

A Chronology of Significant Events in the History of Science and Technology

- c. 2725 B.C. - Imhotep in Egypt considered the first medical doctor
- c. 2540 B.C. - Pyramids of Egypt constructed
- c. 2000 B.C. - Chinese discovered magnetic attraction
- c. 700 B.C. - Greeks discovered electric attraction produced by rubbing amber
- c. 600 B.C. - Anaximander discovered the ecliptic (the angle between the plane of the earth's rotation and the plane of the solar system)
- c. 600 B.C. - Thales proposed that nature should be understood by replacing myth with logic; that all matter is made of water
- c. 585 B.C. - Thales correctly predicted solar eclipse
- c. 530 B.C. - Pythagoras developed mathematical theory
- c. 500 B.C. - Anaximenes introduced the ideas of condensation and rarefaction
- c. 450 B.C. - Anaxagoras proposed the first clearly materialist philosophy - the universe is made entirely of matter in motion
- c. 370 B.C. - Leucippus and Democritus proposed that matter is made of small, indestructible particles
- 335 B.C. - Aristotle established the Lyceum; studied philosophy, logic
- c. 300 B.C. - Euclid wrote "Elements", a treatise on geometry
- c. 300 B.C. - Aristarchus proposed that the earth revolves around the sun; calculated diameter of the earth
- c. 300 B.C. - The number of volumes in the Library of Alexandria reached 500,000
- c. 220 B.C. - Archimedes made discoveries in mathematics and mechanics
- c. 150 A.D. - Ptolemy studied mathematics, science, geography; proposed that the earth is the center of the solar system
- 190 - Chinese mathematicians calculated pi to five decimal places
- 271 - Chinese mathematicians invented the magnetic compass
- 415 - A mob of rioters burned down the Library of Alexandria, and much of the recorded knowledge of the western world was lost
- 450-1000 - the "Dark Ages" in Europe
- 1232 - Rockets invented in China to defend city of Kaifeng against Mongol invaders
- 1252 - Pope Innocent IV approved the use of torture in witchcraft trials
- 1269 - Maricourt used compass to discover that a magnet is encircled by lines which terminate on two poles
- 1348 - The plague appeared in Europe
- 1390 - The first paper mill began operating in Germany
- 1455 - The Gutenberg Bible became the first book printed with movable metal type
- 1508-1510 Leonardo da Vinci compiled notebooks on mechanics, astronomy, anatomy, and his inventions
- 1543 - Copernicus formed the hypothesis that the planets revolve around the sun.
- 1543 - Vasalius published treatise on human anatomy
- 1570 - Brahe discovered supernova in constellation Cassiopeia
- 1600 - Gilbert discovered that electricity occurs in things other than amber; wrote a book on magnetism
- 1608 - Lippershey invented the telescope
- 1609 - Galileo built 20X telescope, discovered craters and mountains on the moon
- 1609 - Kepler announced his 1st and 2nd laws
- 1613 - Galileo discovered sunspots
- 1614 - Napier discovered logarithms
- 1616 - Galileo called to Rome and ordered to stop supporting the Copernican theory

1619 - Kepler announced his 3rd law

1619 - The first slaves transported to America

1620 - Bacon published "Novum Organum" (scientific method and inductive reasoning)

1621 - Snell discovered the law of refraction

1628 - Harvey published a book describing blood circulation

1633 - The Inquisition denounced Galileo

1637 - Descartes Published "Geometry"

1638 - Galileo published "Discourses Concerning Two New Sciences", summarizing the principles of mechanics

1642 - Pascal invented the mechanical adding machine

1650 - Archbishop Usher estimated by reading the Bible that the earth was created on October 23, 4004 BC at 9:00 AM

1652 - Pascal discovered laws of fluid pressure

1654 - Guericke invented the vacuum pump

1660 - Redi disproved theory of spontaneous generation with experiment on flies

1666 - Newton invented the calculus

1666 - Newton discovered glass prism separates white light into spectrum

1675 - Leibniz independently invented the calculus

1687 - Newton published "Principia", describing the laws of motion

1690 - Locke published "Essay Concerning Human Understanding" (empiricism, tabula rasa)

1692 - The first witchcraft trials in Salem, Massachusetts

1704 - Newton published "Opticks"

