-page URL has not been recovered. This provenance check remains open; no new photographer or licence is assigned.

D464 · Aviation: original source identity unresolved

The surviving label reads “Aviation”. Its exact original source has not been recovered. The current aviation discussion separately cites FAA sources D1016 and D1017; this incomplete identifier is not silently reassigned to either.

Thermal resistance and RSI units

Natural Resources Canada, Major Energy Retrofit Guidelines for Commercial and Institutional Buildings: Office Buildings, 2016, envelope discussion. Defines RSI as thermal resistance in m^2·K/W. Checked 22 November 2026; replaces the earlier unsupported French expansion.

Tyre markings and nominal geometry

Michelin, How to Read Tire Markings and Sidewall Codes. Manufacturer explanation of section width, aspect ratio, construction, wheel diameter and service description. Checked 22 November 2026. The numerical geometry table is editorial arithmetic from the stated 195/55 R16 marking, not a measured tyre or fitment approval.

QR-COOL · Newton’s law of cooling

OpenStax, Calculus Volume 2, section 2.8. The book uses the positive decay-constant convention in T = (T0 - Ta) exp(-k t) + Ta. The plotted parameters are this edition’s illustrative assumptions, not observations. Access checked 22 November 2026.

QR-VEH · Vehicle ratings and tyre placards

National Highway Traffic Safety Administration, TireWise. Read tyre size and cold inflation from the vehicle’s placard or owner’s manual. Federal certification-label provisions distinguish gross vehicle and gross axle ratings; see 49 CFR 567.4, https://www.govinfo.gov/content/pkg/CFR-2025-title49-vol6/pdf/CFR-2025-title49-vol6-sec567-4.pdf. No numerical vehicle rating is inferred from a picture. Access checked 22 November 2026.

QR-LUOPAN · Geomantic compass NAV0442

Royal Museums Greenwich, National Maritime Museum. Catalogue date circa 1850; diameter 111 mm, overall depth 20 mm. The description supplies the fourth-ring sequence and cautions that Wang Yangxi may be a name used by several generations. The new ring is an editorial diagram, not a reproduction of the collection photograph. Access checked 22 November 2026.

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DC Direct current · **URL** Uniform Resource Locator · **BY-SA** Creative Commons Attribution-ShareAlike · **FAA** Federal Aviation Administration · **RSI** Metric thermal resistance, measured in square metres kelvin per watt · **m^2** square metre, an area unit · **=** equals · **mm** millimetre, 0.001 metre

QR-ROUEN · Gros-Horloge weekday scenes

Rouen Tourisme, magazine no. 3, November 2023 to April 2024, printed page 23 (PDF page 25), Gros-Horloge account. The semainier changes at noon and associates weekdays with the listed figures. The edition's table is a transcription of those associations, not a reconstruction of the mechanism. Access checked 22 November 2026.

QR-DIAL · Jacques Lucas portable sundial

The Metropolitan Museum of Art, 03.21.60. Jacques Lucas, French, La Rochelle; probably before 1681; silver, 5.7 × 5.1 cm; gift of Mrs. Stephen D. Tucker, 1903. Three latitude scales, an adjustable gnomon and a recessed compass are documented. The present diagram is a new explanatory schematic. Access checked 22 November 2026.

QR-SOSA · Micaela Sosa, Pilagá basket maker

Museo de Arte Popular José Hernández, Buenos Aires Ciudad. The maker's account identifies Estanislao del Campo, Formosa, learning from her mother and starting basket work at twelve. The material account describes the collection and sun-drying of central carandillo leaves. No photograph licence or exposure date is inferred. Access checked 22 November 2026.

QR-ICA · Institute of Contemporary Art/Boston

The museum records the 2006 opening and Diller Scofidio + Renfro design. The architects describe the relationship between the waterfront public route, cantilever and museum spaces. These project records do not identify the author of the supplied analysis sheets. Access checked 22 November 2026.

https://www.icaboston.org/about/our-building/

https://dsrny.com/project/institute-of-contemporary-art

QR-COPENHILL · CopenHill / Amager Bakke

Bjarke Ingels Group identifies CopenHill in Copenhagen as a waste-to-energy building with a recreational roof. The operator records the public opening on 4 October 2019. These records do not authenticate dimensions or calculations on the supplied student-style sheets. Access checked 22 November 2026.

https://css.big.dk/projects/copenhill-2391

https://www.copenhill.dk/kontakt/faqs

QR-JEWEL · Jewel Changi Airport

Safdie Architects records the Singapore project as built in 2019. Changi Airport's 7 March 2019 announcement names the design consortium, Moshe Safdie and the public opening on 17 April 2019. Supplied roof-model images retain their own unconfirmed sheet authorship. Access checked 22 November 2026.

https://www.safdiearchitects.com/projects/jewel-changi-airport

https://id.changiairport.com/content/dam/jca-project/documents/Media_Release_Jewel_Opening_and_Preview_FINAL.pdf

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RB-CUP · United States customary volume conversion

National Bureau of Standards, Letter Circular 1098, conversion-factor table: one cup equals approximately 236.5882 mL. The 250 mL comparator is explicitly the metric measuring cup used in the chapter. The figures are capacity definitions, not calibrated vessel dimensions. Access checked 22 November 2026.

RB-MICHAUX · François André Michaux daguerreotype

Repository record identifies an 1851 daguerreotype, courtesy of Harvard University Library, Weissman Preservation Center. The file is marked public domain. The record's subject-as-author field does not establish the photographer; no photographer is assigned in the reading caption. Access checked 22 November 2026.

RB-PRESSURE · Pressure and vertical depth

OpenStax, University Physics Volume 1, section 14.1. Hydrostatic pressure differences depend on density, gravitational acceleration and vertical height. The 0.10 m column, rounded density and 980 Pa result are the edition's stated explanatory case; they are not observations. Access checked 22 November 2026.

RB-ROLLING · Rolling without slipping

OpenStax, University Physics Volume 1, section 11.1. The relation between hub velocity, rim velocity and the instantaneous ground contact point applies to ideal rolling without slipping. The new drawing uses an assumed hub speed of 3.5 m/s and directly labels the resulting velocities. Access checked 22 November 2026.

RB-TYRE · European tyre performance measures

European Commission, Tyres properties: an introduction. The page distinguishes rolling resistance, wet grip and external rolling noise. The adjacent label guidance links to the European Product Registry for Energy Labelling (EPREL). No specific tyre rating is invented. Access checked 22 November 2026.

RB-SOLAR · Safe indirect eclipse viewing

NASA Science, Eclipse Viewing Safety. A pinhole projector allows the viewer to watch a projected solar image with the Sun behind them. The aperture is not a viewing eyepiece. The new schematic shows an enclosed box and side access to the projection screen, without a magnifying optical component. Access checked 22 November 2026.

RB-LLOYD · Thames levelling instrument, 1831

Public-domain Plate IV, sourced from https://archive.org/details/philtrans00009982. John Augustus Lloyd, An account of operations carried on for ascertaining the difference of level between the River Thames at London Bridge and the sea, Philosophical Transactions 121 (1831), pp. 167-197, doi:10.1098/rstl.1831.0011. The Royal Society account https://royalsociety.org/blog/2022/11/water-under-the-bridge/ provides the Thames Levels Committee context. The current complete plate is 1,800 × 1,542 pixels. A larger repository copy was identified but retrieval was rate-limited; no resolution upgrade is claimed. No new dimensions or mechanical performance are inferred from the reproduction. Access checked 22 November 2026.

Repair B · sources for measurement and colour

Sources checked 2026-11-07. Interpretations and workshop examples are identified in the readings.

ARPRICE · Selplast: Ibico 770100, 30 cm stainless-steel ruler

Displayed ARS 2784. Conditional payment discounts excluded.

