

History J—Scope and Sequence: Schedule for Topics and Skills

| Week | History/Social Studies | Geography | Biography |
|------|--|--|---|
| 1 | Ancient Sumerians, Ancient Egyptians, Ancient Civilizations; Science, and the beginnings of Mathematical thought; Space and lunar observations; clocks and time; the Stone Age | <i>Iraq; Egypt; Mesopotamia; India; China; Greece; Peru</i> | |
| 2 | Thales and Geometry; Pericles, Euripides, and Socrates; astronomical observations; Babylonians; Greeks and rational thought | <i>Athens; Ionia; Aegean Sea</i> | Thales; Anaximander; Anaximenes; Anaxagoras; Empedocles; Herodotus; Aesop |
| 3 | Numbers; Abstract and Concrete Math; Pythagoras/Pythagorean Theorem; Irrational numbers; phi; Democritus | <i>Mesopotamia; Giza, Egypt; Thrace</i> | Pythagoras; Democritus; Thales |
| 4 | Perfect numbers; Principles of logic; regular solids | <i>Athens; Samos; Italy; Alexandria</i> | Plato; Aristotle; Socrates; Alexander the Great; Artistarchus |
| 5 | Hero and the area of a triangle; mechanical ingenuity in Alexandria; Euclid and division; geometry; Archimedes and inventions | <i>Alexandria; Cairo; Carthage; Rome</i> | Hero; Eudoxus; Euclid; Apollonius; Archimedes; Eratosthenes |
| 6 | Mathematics and logical thought; Roman Architecture; Earth proportions and scale; Astronomy; star classification; Trigonometry; map-making; Mechanics/Force/Work | <i>Alexandria; Syracuse; Sicily; Rome; Rhodes</i> | Julius Caesar; Augustus Caesar; Archimedes; Hipparchus; Eudoxus; Ptolemy |
| 7 | Fall of Rome; gravity and specific gravity; Middle Ages; Astronomers and mapmakers in China; Math and Astronomy around the globe; Fibonacci sequence and the Golden Ratio/Pi | <i>Hippo; Cordoba, Spain; Poland; Hungary; Pisa, Italy; India; Iraq; Morocco; Zanzibar</i> | Augustine; Kublai Khan; Adelard of Bath; Pope Sylvester II; Aryabhata |
| 8 | Renaissance; moveable type and the printing press; plane and solid figures; theories and proofs/explorations and methods of discovery | <i>Paris; Naples; Seville, Spain; Philippines; Rome; Carthage; Samarkland; Syracuse</i> | Thomas Aquinas; Roger Bacon; Johannes Gutenberg; Vasco Nunez de Balboa; Ferdinand Magellan |
| 9 | Scientific Revolution; the Hundred Years' War; Fall of Constantinople; Thirty Years War; England's Civil War; the Plague | <i>Constantinople; Holland; Florence; Rome; Italy</i> | Leonardo da Vinci; Nicholas Copernicus |
| 10 | London's Great Fire; the rotation of the Earth and its three motions; Greek's abstract mathematics; supernovas; Newton | <i>London; Copenhagen Sweden; Prague</i> | Johannes Kepler; Tycho Brache; Martin Luther; Vesalius |
| 11 | The 'Advancement of Experiments,' mathematics and motion; friction/inertia; Galileo's Principle of Relativity | <i>Pisa</i> | Galileo Galilei; Giordano Bruno; Christopher Marlowe; William Shakespeare; Christian Huygens; Galen of Pergamon |
| 12 | Telescopes and microscopes; nature and mathematics; the study of light and vision | | Hans Lippershey; Antonie van Leeuwenhoek; Robert Hooke |
| 13 | Light and travel; Newton's Laws; mathematical proof; Calculus | <i>Holland; Sweden</i> | Rene Descartes; Isaac Newton |
| 14 | Spectroscopy; planetary orbit; cycles of eclipses; invention of the pendulum clock; time and the world; projectile motion | <i>Holland; Copenhagen</i> | Robert Hooke; Edmond Hailey; Olaus Christensen Huygens; John Harrison; Isaac Newton |

(continued on the following page)