1738 - Bernoulli proposed laws of fluid mechanics

1758 - Linnaeus developed taxonomy of species, proposed binomial nomenclature

1764 - Hargreaves invented the spinning jenny

1769 - Watt invented the modern steam engine

1777 - Lavoisier proposed idea of chemical compounds made of elements

1781 - Herschel discovered Uranus

1783 - Michel and Montgolfier invented the hot air balloon; the first people to fly, altitude 1800 m

1785 - Coulomb confirmed the inverse square law for electric force

1785 - Hutton proposed the idea of uniformitarianism in the geological history of the earth

1785 - Cartwright invented the power loom for producing cloth

1787 - Berthollet proposed system of chemical nomenclature

1792 - Rousseau wrote "Social Contract"

1793 - Whitney invented the cotton gin

1796 - Jenner discovered smallpox vaccination

1799 - Discovery of the Rosetta Stone

1800 - Volta invented the battery

1800 - Ampere discovered properties of magnetic field produced by electric current

1803 - Dalton composed the law of definite proportions in chemistry

1804 - Rockets developed by the British Army Corp reached height of 1830 m

1807 - Fulton invented the steamboat

1808 - Dalton published a periodic table based on atomic weights

1811 - Avogadro introduced the concept of the mole

1814 - Stephenson invented the locomotive engine

1820 - Oersted discovered that an electric current causes the deflection of compass needle

1822 - Champollion translated the Rosetta Stone

1825 - discovery of Ampere's Force Law

1827 - Brown discovered Brownian motion

1830 - The first railroad (between Liverpool and Manchester, England)

1831 - Faraday (England) and Henry (U.S.) independently discovered that a current is produced in a wire when it is moved near a magnet

1833 - Charles Lyell published "Principles of Geology", based on uniformitarianism

1839 - Goodyear invented vulcanized rubber

1844 - Morse sent the first telegraph message

1846 - Galle discovered Neptune, accounting for observed perturbations in the motion of Uranus

1849 - Fizeau measured the velocity of light

1853 - Bessemer in Britain and Kelly in U.S. invented the Bessemer steel process

1854 - Boole invented Boolean algebra

1856 - Neanderthal fossil found in Germany

1859 - Darwin published "On The Origin of Species"

1866 - Mendel wrote a paper on his findings about heredity in plants

1868 - Cro-Magnon fossil found in France

1869 - Mendeleev used a periodic table of known elements to correctly predict the properties then undiscovered elements

1873 - Maxwell published "Treatise on Electricity and Magnetism"

1874 - Cantor established principles of mathematical set theory

1877 - Edison invented the phonograph

1877 - Hall discovered the two moons of Mars

1879 - Wundt established the first laboratory for psychology experiments

1879 - Edison invented the electric light bulb

1882 - Lindemann proved that pi is transcendental

1882 - Edison created the first large power station in NYC

1883 - Wroblewski and Olszewski first produced liquid oxygen.

1885 - Benz invented the gasoline-powered automobile

1885 - Eastman invented the box camera

1885 - Hertz discovered the photoelectric effect

1885 - Balmer discovered spectral lines of hydrogen

1887 - Mendelson and Morley conduct experiment showing no evidence for the existence of an "ether"

1888 - Hertz discovered radio waves, verifying Maxwell's prediction of electromagnetic waves

1888 - Edison invented the kinoscope

1889 - Hollerith invented the first calculating machine, used punch cards

1891 - "Java Man" discovered in Indonesia

1892 - Dewar discovered that a double-walled bottle with a vacuum layer insulates the contents from heat flow

1895 - Roentgen discovered x-rays

1895 - Marconi invented antenna and wireless telegraph (short distance)

1896 - Becquerel discovered radioactivity

1896 - Marconi increased range of wireless telegraph to 1.6 km

1897 - Marconi increased range of wireless telegraph to 29 km; first ship-to-shore message

1898 - Curie and Curie announced their discovery of radium and polonium

1899 - Marconi established wireless telegraph service between England and France

1900 - First public awareness of Mendel's findings in genetics, when his 1865-1866 papers were found

1900 - Freud published "The Interpretation of Dreams"

1900 - Finlay discovered that yellow fever is spread by mosquitos

1900 - Planck proposed that energy can only be absorbed or emitted by matter in discrete amounts (quanta)

1901 - First transatlantic wireless telegraph

1902 - Discovery of Tyrannosaurus Rex

1902 - Kennelly (U.S.) and Heaviside (England) independently discovered the ionosphere

1903 - The botanist De Vries discovered mutations in plants

1903 - Wright brothers' airplane remained in flight for 12 seconds

1904 - Fleming invented vacuum tube diode

1904 - Genetics experiments by Thomas Morgan, discovery of sex-linked mutations (among a group of fruit flies with normal red or unusual white eyes, all of the white-eyed offspring were male).