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mL millilitre, 0.001 litre · **m** metre, a length unit · **Pa** pascal, pressure · **m/s** metres per second, speed · **NASA** National Aeronautics and Space Administration · **×** multiplied by · **cm** centimetre, 0.01 metre · **ARS** Argentine peso

https://www.selplast.com.ar/productos/regla-metal-acero-30-cm-ibico-770100-cr-46237/

CHEVREUL · Smithsonian Libraries: Using color, Color in a New Light exhibition

Institutional description of Chevreul's 1839 colour work. Search record was accessible; a later direct request was rejected by the server.

https://library.si.edu/exhibition/color-in-a-new-light/using

COLOURPLATE · Cooper Hewitt historical foldout: Chevreul, colour chart, 1839

Plates catalogued as 6, 7 and 8; Cooper Hewitt / Smithsonian Libraries source. File record marks the historical reproduction as public domain.

https://commons.wikimedia.org/w/index.php?curid=64674941

UPRICE · Casa Piera: Ami stainless-steel ruler, 30 cm

30 cm variant displayed EUR 5.88 including value-added tax, discounted from EUR 6.00.

https://casapiera.com/es/accesorios/8346-regla-metalica-ami.html

MEASUREMENT · National Institute of Standards and Technology, Technical Note 1297: terminology

Distinguishes accuracy, repeatability and reproducibility. Workshop data in this reader are explicitly illustrative.

https://www.nist.gov/pml/nist-technical-note-1297/nist-tn-1297-appendix-d1-terminology

RATIO · Euclid, Elements, Book VI, Definition 3; David Joyce's edition at Clark University

Extreme and mean ratio. New numerical and geometric examples are independently calculated.

https://mathcs.clarku.edu/~djoyce/elements/bookVI/defVI3.html

USPRICE · Volition vendor listing: Pittsburgh 66199, 12-inch stainless-steel ruler

Opened page displayed USD 1.99; search index displayed USD 2.49. Budget uses opened-page value. Vendor listed as Harbor Freight; lead time unknown.

https://www.govolition.com/product/V124-66199

VISION · National Eye Institute: how the eyes work

Light is focused on the retina; photoreceptor signals travel through the optic nerve to the brain.

https://www.nei.nih.gov/eye-health-information/healthy-vision/how-eyes-work

RB-ICABOSTON · Institute of Contemporary Art, Boston

The museum's 2023 management plan identifies Diller Scofidio + Renfro, completion in 2006 and the fourth-floor cantilever. This confirms building context, not the tiny numerical annotations in supplied sheet 021. No dimension has been inferred from that image. The small grid figures remain unresolved for production use. Access checked 22 November 2026.

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= equals · **cm** centimetre, 0.01 metre · **EUR** Euro · **USD** United States dollar

RB-STEELSURVEY · Amager Bakke steel fabrication and surveying

Johannes Hauptenbuchner, Züblin Stahlbau GmbH, Danish Steel Day, 12 November 2015, slides 10-14. The native table transcribes the three visible plane summaries on slide 12; units are not printed in that excerpt. The source retains its own copyright and is linked for inspection; reproduction clearance for commercial publication remains open. Access checked 22 November 2026.

RB-ARBOUR · Muscowpetung Powwow Arbour

Project-team award submission: Oxbow Architecture and Richard Kroeker; client Muscowpetung Saulteaux Nation; Treaty 4 Territory, Saskatchewan. Published project-detail drawing matches the supplied floor plan, section, tripod and strut bases. The entry identifies Elder engagement led by Jeff Cappo and round-timber/steel-rod construction. Published photographs are credited to Lindsay Reid, drawings to Oxbow; that does not automatically identify the photographer of every supplied variant. Independent project participant: https://www.wolfromeng.com/muscowpetung-powwow-arbour. Historical project facts are separated from unresolved reproduction permissions. Access checked 22 November 2026.

RB-NUTTYPES · Nut forms and identification

Bolt Depot's technical type chart supplies the fastener vocabulary. The reading volume uses an original vector plate and native descriptions. Form alone establishes neither strength nor installation torque. Access checked 23 November 2026.

RB-IGG · Structure of an immunoglobulin G molecule

Janeway and colleagues, Immunobiology, section 3-1, The structure of a typical antibody molecule. Two identical heavy chains and two identical light chains are linked by disulfide bonds; approximate masses are 50 and 25 kDa, respectively. The original editorial diagram shows the relationship schematically. It is not a molecular scale model or a clinical test. Access checked 22 November 2026.

RC-ASTON · Emily Aston: boron, liquid surfaces and coauthorship

William Ramsay and Emily Aston, The atomic weight of boron, Journal of the Chemical Society, Transactions 63 (1893), 207-217. Royal Society manuscript PP/24/15, The molecular surface-energy of mixtures of non-associating liquids (1894), fourteen pages, received in April/May and read on 14 June 1894. Sources checked 22 November 2026.

https://pubs.rsc.org/en/content/articlelanding/1893/ct/ct8936300207

https://catalogues.royalsociety.org/calmview/Record.aspx?id=PP%2F24%2F15&src=CalmView.Catalog

RC-GOLDBERG · Irma Goldberg: copper catalysis and a nitrogen-carbon bond

I. Goldberg, Ueber Phenylirungen bei Gegenwart von Kupfer als Katalysator, Berichte 39 (1906), 1691-1692, DOI 10.1002/cber.19060390298. Julie A. Olson and Kevin M. Shea, Critical Perspective: Named Reactions Discovered and Developed by Women, Accounts of Chemical Research 44 (2011), 311-321, DOI 10.1021/ar100114m. Publisher metadata carries the spelling Iram; historical accounts use Irma. No death date is inferred. Sources checked 22 November 2026.

https://chemistry-europe.onlinelibrary.wiley.com/doi/10.1002/cber.19060390298

https://pubs.acs.org/doi/10.1021/ar100114m

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kDa Kilodalton, a molecular-mass unit · **DOI** Digital object identifier

RC-PENNINGTON · Mary Engle Pennington: refrigeration from laboratory to railway

United States Food and Drug Administration, Mary Engle Pennington: The Cold Chain of Food Safety; National Inventors Hall of Fame, Mary Engle Pennington. Retained railcar photograph, circa 1910, Science History Institute, image provenance retained from PENPHOTO. Sources checked 22 November 2026.

https://www.fda.gov/about-fda/fda-history-exhibits/mary-engle-pennington-cold-chain-food-safety

https://www.invent.org/inductees/mary-engle-pennington

RC-TSUJIMURA · Michiyo Tsujimura: a research career through green tea

Ochanomizu University Library and History Museum, Michiyo Tsujimura, institutional biography and chronology. The prose and chronology differ on tannin dates, so the new account does not assign one disputed isolation date. Sources checked 22 November 2026.

RC-ROCK · Sibyl M. Rock: making a mass spectrum interpretable

Science History Institute oral history of Marvin L. Vestal, 2010; Sibyl M. Rock, Computing Manual: Analysis of Gas and Liquid Mixtures by Means of the Mass Spectrometer, Consolidated Engineering Corporation report MC 25.51d, January 1946; C. E. Berry, D. E. Wilcox, S. M. Rock and H. W. Washburn, A Computer for Solving Linear Simultaneous Equations, Journal of Applied Physics 17 (1946), 262. Manual cover metadata uses Sybil but the reproduced title and institutional history use Sibyl. Sources checked 22 November 2026.

https://digital.sciencehistory.org/works/6d56zx87n

https://commons.wikimedia.org/wiki/File:Sibyl_Rock_Computing_Manual_1946.jpg

https://doi.org/10.1063/1.1707713

RC-GORDON · Loney Clinton Gordon: cultures, collaborators and the archive

Grand Rapids Public Library, Michigan women and the whooping cough vaccine collection, Collection 328, finding aid generated 22 January 2022; Loney Gordon oral-history interview, 1998, accession 1998.041. Grand Rapids Public Museum public-health history account. Michigan Public, 12 February 2021, original reporting incorporating Gordon's recorded interview. Sources checked 22 November 2026.

https://grplweb.grpl.org/history/findingaids/328.pdf

https://www.grpm.org/events/public-health-history/

https://www.michiganpublic.org/environment-science/2021-02-12/remembering-loney-clinton-gordon-you-achieved-something-and-you-were-glad-for-that

RC-HARDY · Elizabeth M. Hardy: the coauthor behind the Cope rearrangement

Arthur C. Cope and Elizabeth M. Hardy, The Introduction of Substituted Vinyl Groups. V. A Rearrangement Involving the Migration of an Allyl Group in a Three-Carbon System, Journal of the American Chemical Society 62 (1940), 441-444, DOI 10.1021/ja01859a055. Olson and Shea's 2011 historical analysis discusses Hardy's role. Original publication year is 1940, not a later online archive date. Sources checked 22 November 2026.

https://pubs.acs.org/doi/10.1021/ja01859a055

https://pubs.acs.org/doi/10.1021/ar100114m

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DOI Digital object identifier

RC-KELLEY · Sinah Estelle Kelley: analytical chemistry inside fermentation

USDA staff bulletin, 1947, profile of Sinah E. Kelley at the Northern Regional Research Laboratory; G. E. N. Nelson, D. H. Traufler, S. E. Kelley and L. B. Lockwood, Production of Itaconic Acid by Aspergillus terreus in 20-Liter Fermentors, Industrial & Engineering Chemistry 44 (1952), 1166-1168; R. A. Rhodes, A. J. Moyer, Mabel L. Smith and Sinah E. Kelley, Production of Fumaric Acid by Rhizopus arrhizus, Applied Microbiology 7 (1959), 74-80, DOI 10.1128/am.7.2.74-80.1959. Sources checked 22 November 2026.

https://pubs.acs.org/doi/10.1021/ie50509a062

https://pmc.ncbi.nlm.nih.gov/articles/PMC1057471/

https://upload.wikimedia.org/wikipedia/commons/7/7c/USDA_%28IA_usda06unit%29.pdf

RC-BORRELL · Sara Borrell Ruiz: from water analysis to steroid biochemistry

María Jesús Santesmases, Sara Borrell Ruiz, Spanish Society for Biochemistry and Molecular Biology. Account based on the author's 1995 interview with Borrell and family records. The new entry does not repeat the page's erroneous Nobel attribution to Edward Dodds. Sources checked 22 November 2026.