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| 15 | Advancements in Chemistry; element discoveries; the ideas behind 'Infinity'; Boyle's Law; Barometers; mathematics and probability; gas and kinetics; atoms and molecules; conservation law | <i>Vienna; Rhodes; Poland; Hamburg, Germany; Ireland; Belgium; Switzerland; Geneva; Netherlands; Russia</i> | Jabir ibn Hayyan; Albertus Magnus; Johann Friedrich Bottger; Franz Deleboe; Hennig Brandt; Robert Boyle; Blaise Pascal; Evangelista Torricelli; Daniel Bernoulli |
| 16 | Mathematics and Physics; Element discoveries; Fahrenheit and Celsius; average density of the Earth; instantaneous speed; Galileo's law of falling bodies | <i>France; Scotland; Poland; Holland</i> | Emilie du Chatelet; Voltaire; John Locke; Louis XIV; John Bunyan; Joseph Black; Henry Cavendish; Karle Scheele; Joseph Priestley; Daniel Fahrenheit; Anders Celsius; James Watt; Antoine-Laurent; Lavoisier |
| 17 | French Revolution and Lavoisier; systems of chemical nomenclature; meteorology, atoms, bonding and Law of Definite Proportions; Avogadro's number | <i>England</i> | William Herschel; Baruch Spinoza; Napoleon Bonaparte; John Dalton; Thomas Harriot; Amedeo Avogadro; Edward Frankland; Friedrich Kekule |
| 18 | Molecules and atomic masses/weights; <i>Principia</i> ; the Periodic Table of Elements; Newton's theory of gravitation; static electricity/the study of electricity and movement | <i>Russia</i> | Dimitri Ivanovich Mendeleev; Robert Bunsen; Niels Bohr; Benjamin Thompson; William Gilbert; Benjamin Franklin; Jean Theophilus Desaguliers |
| 19 | Longitude and latitude; Tropic of Cancer/Tropic of Capricorn; Longitude Act; kinds of electricity; Iodine; magnetic fields and gravitational fields; "the whole universe is tied through energy"; light waves and colors | <i>Rome; Copenhagen; Russia; Italy; London; Canary Islands; Madera Islands; Tropic of Cancer; Tropic of Capricorn; Jerusalem; Philadelphia; Scillies; Portugal; Caribbean; Scotland</i> | Alessandro Volta; Humphry Davy; Hans Christian Oersted; Andre-Marie Ampere; Jean-Bernard-Leon-Foucault; William Sturgeon |
| 20 | Radio waves discovered; Longitude Act; molecules and the universal laws of physics; grandfather clocks; the definition of heat; basics of atomic theory; the definition of work, power, Joules, watts; kinetic and potential energy | <i>Austria; England; Portugal; West Indies;</i> | Heinrich Rudolf Hertz; Ludwig Boltzmann; John Harrison; James Joule; Charles Babbage; George Boole |
| 21 | Laws of thermodynamics; Harrison's H-4 watch; Kelvin Scale; probability | <i>Indonesia; Ireland; Newfoundland</i> | Julius Robert von Mayer; James Joule; William Thompson; James Cook |
| 22 | Nitroglycerine; the Nobel Peace Prize; x-rays; Harrison's watch and sea travel; Ockham's Razor; atoms | <i>Italy; Sweden</i> | Alfred Bernhard Nobel; Wilhelm Conrad Roentgen; Antoine-Henri Becquerel; Albert Michelson; Joseph John Thompson; Albert Einstein; William Gilbert |

(continued on the following page)