RC-GAO · Gao Xiaoxia: electroanalysis, instruments and trace measurements

Peking University institutional history, 27 November 2019, Gao Xiaoxia. Qiao Qingdong and Gao Xiaoxia, Peking University journal 31 (1995), issue 2, page 205, electrochemical study of chlorophyll derivatives. The illustration is a conceptual electroanalytical cell, not a reconstruction or measured trace from the paper. Sources checked 22 November 2026.

https://news.pku.edu.cn/ztwz111/bwcxljsmztjy/dyfc_bwcx/ce8ba9d7a8cd4a3c98f35ff70a4d8b91.htm

https://xbna.pku.edu.cn/CN/Y1995/V31/I2/205

RC-LAWSON · Katheryn E. Lawson: organising the infrared literature

G. Ryback, review of Katheryn E. Lawson, Infrared Absorption of Inorganic Substances, Mineralogical Magazine 33 (1963), 528-529. Book published by Reinhold, New York, and Chapman & Hall, London, 1961, 200 pages. The contemporary review gives the author as Katheryn E.; no uncertain middle-name expansion is supplied. Sources checked 22 November 2026.

RC-RANGANATHAN · Darshan Ranganathan: molecular organisation and an independent career

Subramania Ranganathan, Darshan Ranganathan (1941-2001), Biographical Memoirs of Fellows of the Indian National Science Academy 34 (2008), 85-98. A first-person memorial by a spouse and scientific collaborator; recollections and evaluative language are treated as attributed testimony. Sources checked 22 November 2026.

RC-MESAVERDE · Cliff estate: access, water and the Mesa Verde comparison

United States National Park Service, Mesa Verde National Park, Cliff Dwellings. Most cliff dwellings dated 1180-1300 CE; evidence for domestic uses, communal spaces and seep-spring access. Sources checked 22 November 2026.

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USDA United States Department of Agriculture · **DOI** Digital object identifier · **CE** Common Era, historical year notation

RC-DREAM6 · Dreamhouse supplied concept image

User-supplied dreamhousein.zip, archive entry 2026-11-20_4034733911648816959.mp4. Post identifier 4034733911648816959. Frame extracted at 5 seconds. No verified address or photographer is provided. The post description is retained as provenance, not adopted as proof of construction, size, historical identity or self-sufficiency. Commercial reproduction rights remain unresolved. The historical comparison concerns a different, documented place. Sources checked 22 November 2026.

RC-MOUNTVERNON · Productive estate: growing areas, labour and Mount Vernon

George Washington's Mount Vernon, Gardens and Landscapes; interpretation of the kitchen garden, cultivated since at least 1760, and the labour of enslaved and free workers. See also https://www.mountvernon.org/library/digitalhistory/digital-encyclopedia/article/gardeners-at-mount-vernon. Sources checked 22 November 2026.

RC-DREAM21 · Dreamhouse supplied concept image

User-supplied dreamhousein.zip, archive entry 2026-11-13_4029481229997048461.mp4. Post identifier 4029481229997048461. Frame extracted at 8 seconds. No verified address or photographer is provided. The post description is retained as provenance, not adopted as proof of construction, size, historical identity or self-sufficiency. Commercial reproduction rights remain unresolved. The historical comparison concerns a different, documented place. Sources checked 22 November 2026.

RC-TULOU · Shared courtyard: households and the Fujian tulou

UNESCO World Heritage Centre, Fujian Tulou, property 1113. The listed group includes forty-six buildings constructed between the fifteenth and twentieth centuries, with earthen outer walls, tiled roofs and shared interior arrangements. Sources checked 22 November 2026.

RC-DREAM31 · Dreamhouse supplied concept image

User-supplied dreamhousein.zip, archive entry 2026-11-07_4025051339987377387.jpg. Post identifier 4025051339987377387. Original supplied still. No verified address or photographer is provided. The post description is retained as provenance, not adopted as proof of construction, size, historical identity or self-sufficiency. Commercial reproduction rights remain unresolved. The historical comparison concerns a different, documented place. Sources checked 22 November 2026.

RC-SCHRODER · Narrow home: daylight, flexible space and the Schröder House

UNESCO World Heritage Centre, Rietveld Schröder House, property 965. Utrecht, 1924; architect Gerrit Thomas Rietveld, commissioned by Truus Schröder-Schräder. Flexible interior arrangement and De Stijl principles. Sources checked 22 November 2026.

RC-DREAM46 · Dreamhouse supplied concept image

User-supplied dreamhousein.zip, archive entry 2026-10-30_4019263183076115503.mp4. Post identifier 4019263183076115503. Frame extracted at 39 seconds. No verified address or photographer is provided. The post description is retained as provenance, not adopted as proof of construction, size, historical identity or self-sufficiency. Commercial reproduction rights remain unresolved. The historical comparison concerns a different, documented place. Sources checked 22 November 2026.

RC-LLANGORSE · Island setting: water access and the Llangorse crannog

Cadw, Preserving Wales's only crannog: Cadw's work at Llangorse Lake. Government heritage account of the early medieval artificial island and its conservation. Exact construction dating is not repeated because summary accounts differ; no identification of the supplied picture is inferred. Sources checked 22 November 2026.

RC-DREAM65 · Dreamhouse supplied concept image

User-supplied dreamhousein.zip, archive entry 2026-05-07_3891908814845497519.jpg. Post identifier 3891908814845497519. Original supplied still. No verified address or photographer is provided. The post description is retained as provenance, not adopted as proof of construction, size, historical identity or self-sufficiency. Commercial reproduction rights remain unresolved. The historical comparison concerns a different, documented place. Sources checked 22 November 2026.

RC-QUARRYBANK · Waterwheel site: the flow of power at Quarry Bank

National Trust, History of Quarry Bank. Samuel Greg founded the cotton mill at Styal beside the River Bollin in 1784. Institutional account includes water power, child labour, global cotton connections and the estate's transfer to the Trust in 1939. Sources checked 22 November 2026.

RC-DREAM70 · Dreamhouse supplied concept image

User-supplied dreamhousein.zip, archive entry 2026-05-07_3891888668168330580.jpg. Post identifier 3891888668168330580. Original supplied still. No verified address or photographer is provided. The post description is retained as provenance, not adopted as proof of construction, size, historical identity or self-sufficiency. Commercial reproduction rights remain unresolved. The historical comparison concerns a different, documented place. Sources checked 22 November 2026.

RC-STGALL · Abbey Plan of St Gall, circa 825

Abbey Library exhibition object text, page 20; Reichenau, parchment; Cod. Sang. 1092. The estate comparison is editorial. Checked 23 November 2026.

RC-DUXFORD · Duxford Building 79, Hangar 4

Historic England National Heritage List entry 1128126. The estate access comparison is editorial. Checked 23 November 2026.

RC-LAVOISIER · David's portrait of the Lavoisiers, 1788

The Metropolitan Museum of Art collection record, accession 1977.10. Artist, sitters, date, medium, credit and technical examination. Checked 23 November 2026.

RD-ARBOUR-PHOTOS · Muscowpetung Powwow Arbour: exact photograph credits

Project-team press kit, 22 June 2026. Image 118764, Interior Photo During Powwow Event, is credited to Oxbow Architecture. Image 118759, exterior at daybreak, is credited to Lindsay Reid. Both supplied marked reproductions were compared visually with these specific views. Press/media distribution terms do not establish commercial book permission. Access checked 23 November 2026.

https://www.v2com-newswire.com/en/newsroom/categories/institutional-architecture/press-kits/7916-01/rooted-in-culture-the-muscowpetung-powwow-arbour-wins-architizer-a-award-and-canada-s-governor-general-s-medal-in-architecture

https://lindsayreid.photo/projects/muscowpetung-powwow-arbour

RD-MATERIAL-IDENTITY · Material identity and traceable comparison

Identity categories reorganise the supplied sheet 065 without adopting its unsupported prices. Element names and atomic numbers: IUPAC periodic table, 4 May 2022. Radioisotope and measurement distinctions retain the chapter's existing EPA and NIST source records. This comparison adds no market quotation or medical use claim.

https://iupac.org/what-we-do/periodic-table-of-elements/

https://www.nist.gov/metrology/metrological-traceability

RD-ELEMENTS · Atomic numbers, symbols and element names

IUPAC table dated 4 May 2022. All 118 factual number-symbol-name records were parsed and checked for a complete 1-118 sequence. The current book uses an original editable vector layout and a selectable name directory. Standard atomic weights are not reproduced in this simplified map.

https://iupac.org/what-we-do/periodic-table-of-elements/

https://iupac.org/wp-content/uploads/2022/07/IUPAC_Periodic_Table-04May22_CRA.pdf

RD-ELEMENT-ORIGINS · Origins of the Elements

NASA Goddard Space Flight Center, 1 July 2021, Scientific Visualization Studio item 13873; scientific data compiled by Jennifer Johnson. Used to check the production-pathway explanation. The supplied and official poster images are not reproduced in this release.

RD-MOON-GANYMEDE · Ganymede: history, physical interpretation and mission image · reading page 2003

NASA/JPL; NASA Photojournal PIA00716. Historical and physical account: NASA Science, Ganymede. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/jupiter/jupiter-moons/ganymede/facts/

https://photojournal.jpl.nasa.gov/catalog/PIA00716

RD-MOON-TITAN · Titan: history, physical interpretation and mission image · reading page 2004

NASA/JPL-Caltech/Space Science Institute; NASA Photojournal PIA14909. Historical and physical account: NASA Science, Titan. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/saturn/moons/titan/facts/

https://photojournal.jpl.nasa.gov/catalog/PIA14909

RD-MOON-CALLISTO · Callisto: history, physical interpretation and mission image · reading page 2006

NASA/JPL/DLR; NASA Photojournal PIA03456. Historical and physical account: NASA Science, Callisto. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

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IUPAC International Union of Pure and Applied Chemistry · **EPA** Environmental Protection Agency, United States · **NIST** National Institute of Standards and Technology · **NASA** National Aeronautics and Space Administration

https://science.nasa.gov/jupiter/jupiter-moons/callisto/facts/

https://photojournal.jpl.nasa.gov/catalog/PIA03456

RD-MOON-IO · Io: history, physical interpretation and mission image · reading page 2007

NASA/JPL/University of Arizona; NASA Photojournal PIA02308. Historical and physical account: NASA Science, Io. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/jupiter/jupiter-moons/io/facts/

https://photojournal.jpl.nasa.gov/catalog/PIA02308

RD-MOON-MOON · Moon: history, physical interpretation and mission image · reading page 2008

NASA/JPL/USGS; NASA Photojournal PIA00405. Historical and physical account: NASA Science, Moon. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/moon/facts/

https://photojournal.jpl.nasa.gov/catalog/PIA00405

RD-MOON-EUROPA · Europa: history, physical interpretation and mission image · reading page 2009

NASA/JPL-Caltech/SETI Institute; NASA Photojournal PIA19048. Historical and physical account: NASA Science, Europa. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/jupiter/jupiter-moons/europa/europa-facts/

https://photojournal.jpl.nasa.gov/catalog/PIA19048

RD-MOON-TRITON · Triton: history, physical interpretation and mission image · reading page 2010

NASA/JPL/USGS; NASA Photojournal PIA00317. Historical and physical account: NASA Science, Triton. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/neptune/moons/triton/

https://photojournal.jpl.nasa.gov/catalog/PIA00317

RD-MOON-TITANIA · Titania: history, physical interpretation and mission image · reading page 2011

NASA/JPL; NASA Photojournal PIA00036. Historical and physical account: NASA Science, Titania. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/uranus/moons/titania/

https://photojournal.jpl.nasa.gov/catalog/PIA00036

RD-MOON-RHEA · Rhea: history, physical interpretation and mission image · reading page 2012

NASA/JPL/Space Science Institute; NASA Photojournal PIA07763. Historical and physical account: NASA Science, Rhea. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/saturn/moons/rhea/

https://photojournal.jpl.nasa.gov/catalog/PIA07763

RD-MOON-OBERON · Oberon: history, physical interpretation and mission image · reading page 2013

NASA/JPL; NASA Photojournal PIA00034. Historical and physical account: NASA Science, Oberon. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/uranus/moons/oberon/

https://photojournal.jpl.nasa.gov/catalog/PIA00034

RD-MOON-IAPETUS · Iapetus: history, physical interpretation and mission image · reading page 2014

NASA/JPL/Space Science Institute; NASA Photojournal PIA06145. Historical and physical account: NASA Science, Iapetus. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/saturn/moons/iapetus/

https://photojournal.jpl.nasa.gov/catalog/PIA06145

RD-MOON-CHARON · Charon: history, physical interpretation and mission image · reading page 2015

NASA/Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute; NASA Photojournal PIA19866. Historical and physical account: NASA Science, Charon. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/dwarf-planets/pluto/moons/charon/

https://photojournal.jpl.nasa.gov/catalog/PIA19866

RD-MOON-UMBRIEL · Umbriel: history, physical interpretation and mission image · reading page 2016

NASA/JPL; NASA Photojournal PIA00040. Historical and physical account: NASA Science, Umbriel. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/uranus/moons/umbriel/

https://photojournal.jpl.nasa.gov/catalog/PIA00040

RD-MOON-ARIEL · Ariel: history, physical interpretation and mission image · reading page 2017

NASA/JPL; NASA Photojournal PIA00041. Historical and physical account: NASA Science, Ariel. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/uranus/moons/ariel/

https://photojournal.jpl.nasa.gov/catalog/PIA00041

RD-MOON-DIONE · Dione: history, physical interpretation and mission image · reading page 2018

NASA/JPL/Space Science Institute; NASA Photojournal PIA07746. Historical and physical account: NASA Science, Dione. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/saturn/moons/dione/

https://photojournal.jpl.nasa.gov/catalog/PIA07746

RD-MOON-TETHYS · Tethys: history, physical interpretation and mission image · reading page 2019

NASA/JPL/Space Science Institute; NASA Photojournal PIA07738. Historical and physical account: NASA Science, Tethys. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/saturn/moons/tethys/

https://photojournal.jpl.nasa.gov/catalog/PIA07738

RD-MOON-ENCELADUS · Enceladus: history, physical interpretation and mission image · reading page 2020

NASA/JPL/Space Science Institute; NASA Photojournal PIA06254. Historical and physical account: NASA Science, Enceladus. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/saturn/moons/enceladus/

https://photojournal.jpl.nasa.gov/catalog/PIA06254

RD-MOON-MIRANDA · Miranda: history, physical interpretation and mission image · reading page 2021

NASA/JPL-Caltech; NASA Photojournal PIA18185. Historical and physical account: NASA Science, Miranda. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/uranus/moons/miranda/

https://photojournal.jpl.nasa.gov/catalog/PIA18185

RD-MOON-PROTEUS · Proteus: history, physical interpretation and mission image · reading page 2022

NASA/JPL; NASA Photojournal PIA00062. Historical and physical account: NASA Science, Proteus. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/neptune/moons/proteus/

https://photojournal.jpl.nasa.gov/catalog/PIA00062

RD-MOON-MIMAS · Mimas: history, physical interpretation and mission image · reading page 2023

NASA/JPL-Caltech/Space Science Institute; NASA Photojournal PIA17213. Historical and physical account: NASA Science, Mimas. Accessed 23 November 2026. Image enlargement preserves the original frame and its processing; no synthetic surface detail has been added.

https://science.nasa.gov/saturn/moons/mimas/

https://photojournal.jpl.nasa.gov/catalog/PIA17213

RD-CUBE · Original cube reference plates and permutation checks

Original vector drawings and prose by Carlos “Charlie” Verbelen. Methods and notation checked against Rubik’s official online solve guide and the 2020 solution PDF. No source poster artwork, logo or marketing wording is reproduced. The reference illustrates legal sticker states, layer checkpoints and face-relative moves. The recovery records contain the exact permutation checks and their limits.

https://rubiks.com/solve-guide

https://assets.ctfassets.net/r3qu44etwf9a/6kAQCoLmbXXu29TTuArrk1/404118e1f9bfb6f9997157a284bbc572/Rubiks_Solution-Guide_3x3.pdf

RD-GIZA · Dated Egyptian source records

The Metropolitan Museum of Art: Adrien Dauzats, The Great Pyramid, Giza, 1830 or later, 2015.506.1; John Beasley Greene, [Excavations near the Sphinx], 1853, 2005.100.276; Francis Frith, The Sphynx and Great Pyramid, Geezeh, 1857, 66.640.2.6; Nina de Garis Davies, Carpenter with Tools, Tomb of Rekhmire, 31.6.12. The ancient dating in the last record describes the tomb scene, not the modern facsimile. The Frith work is a linked comparison record; its photograph is not newly reproduced here. Museum records checked 23 November 2026.

Collection records: Dauzats painting · Greene photograph · Frith photograph · Davies facsimile

Repair E: optical criteria and flag chronology

Nikon Instruments, MicroscopyU, Resolution. Relationships between wavelength, numerical aperture and the stated resolving criterion. Consulted 23 November 2026.

https://www.microscopyu.com/microscopy-basics/resolution

Argentina.gob.ar, Bandera Nacional; Decree 1027/1943. Distinguishes the 1812 raising, 1816 adoption and the 1818 Sun-bearing war flag. Consulted 23 November 2026.

https://www.argentina.gob.ar/pais/simbolos/bandera

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NASA National Aeronautics and Space Administration · **PDF** Portable Document Format

https://www.argentina.gob.ar/normativa/nacional/decreto-1027-1943-183508/actualizacion

NASA: establishment and operations

John Uri, NASA Johnson Space Center. 65 Years Ago: NASA Begins Operations, 2 October 2023. Institutional history of the 1958 founding act, the October opening and the incorporation of NACA. Consulted 23 November 2026.

https://www.nasa.gov/history/65-years-ago-nasa-begins-operations/

https://www.nasa.gov/history/president-eisenhower-signs-nasa-into-existence/

Pressure measurement: WIKA, Pressure gauges quick start guide, revision 02/2026. Mounting position and permitted conditions apply to the listed models and their individual data sheets. · reading page 311

SINAGIR: Sistema Nacional para la Gestión Integral del Riesgo y la Protección Civil. Argentina's official coordination system for disaster risk management and emergency response. Consult current local instructions during an actual incident. Accessed 23 November 2026.