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| 23 | Electromagnetism; Coulomb's Law; Morse code; Thomas Edison and Nikola Tesla; electrons and atoms and matter | | Michael Faraday; Charles-Augustin de Coulomb; Samuel Morse; Thomas Edison; Nikola Tesla; Albert Abraham Michelson; Edward Williams Morley; J.J. Thompson; Hermann von Helmholtz; William Crookes; Robert Andrews Millikan |
| 24 | Thompson's model of the atom; Radium; alpha and beta rays; Marie Curie and pitchblende; cosmic radiation; speed of a wave; blackbodies; mathematical constants; Planck's equation; Einstein and atoms and molecules; Special Theory of Relativity | <i>Poland; France; Montreal;</i> | Marie Curie; Pierre Curie; Ernest Rutherford; Victor Hess; Max Planck |
| 25 | Photons and properties; Einstein and Brownian motion; Speed of Light | <i>Denmark; Norway</i> | Lord Rayleigh; Thomas Young; Robert Milikan; Satyendra Nath Bose; Robert Brown; Ernest Rutherford; Niels Bohr |
| 26 | Bohr's picture of an atom; electromagnetic energy; hydrogen nuclei; protons, electrons, and neutrons; quantum mechanics; light as a particle | <i>Germany; Ukraine; Russia; Norway</i> | James Chadwick; George Gamoff; James Franck; Arthur Compton; Louis-Victor de Brolie |
| 27 | The Uncertainty Principle; complementarity; matrix mechanics; Schrodinger's experiments; particles and antiparticles; the "atom smasher" and giant accelerators; neutrino; inert and reactive atoms; the formation of molecules; DNA uncovered | | Werner Heisenberg; Max Born; Erwin Schrodinger; Ernest Solvay; Paul Adrien Marice Dirac; Enrico Fermi; Wolfgang Pauli; Linus Carl Pauling; Watson and Crick |
| 28 | Covalent bonding; World War II; uranium and production of energy; uranium bomb; critical mass; the Manhattan Project | <i>California; Norway; Canada; Hungary; Italy</i> | Gilbert Lewis; J. Robert Openheimer; Otto Hahn; Knut Haukelid; Leo Szilard; Edward Teller; Irene and Frederic Joliot-Curie; Enrico Fermi |
| 29 | Weak force; nuclear fusion and fission; nuclear power and weapons; heavy water; nuclear research | <i>Sweden; New Mexico; Norway; Russia</i> | Enrico Fermi; Fritz Strassman; Lise Meitner; Klaus Fuchs; Richard Feynman; Robert Serber; Edward Teller; Stanislaw Ulam |
| 30 | U-235; Plutonium; Quantum Electrodynamics; Law of Physics; relative motion; invariant motion; time and space | | Richard Feynman; Paul Dirac; Julian Schwinger; Sin'ichiro Tomonaga; Freeman Dyson; Paul Tibbets; Theodore Hall |
| 31 | Distance = velocity x time; Lorentz transformations; further bomb testing in New Mexico; Hiroshima; fourth dimension; mass and motion; the nuclear arms race | <i>Germany; Switzerland; Czech Republic; Belgium; Hiroshima; New Mexico</i> | Hendrik Lorentz; Hermann Minkowski |

(continued on the following page)

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| 32 | General relativity; psychophysics; spacetime; gravitation; metals and crystals; space and the Milky Way; the Doppler effect; redshift; Hubble telescope; communication | <i>Italy; Siberia; Brazil; Belgium; Ireland; Bosnia; Afghanistan</i> | Walther Nernst; Arthur Stanly Eddington; Edwin Powell Hubble; Harlow Shapley; Willem de Sitter; Annie J. Cannon; Aleksandr Friedmann; Georges Lemaitre; Christian Doppler |
| 33 | Galaxies and growth; stars; white dwarfs; concrete; pulsars; giant stars, neutron stars, massive stars, and black holes; space race | <i>California; India; Bulgaria;</i> | Henrietta Leavitt; Subrahmanyan Chandrasekhar; Fritz Zwicky; Lev Landau; George Gamow; John Archibald Wheeler |
| 34 | Event horizons and black holes; gravitational and electromagnetic waves; meteorites and space dust; four forces of the universe; the cosmic microwave background | <i>Belarus; Italy; Germany; Japan; Australia; Washington; Louisiana</i> | Stephen Hawking; Yakov Zel'dovich |
| 35 | Multiverse; the Theory of Everything; supernovas and repulsive force; diamonds, carbon fiber, and dense materials | <i>Czech Republic; Chile; Hawaii</i> | Alan Guth |
| 36 | Dark energy; ceramics and terra cotta; quantum information theory; NASA and space exploration | <i>Switzerland; Arizona; Michigan; Argentina; West Virginia;</i> | Claude Shannon; Carl Sagan |

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