Cover portrait: William Holl the Younger, after George Richmond, Portrait of Michael Faraday, 1852. The Metropolitan Museum of Art, 2013.86. Public domain. The cover displays a head detail beside the power subject. The original engraving is preserved in the accompanying assets. Accessed 23 November 2026.

AAHA: American Animal Hospital Association. Official institutional name. Accessed 23 November 2026.

AVSAB: American Veterinary Society of Animal Behavior. Official institutional name. Accessed 23 November 2026.

APHIS: Animal and Plant Health Inspection Service. Official institutional name. Accessed 23 November 2026.

TICA: The International Cat Association. FIFe: Fédération Internationale Féline. Registry names, not interchangeable breed counts. Accessed 23 November 2026.

CNEA: Comisión Nacional de Energía Atómica. Official institutional name. Accessed 23 November 2026.

FEMA: Federal Emergency Management Agency. Official institutional name. Accessed 23 November 2026.

CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora. Treaty title. Accessed 23 November 2026.

RD-SDS1 · Thermo Fisher Scientific, Overview of Protein Electrophoresis. Separation principles, sample preparation and interpretation. · reading page 2584

RD-SDS2 · QIAGEN, Protein analysis: SDS-PAGE. Stacking and resolving gels, concentration selection and acrylamide precautions. · reading page 2584

RD-WATER1 · US Geological Survey, Use of Multiparameter Instruments for Routine Field Measurements, Techniques and Methods 9-A6.8, version 1.1, June 2025. · reading page 1466

RD-WATER2 · US Geological Survey, Maryland Real-Time Water Quality, Specific conductance at 25 degrees Celsius. Physical meaning and temperature compensation. · reading page 1466

RD-WATER3 · US Environmental Protection Agency, Field Turbidity Measurement, FSBPROC-103-R7. Measurement technology, units and method comparability. · reading page 1466

ON THIS PAGE

NASA National Aeronautics and Space Administration · **SDS-PAGE** Sodium dodecyl sulfate polyacrylamide gel electrophoresis · **US** United States

Original protein-separation and river-measurement drawings: Carlos "Charlie" Verbelen. Diagrams prepared for this book from the listed technical references. No manufacturer hardware, measured results or certified performance is represented. · reading page 2584

Illustrated chapter-ending signatures

The saved designs combine the author's Carlos "Charlie" Verbelen lettering with interpretive historical portraits. They are contemporary author marks, not the pictured people's handwritten autographs, historical endorsements or newly discovered historical documents. Each selected design appears once. Separate historical facsimile documents retain their own publication records.

The Leloir mark closes the laboratory-record and protein-separation sequence. It refers to the earlier account of Luis Federico Leloir's laboratory and record keeping; it does not attribute the invention of SDS-PAGE to him. Designs without a documented subject match remain preserved in the author's original archive.

George Washington Carver: saved design CCV-P0208. Original outlined artwork retained. Related account: source_390.

https://www.wikidata.org/wiki/Q296898

https://www.nps.gov/articles/george-washington-carver-national-monument-500391.htm

Anna Atkins: saved design CCV-P0067. Original outlined artwork retained. Related account: source_1563, source_1564.

Nikola Tesla: saved design CCV-P0041. Original outlined artwork retained. Related account: source_859.

Georg Simon Ohm: saved design CCV-P0262. Original outlined artwork retained. Related account: source_1463, source_1464.

Gustav Kirchhoff: saved design CCV-P0263. Original outlined artwork retained. Related account: source_2464.

Ernst Abbe: saved design CCV-P0137. Original outlined artwork retained. Related account: source_1257.

https://www.zeiss.com/corporate/en/about-zeiss/past/history/ernst-abbe.html

https://www.wikidata.org/wiki/Q76359

Robert Hooke: saved design CCV-P0224. Original outlined artwork retained. Related account: source_1288, source_1291, source_1292.

Wilbur Wright: saved design CCV-P0216. Original outlined artwork retained. Related account: source_1304.

Otto Lilienthal: saved design CCV-P0270. Original outlined artwork retained. Related account: source_1309, source_1336.

Galileo Galilei: saved design CCV-P0056. Original outlined artwork retained. Related account: source_1513, source_1514.

Isaac Newton: saved design CCV-P0130. Original outlined artwork retained. Related account: source_1515.

https://newtonproject.ox.ac.uk/his-life-and-work-at-a-glance

https://www.wikidata.org/wiki/Q935

Thomas Young: saved design CCV-P0252. Original outlined artwork retained. Related account: source_1516.

ON THIS PAGE

SDS-PAGE Sodium dodecyl sulfate polyacrylamide gel electrophoresis

Michael Faraday: saved design CCV-P0061. Original outlined artwork retained. Related account: source_1518, source_1519, source_1520.

https://www.rigb.org/explore-science/explore/collection/michael-faradays-research-and-work

https://www.wikidata.org/wiki/Q8750

Heinrich Hertz: saved design CCV-P0264. Original outlined artwork retained. Related account: source_1521, source_1522.

Albert Einstein: saved design CCV-P0057. Original outlined artwork retained. Related account: source_1526, source_1527.

Evangelista Torricelli: saved design CCV-P0258. Original outlined artwork retained. Related account: source_1530, source_1531.

Robert Boyle: saved design CCV-P0133. Original outlined artwork retained. Related account: source_1532, source_1533.

https://makingscience.royalsociety.org/people/na8137/robert-boyle

https://collection.sciencemuseumgroup.org.uk/people/ap24349

https://www.wikidata.org/wiki/Q43393

Henri Becquerel: saved design CCV-P0241. Original outlined artwork retained. Related account: source_1538, source_1539.

Lise Meitner: saved design CCV-P0070. Original outlined artwork retained. Related account: source_1542, source_1543.

Wilhelm Ostwald: saved design CCV-P0132. Original outlined artwork retained. Related account: source_1195.

https://www.wilhelm-ostwald-park.de/en/biografie

https://www.wikidata.org/wiki/Q12658

Luis Federico Leloir: saved design CCV-P0135. Original outlined artwork retained. Related account: source_1342, source_1344, source_1345.

https://www.leloir.org.ar/autobiografia-luis-leloir

https://www.wikidata.org/wiki/Q233985

Marie Curie: saved design CCV-P0040. Original outlined artwork retained. Related account: source_2851.

https://www.nobelprize.org/prizes/physics/1903/marie-curie/facts/

https://www.wikidata.org/wiki/Q7186

Manuel Belgrano: saved design CCV-P0140. Original outlined artwork retained. Related account: source_2118, source_2120.

Christiaan Huygens: saved design CCV-P0225. Original outlined artwork retained. Related account: moon_titan.

William Herschel: saved design CCV-P0230. Original outlined artwork retained. Related account: moon_titania, moon_oberon, moon_enceladus, moon_mimas.

https://www.wikidata.org/wiki/Q14277

https://herschelmuseum.org.uk/wp-content/uploads/2025/05/Digitalised-Herschel-200-PDF-2025.pdf

Dwight D. Eisenhower: saved design CCV-P0197. Original outlined artwork retained. Related account: source_2383.

Alexander Graham Bell: saved design CCV-P0210. Original outlined artwork retained. Related account: source_2625.

RF-ELECTRIC · Electrical quantities and assumptions

Original diagrams and concise reference text. Technical facts checked against OpenStax, University Physics Volume 2, sections on Ohm, Coulomb, Gauss and Biot-Savart. The illustrations are original editorial drawings.

https://openstax.org/books/university-physics-volume-2/pages/9-4-ohms-law

https://openstax.org/books/university-physics-volume-2/pages/5-3-coulombs-law

https://openstax.org/books/university-physics-volume-2/pages/12-1-the-biot-savart-law

RF-GAUSS · Closed surfaces and electric flux

Original explanatory geometry. Net electric flux, the outward-normal convention and vacuum permittivity checked against OpenStax, University Physics Volume 2, section 6.2.

RF-FASTENER · Threaded-joint reference

Richard T. Barrett, Fastener Design Manual, NASA Reference Publication 1228, 1990. The new form plate is an editorial drawing, not a reproduced manufacturer drawing or a torque specification.

RF-GEM · Corundum, ruby and sapphire

Australian Museum, Sapphire and ruby: composition, colour and mineral properties. The native comparison is an editorial paraphrase; the former compilation image is no longer used.

RF-FOOD · Food-specific minimum internal temperatures

FoodSafety.gov, Cook to a Safe Minimum Internal Temperature, reviewed 21 November 2024. Consumer guidance; the native extract retains food categories and the three-minute rest where required. Checked 23 November 2026.

RG-OHM · Ohmic elements

Original circuit drawing and concise reference definitions. OpenStax, University Physics Volume 2, section 9.4. Checked 23 November 2026.

RG-KIRCHHOFF · Junction and loop rules

Original two-panel schematic. Charge conservation, loop signs and circuit assumptions checked against OpenStax, University Physics Volume 2, section 10.3. Checked 23 November 2026.

RG-POLARITY · Molecular structure and polarity

Original molecule comparison and native terminology. OpenStax, Chemistry: Atoms First, section 4.6; Organic Chemistry, sections 2.2 and 3.1. Drawings are schematic and do not specify a chemical procedure. Checked 23 November 2026.

https://openstax.org/books/chemistry-atoms-first/pages/4-6-molecular-structure-and-polarity

https://openstax.org/books/organic-chemistry/pages/2-2-polar-covalent-bonds-and-dipole-moments

https://openstax.org/books/organic-chemistry/pages/3-1-functional-groups

RG-ENERGY · Electrical power and energy

The earlier table confused power with energy. The corrected relation distinguishes watts from joules and retains elapsed time. OpenStax, University Physics Volume 2, section 9.5. Checked 23 November 2026.

RG-GEOMETRY · Original analytical drawings

The Nyquist plot uses the circuit and values stated in the manuscript. The contour grid and profile are computed from a new fully declared synthetic function; no real survey is claimed. Angular-size geometry states its exact relation and small-angle approximation. The jig and sprocket drawings retain the existing dimensions and tooth counts. Original SVG and calculation records are retained in the package. Checked 23 November 2026.

OASIS: a portable offline library and radio station · sources and supplied imagery · reading page 496

OASIS with the map screen open. Supplied file 2.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 b58297ea8abaed5a04a00af8c801f2d4a0232732c4c6f65eb7b1489f3696a95e. · reading page 496

Lid equipment and the closed laptop. Supplied file 2.1.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 aea5b23dda1d563dada5bf0739f218e28e8db803e808b4d2e246ecb6655d0d01. · reading page 496

Project NOMAD on the laptop. Supplied file 2.2.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 a0bdccb92c5b0a4e52487a96d43f50e26d872b9a39c1ff041b0f286b92b8779c. · reading page 496

Creator stencil and illuminated controls. Supplied file 2.3.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 2f6358fa025d2b852ff94bff465efeaa0132d3466dbc1fffdd763b68792d37bb. · reading page 496

The complete lid arrangement. Supplied file 2.4.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 10345073d1e396360fd9b6187b639fa9939ec8634f4b7f60c559b09ca2d8a0db. · reading page 496

Handheld radios and the mesh-labelled device. Supplied file 2.5.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 51930083782d65d000fcd460262403636eb93ac041cb6fa5be933f00c378414a. · reading page 496

The labelled RTL-SDR Blog V4 receiver. Supplied file 2.6.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz.

ON THIS PAGE

SVG Scalable Vector Graphics · **OASIS** Offline Advanced System for Information and Survival · **O.A.S.I.S.** Offline Advanced System for Information and Survival

Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 74386a3602e1d90efc20bc32be45ce2bbfec912c2a5c8f5e41b4274d4b5adbae. · reading page 496

Frequency spectrum and waterfall. Supplied file 2.7.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 6f1261fb1bf8faeb2aca0159422db619e82fd75dd7b5786add15d2b4ee795533. · reading page 496

The laptop in its transport recess. Supplied file 2.8.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 03e21e987943026d3bea662336d1fafe2b8dbfdeddc31f7d2664df34fa3aec30. · reading page 496

The platform below the laptop. Supplied file 2.9.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 5338912f17b404b143436443017f93ec7a3af4d7ae3265a06c5eebf088afed58. · reading page 496

Cables and lower storage compartments. Supplied file 2.9.1.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 2a99c202219c1227a2ce7f0fdee770e1d6e21ec76311191e6e55f42c4326d668. · reading page 496

The closed case, viewed from above. Supplied file 2.9.2.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 91b2b3824f1c127dcc61739102ca5ee947b926ae021d053cd692b32a62b762a1. · reading page 496

The upright transport case. Supplied file 2.9.3.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 ca2c491f16d6ac0dc40e89323fcfea6114e80b0222c234500d077e533269d12f. · reading page 496

Handle, latches and exterior fittings. Supplied file 2.9.4.jpg. Supplied OASIS photographs. The case stencil attributes the build to Sienek1986; Project O.A.S.I.S. identifies that creator as Adam Sienkiewicz. Photographer, capture dates and publication licence are not established. Complete original retained; SHA256 f6c1d4b6df782db04f40af750c2176f4f8a485ef2e280f5af2b6a289c7d497b8. · reading page 496

A built-up roof: layers, edges and drainage · sources and supplied imagery · reading page 67

Built-up roof corner and scupper. Supplied file 8.jpg. Supplied illustration bearing a visible HomeTips copyright credit. Retain that credit and the full original. Publication permission has not been established. Complete original retained; SHA256 d6b6f77102703d9c77606facf15794f2b455519e0a8f5a21009ce7952785f084. · reading page 67

A replacement shingle and the roof around it · sources and supplied imagery · reading page 70

Replacement shingle beneath a lifted course. Supplied file 9.jpg. Supplied image. Original creator, date, source publication and reuse permission are not established. Complete original retained; SHA256 d3f11291f4371b0295526015ffe6e05fee4798e27972840791e9de138e9e6df7. · reading page 70

Container buildings: what carries the roof and the openings · sources and supplied imagery · reading page 466

Containers around a central roofed space. Supplied file 10.jpg. Supplied image. Original creator, date, source publication and reuse permission are not established. Complete original retained; SHA256 1469f2e929a0849f41148cceb06ebaa33c4eca8bace75fa4ec8ba8d8204ecb6b. · reading page 466

A sink trap: water seal, joints and ventilation · sources and supplied imagery · reading page 484

Sink strainer and tubular trap, separated into parts. Supplied file 11.jpg. Supplied illustration bearing a visible HomeTips copyright credit. Retain that credit and the full original. Publication permission has not been established. Complete original retained; SHA256 025741dd2496204b43b1bb1deea0f3fbd208e7077009837a8080e431a830fcfb. · reading page 484

Two-way slabs: plan, sections and reinforcement notation · sources and supplied imagery · reading page 469

Supplied slab poster: plan, sections and conflicting notation. Supplied file Two-Way Slab Reinforcement (Plan & Section Details).jpg. Supplied image. Original creator, date, source publication and reuse permission are not established. Complete original retained; SHA256 f495698731ee25201bd0330ef4e0fa94a6653cf5ab65d03d9e06943f22f68ed0. · reading page 469

Shell-and-tube heat exchange: two fluid paths and one thermal boundary · sources and supplied imagery · reading page 1778

The supplied 10.txt describes heat exchange; 10.jpg depicts a container building. These sources are deliberately separated. The original text is preserved as received; unsupported operating temperatures and equipment claims are not adopted as instructions. · reading page 1778

RD-H-ACI-TERMS · ACI Concrete Terminology, ACI CT-25

American Concrete Institute. Definitions do not validate the supplied 45d rule or numerical reinforcement schedule. Checked 27 November 2026.

RD-H-BACKUP-CISA · #StopRansomware Guide, October 2023

CISA. Official indexed text verified; direct PDF fetch returned 403. No particular hardware or backup interval is prescribed here. Checked 27 November 2026.

RD-H-BAR-NOTATION · Bridge Design Manual, Section 5: Concrete Structures

Colorado Department of Transportation. Bridge manual cited for terminology and the existence of conditional anchorage rules, not used to design a residential slab. Checked 27 November 2026.

RD-H-BUR-VA · Section 07 51 00: Built-Up Bituminous Roofing

US Department of Veterans Affairs / WBDG. December 2021 guide specification. It requires project selections and does not certify the supplied illustration or establish local requirements. Checked 27 November 2026.

ON THIS PAGE

ACI American Concrete Institute · **PDF** Portable Document Format · **US** United States

RD-H-CONTAINER-IBC · 2021 building-code example, Chapter 31: intermodal shipping containers

International Code Council / New Hampshire Building Code. US jurisdiction-specific code example, not a declaration of applicable law in Argentina or permission to build. Checked 27 November 2026.

RD-H-CONTAINER-ICC · Are shipping containers safe to use in building?

International Code Council. Educational conference document, 2019; not a structural design for the supplied concept. Checked 27 November 2026.

RD-H-DRAIN-IPC · 2024 International Plumbing Code, Chapter 7: sanitary drainage

International Code Council. US model code; local adoption and amendments are not established. Indexed official text checked; full interactive page availability may vary. Checked 27 November 2026.

RD-H-FLASH-PNNL · Roof edge protection

Pacific Northwest National Laboratory. Illustrated roof types and details are context-specific; do not transfer a dimension without matching the assembly. Checked 27 November 2026.

RD-H-HEAT-DOE · DOE Fundamentals Handbook: Thermodynamics, Heat Transfer, and Fluid Flow, Volume 2

US Department of Energy. 1992 fundamentals reference; no operating conditions are endorsed for unidentified equipment. Checked 27 November 2026.

RD-H-HX-ASHRAE · Heat Exchangers, 2020 ASHRAE Handbook, Chapter 47

ASHRAE. Conceptual explanation only. Fluid selection, pressure rating and equipment limits are unspecified. Checked 27 November 2026.

RD-H-HX-DOE · DOE Fundamentals Handbook: Mechanical Science, Volume 1

US Department of Energy. 1993 educational handbook; not a current pressure-vessel specification. Checked 27 November 2026.

RD-H-KIWIX · How does Kiwix work?

Kiwix. ZIM is the archive format name, not an acronym expanded here. Checked 27 November 2026.

RD-H-MESHCORE · MeshCore official repository

MeshCore project. The small photographed mesh unit's exact board and firmware are not established. MeshCore on the present project website does not identify the firmware in an older photograph. Checked 27 November 2026.

RD-H-NATIVE-798 · Offline records for the estate office

Current Rebuilding Civilization manuscript. Native editorial practice, not independent certification of the pictured equipment. Checked 27 November 2026.

RD-H-NOMAD-FAQ · Project NOMAD frequently asked questions

Crosstalk Solutions. No claim of current live web information when disconnected. Checked 27 November 2026.

ON THIS PAGE
US United States · **DOE** Department of Energy

RD-H-NOMAD-HOME · Project NOMAD: local knowledge server

Crosstalk Solutions. Project name is retained without inventing an expansion absent from the checked page. Checked 27 November 2026.

RD-H-NOMAD-REPO · Project NOMAD official repository

Crosstalk Solutions. Repository describes software capability, not proof that all modules or datasets are present in the photographed machine. Checked 27 November 2026.

RD-H-OASIS · Project O.A.S.I.S.: project and creator

Project O.A.S.I.S.. Project-author evidence, not independent performance certification. Current commercial hardware, operating time, shielding and radio claims are not assigned to older supplied photographs. Checked 27 November 2026.

RD-H-SDR-DATA · RTL-SDR Blog V4 data sheet

RTL-SDR Blog. Do not transfer bias-power settings or wiring from this reference to an unidentified antenna or accessory. Checked 27 November 2026.

RD-H-SDR-V4 · RTL-SDR Blog V4 users guide

RTL-SDR Blog. No receiver performance, range, current consumption or antenna specification inferred from screenshots. Checked 27 November 2026.

RD-H-SHINGLE-GAF · Replacement of storm-damaged shingles, technical bulletin R-126

GAF. Manufacturer bulletin is specific technical guidance, not identification of the unknown shingle in the supplied image. Checked 27 November 2026.

RD-H-SHINGLE-INSTALL · How to install roof shingles

GAF. Use the actual product instructions for nail location, count, exposure and compatible sealant. Checked 27 November 2026.

RD-H-SLAB-ACI · Reinforcing bar layout for two-way slabs

ACI / Concrete International. Educational detailing article, November 2012, not a current project design or a substitute for the applicable structural code. Checked 27 November 2026.

RD-H-TRAP-MATERIAL · Bathroom sink drainage components

Oatey. Plastic-to-metal connections require matching fittings; mixed materials do not automatically mean galvanic corrosion. Checked 27 November 2026.

RD-H-TRAP-OATEY · How to install a P-trap

Oatey. Manufacturer project guide, not evidence that all parts or unseen ventilation in the supplied illustration comply with a local plumbing code. Checked 27 November 2026.

RD-H-VENT-IPC · 2024 International Plumbing Code, Chapter 9: vents

International Code Council. No claim that an air-admittance valve is permitted or sufficient at the photographed installation. Checked 27 November 2026.

ON THIS PAGE

O.A.S.I.S. Offline Advanced System for Information and Survival · **ACI** American Concrete Institute

RD-H-DIAGRAMS · Original system-reference drawings

Three original selectable vector drawings explain offline information routes, usable energy and operating time, and the separate fluid passages in a shell-and-tube heat exchanger. Labels are explanatory, not equipment ratings, assembly dimensions or wiring instructions. The English originals are included in the native book and corresponding English/Spanish versions in CharlyTeca. See the linked topic references for the underlying mechanisms.

https://github.com/Crosstalk-Solutions/project-nomad

https://handbook.ashrae.org/handbooks/S20/SI/S20_Ch47/S20_ch47_si.aspx

RD-I-SOURCE-2462 · Complete car electrical wiring harness · reading page 1598

Underlying illustrator unrecorded. Underlying publication rights unrecorded. · reading page 1598

RD-I-SOURCE-2740 · Angled profile members: positions 32 and 33 · reading page 1767

User-supplied original; underlying publication rights unconfirmed. Exact original preserved. · reading page 1767

RD-I-SOURCE-2741 · source_2741 · reading page 1768

User-supplied original; underlying publication rights unconfirmed. Exact original preserved. · reading page 1768

RD-I-SOURCE-2742 · Brazo Robótico 6DOF, BR-001 · reading page 1768

User-supplied original; underlying publication rights unconfirmed. · reading page 1768

RD-I-SOURCE-2136 · Thirteen months and the Moon · reading page 1993

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RD-I-SOURCE-2137 · Nisan and Abib: a cropped calendar table · reading page 1994

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RD-I-SOURCE-2139 · A table attributed to the Book of Enoch · reading page 1996

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RD-I-SOURCE-2140 · A hand-drawn calendar of numbers and symbols · reading page 1997

Supplied ZeusC original · sheet 334. Original file and visible credits preserved. Underlying reproduction permission remains unverified unless a separate rights record identifies it. · reading page 1997

RD-I-SOURCE-2265 · Historical Lunar Maps: Distinguish the Editions · reading page 2033

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RD-I-SOURCE-2314 · A Modern Alternative Map of the Moon · reading page 2034

Supplied ZeusC original · sheet 200. Original file and visible credits preserved. Underlying reproduction permission remains unverified unless a separate rights record identifies it. · reading page 2034

RD-I-SOURCE-2315 · The Moon and Imagined Geography: A Composite Chart · reading page 2035

Supplied ZeusC original · sheet 204. Original file and visible credits preserved. Underlying reproduction permission remains unverified unless a separate rights record identifies it. · reading page 2035

RD-I-SOURCE-2317 · Moon-Map Fragments with Modern Place Names · reading page 2036

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RD-I-SOURCE-2207 · From Antarctic flight lines to the Moon · reading page 2039

Supplied ZeusC original · sheet None. Original file and visible credits preserved. Underlying reproduction permission remains unverified unless a separate rights record identifies it. · reading page 2039

RD-I-SOURCE-1441 · Rouen, the complete supplied photograph · reading page 2192

The separately licensed Ytierny photograph appears in the licensed Rouen plate. Visible signature: Nina Pastuhova. ZeusC: supplied archive mark. · User-supplied original preserved; independent publication history and reuse licence unresolved. · reading page 2192

RD-I-SOURCE-2632 · Eight everyday situations in mechanics · reading page 2305

User-supplied original; underlying rights unconfirmed. · reading page 2305

RD-I-SOURCE-2634 · Applied Mechanics: thirty reference panels · reading page 2306

User-supplied original; underlying rights unconfirmed. · reading page 2306

RD-I-SOURCE-2691 · Rapid Sketch Mapping · reading page 2353

User-supplied original. Underlying publication rights unconfirmed. · reading page 2353

RD-I-SOURCE-2693 · Digital Compass Using Magnetometer, Design Variant 5 · reading page 2353

User-supplied original. Underlying publication rights unconfirmed. · reading page 2353

RD-I-SOURCE-2695 · Earlier Edition 55 page 637 · comparison · reading page 2354

User-supplied original. Underlying publication rights unconfirmed. ZeusC - Supplied archive mark. · reading page 2354

RD-I-SOURCE-2816 · Rizwan Khan: visible design credit. ZeusC: supplied archive mark. · reading page 2397

User-supplied original retained; no independent reuse licence or maker performance certificate located. Complete source sheet, including technical labels, preserved byte-for-byte. · reading page 2397

RD-I-SOURCE-2817 · the Big Dipper and the northern pole · reading page 2399

User-supplied original retained; independent underlying publication and licence unresolved. Complete source sheet preserved byte-for-byte. · reading page 2399

RD-I-SOURCE-2860 · A pedal vehicle in three views · reading page 2438

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RD-I-SPA-D405 · CDC: How to Create an Emergency Water Supply

Household baseline, storage-container suitability, dated rotation and dispensing hygiene. Published27June2025. Access reviewed 27 November 2026.

RD-I-SPA-D406 · FEMA ICS202: Incident Objectives, version3.1

Purpose of objectives, priorities and safety considerations for a defined operational period; the proposed simple handover table is author-created, not an official form. Access reviewed 27 November 2026.

RD-I-SPA-D407 · FEMA P-1019: Emergency Power Systems for Critical Facilities

Chapter5 and AppendixB, especiallyB-5: common failures, shared power components, distribution and environmental exposure. FEMA primaryhost returned403; same FEMA-authored document read at National Institute of Building Sciences repository. Access reviewed 27 November 2026.

RD-I-SPA-D408 · OSHA: Emergency Preparedness and Response, Getting Started

Hazard-specific plans, assistance, accountability, assembly areas and reporting missing workers. Observation/report classification and inventory ledger are editorial organizational guidance. Access reviewed 27 November 2026.

RD-I-SPA-D409 · U.S. Energy Information Administration: Measuring electricity

Power in W versus energy in Wh; no equipment assumptions added. Access reviewed 27 November 2026.

RD-I-SPA-D410 · System Advisor Model battery documentation

Existing book reference retained for distinction between nameplate and delivered energy; no new parameter, efficiency or battery claim introduced. Access reviewed 27 November 2026.

RD-I-SPA-H03 · Richard Buckminster Fuller: Building Construction, US2682235A

Primary patent text and drawings; filing12December1951, publication29June1954. Historical claims not adopted as modern design capacities. Access reviewed 27 November 2026.

RD-I-SPA-H05 · ZEISS: Planetariums, how it all began

Oskar von Miller1913; BauersfeldMarch1919; roof-domeearly1923; Munich21October1923; publicopening7May1925. Access reviewed 27 November 2026.

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FEMA Federal Emergency Management Agency

RD-I-SPA-H06 · U.S. Consumer Product Safety Commission: Public Playground Safety Handbook, July2025

Distinct age, fall, surfacing, entrapment, protrusion and maintenance concerns; guidance is not certification of the supplied concept. Access reviewed 27 November 2026.

RD-I-SPA-E3 · Forest Products Laboratory: Wood Handbook,2021, FPL-GTR-282

Separate treatment of moisture, mechanical properties, grading, fastenings, preservation and deterioration. Access reviewed 27 November 2026.

RD-I-SPA-GILBRETH · Purdue University Archives: digitization of Gilbreth film and audio recordings

147 digitized recordings; applications of photography and film in industrial engineering, home economics and agriculture; fatigue and psychology. New prose source for the existing illustrated Gilbreth/Carlos artwork. Access reviewed 27 November 2026.

Complete supplied image: Group view of three pentagonal play structures with ladder, slide and rope connections. Original file d.16.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 143

Complete supplied image: Complete Dodecahedron DPM No.1 assembly sheet with connector and timber-part quantities. Original file d1.1.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 143

Complete supplied image: Complete DPM No.1 additional-elements sheet, including three numbered panel types and stairs. Original file d1.2.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 145

Complete supplied image: Front view of an open slide attached to a raised pentagonal play pod. Original file d1.3.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 145

Complete supplied image: Supplied raised pod with tubular slide, rope faces and inclined supports. Original file d.14.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 147

Complete supplied image: Two stacked pentagonal rope-and-timber modules; the interface between modules is visible. Original file d1.5.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 147

Complete supplied image: SPA Complex assembled frame perspective, with open crown and supporting structure. Original file dome3.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 149

Complete supplied image: SPA Complex structural perspective, with upper timber lattice, lower dark frame and downward supports. Original file dome4.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 149

Complete supplied image: Complete SPA Complex sheet61, with connector placement diagram and 30-row schedule. Original file dome2.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 150

Complete supplied image: Complete SPA Complex sheet63: Connector No.1, 8 PC, plan, elevations, perspectives and component details. Original file dome1.png. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 152

Complete supplied image: Complete supplied Quadrosphere7×7m concept illustration and material estimate. Original file d2.0.jpg. Supplied archive provenance retained in sources companion; no new underlying rights claim. · reading page 155

Great Seal poster: complete supplied evidence and replacement record · reading page 3098

Reader destination: The Great Seal of the United States: union, peace and public authority. Native source unit source_2292; prior Repair H reading page 3073; supplied ZeusC sheet 246. The complete supplied image below is retained unchanged. It is the object being compared, not the authority for the adopted symbolism. · reading page 3098

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m metre, a length unit · **×** multiplied by

The original poster links nine tail feathers to “completion” and adds a closed-claw interpretation. Those meanings are not stated in the 20 June 1782 report. The new reader chapter separates the report’s explanation from later engraving choices and this supplied interpretation. The source image’s original creator and reproduction permission have not been independently established. No visible markings were removed from the preserved file. · reading page 3098

Reference adaptation and government source · reading page 3098

The new labelled SVG uses the detailed vector obverse from Our Flag, United States Congress, Senate Document 109-18, Washington: U.S. Government Printing Office, 2007, printed page 42 (PDF page 48). Original file: https://www.govinfo.gov/content/pkg/CDOC-109sdoc18/pdf/CDOC-109sdoc18.pdf . Accessed 27 November 2026. The complete PDF and untouched extracted vector artwork are retained in Source_Originals/Repair_I106. · reading page 3098

The full government PDF and untouched extraction are preserved. Only the obverse vector group is used. Fifty small decorative stars on the blue chief were removed to match the plain chief of the 1782 blazon; the thirteen-star constellation above the eagle is unchanged. Added selectable labels, leaders, background and page framing. No other seal components were fabricated. · reading page 3098

The underlying government artwork is public domain in the United States. This reference adaptation is educational and is not an official impression of the Great Seal. It does not represent U.S. government sponsorship or approval. Explanatory labels are newly typeset and selectable. The original supplied poster remains separately recorded above. · reading page 3098

RD-I-SEAL1 · National Museum of American Diplomacy, U.S. Department of State. The Great Seal. https://diplomacy.state.gov/the-great-seal/ Accessed 27 November 2026. The seal as an instrument of official authentication; treaties and commissions; custody and national arms. · reading page 3098

RD-I-SEAL2 · National Archives and Records Administration. Original Design of the Great Seal of the United States (1782). https://www.archives.gov/milestone-documents/original-design-of-the-great-seal-of-the-united-states Accessed 27 November 2026. Committees beginning on 4 July 1776; Charles Thomson and William Barton; adoption on 20 June 1782. · reading page 3098

RD-I-SEAL3 · National Archives Museum. The Great Seal of the United States. https://visit.archives.gov/whats-on/explore-exhibits/great-seal-united-states Accessed 27 November 2026. Contributions from successive design committees and the development of the final emblem. · reading page 3098

RD-I-SEAL4 · Charles Thomson; Continental Congress; National Archives identifier 595243. Report on the Seal of the United States, 20 June 1782. https://docsteach.org/document/report-great-seal/ Accessed 27 November 2026. Complete primary blazon and explanatory text; precise symbolic claims; comparison confirms absence of leaf, fruit and feather counts or closed-claw meaning. · reading page 3098

RD-I-SEAL5 · U.S. Government Publishing Office, GovInfo. The Great Seal. https://www.govinfo.gov/features/great-seal Accessed 27 November 2026. Congress adopted a written blazon without adopting a drawing. · reading page 3098

RD-I-SEAL6 · U.S. Department of State, Bureau of Public Affairs. The Great Seal of the United States. https://diplomacy.state.gov/wp-content/uploads/2022/10/Great-Seal-PDF.pdf Accessed 27 November 2026.

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SVG Scalable Vector Graphics · **PDF** Portable Document Format

Detailed explanation of the 1782, 1841, 1885 and 1904 dies, engraving variation, orientation, and symbolism. Pages concerning the historical dies were read in the complete booklet. · reading page 3098

RD-I-SEAL7 · Joint Committee on Printing, United States Congress; U.S. Government Printing Office. Our Flag, Senate Document 109-18, page 42 (PDF page 48). https://www.govinfo.gov/content/pkg/CDOC-109sdoc18/pdf/CDOC-109sdoc18.pdf Accessed 27 November 2026. Underlying detailed vector obverse drawing used in the original labelled reference adaptation. Title and publication date verified on PDF page 3. · reading page 3098

RD-I-TERRA-AXES · Astrodienst: Main Axis. https://www.astro.com/astrowiki/en/Main_Axis Accessed 27 November 2026. Terminology checked in its stated context; this source does not validate the manuscript's broader cosmology. · reading page 2804

RD-I-TERRA-TEM · MIT: Electromagnetic Fields and Energy, section 14.2, Transverse Electromagnetic Waves. https://web.mit.edu/course/6/6.013_book/www/chapter14/14.2.html Accessed 27 November 2026. Terminology checked in its stated context; this source does not validate the manuscript's broader cosmology. · reading page 2824

FOOD-REFERENCE · Food reference plates and source history

The daily-ration reference is an original selectable vector layout of the existing arithmetic and care guidance. It replaces the simplified bowl graphic at source unit source_453. The values are illustrative inputs, not a prescription. The veterinary sources N01-N04 and N06 remain the evidence for feeding guidance.

The original carrot, green-bean and squash technical drawing is restored at source unit source_454. It is a contemporary reference diagram, not a historical photograph or a veterinary serving chart. The generated still life formerly used in Repair J was withdrawn at the author’s request on 28 November 2026. The prior image, prompt, generation record and verified release remain in the version history. The original care qualifications and source guidance remain in the current reading book.