1905 - Einstein published papers on Brownian motion, the photoelectric effect, and the special theory of relativity

1906 - De Forest invented the triode vacuum tube

1906 - Thomson discovered the electron

1908 - the "Tunguska event" - major damage to a forest region in Siberia caused by a comet or meteorite

1908 - Ford produced the Model T automobile

1908 - Wegener proposed theory of continental drift

1909 - The "Piltdown Man" hoax -- a fake archeological discovery announced by dishonest scientists who wanted to "prove" that human beings had evolved in Europe

1911 - Rutherford discovered that the positive charge in an atom is concentrated in a small nucleus; proposed a planetary model of the atom

1912 - Pickard invented the crystal diode and crystal detector

1913 - Edison invented motion pictures with sound

1913 - Ford added the assembly line to his automobile plant

1913 - Bohr published his model of the atom, based on energy states described by one quantum number

1916 - Lewis proposed the idea of covalent bonds

1916 - Einstein published the general theory of relativity

1917 - Germany - the first major military use of airplanes to drop bombs on cities

1919 - Eddington recorded data on the sun's gravitational deflection of starlight during a solar eclipse, confirming Einstein's general theory of relativity

1923 - Freud published "The Ego and the Id"

1923 - Development of the diphtheria vaccine

1923 - Production of insulin to treat diabetes

1923 - Hubble estimated the distance from the Milky Way Galaxy to the Andromeda Galaxy

1924 - Discovery of Australopithecus Africanus, its human-sized brain too large to be that of an ape, but having the canine teeth of a gorilla

1924 - De Broglie proposed that all matter has wave properties

1925 - Pauli proposed the Exclusion Principle (no two electrons in an atom can have the same set of quantum numbers)

1925 - Scopes fired from biology teaching position for teaching evolution

1926 - Schrodinger developed the wave equation

1926 - Born proposed the statistical interpretation of the wave equation

1926 - Goddard launched the first liquid-fueled rocket

1927 - Heisenberg proposed the Uncertainty Principle (we cannot simultaneously determine the position and momentum of a subatomic particle)

1927 - Experiment by Davisson and Germer, and simultaneous experiment by G. P. Thompson, proved the wave behavior of electrons

1927 - the first television transmission (England)

1928 - Dirac developed the relativistic quantum theory

1927 - Big bang theory introduced

1929 - Hubble discovered that the galaxies are moving away from each other, causing an expansion of the universe

1930 - Tombaugh discovered Pluto

1931 - Lawrence invented the cyclotron

1931 - Anderson discovered the positron

1932 - Chadwick discovered the neutron

1936 - the first regular television broadcast (England)

1937 - Discovery of the muon

1938 - Hahn, Strassmann, Meitner and Frisch discovered nuclear fission

1938 - Bethe hypothesized that nuclear fusion is the source of energy in stars

1939 - The first regular TV broadcast in the U.S.

1939 - Discovery of Kirlian photography -- electrical "auras" surrounding living specimens

1942 - Fermi produced the first nuclear chain reaction in an experiment

1942 - Establishment of the Manhattan Project to develop an atomic bomb

1945 - The first atomic bomb was detonated at Hiroshima, Japan -- about 70,000 people were killed instantly; about 30,000 more people died within several weeks

1946 - Gamow proposed the Big Bang hypothesis.

1946 - The University of Pennsylvania developed the ENIAC computer, containing 18,000 vacuum tubes

1947 - W. F. Libby invented radiocarbon dating

1947 - Researchers at Bell Labs invented the transistor

1947 - Discovery of the pion (predicted by Yukawa in 1935)

1948 - Kinsey published "Sexual Behavior in the Human Male"

1951 - Franklin discovered nucleic acids (RNA and DNA), helical shape

1952 - The first sex-change surgery, transforming George Jorgensen into Christine Jorgensen

1953 - Kinsey published "Sexual Behavior in the Human Female"

1953 - Watson and Crick discovered DNA has double helix, composed of ATCG bases occurring in pairs (A with T, and C with G)

1953 - Miller produced amino acids from inorganic compounds and sparks

1953 - Radioactive fluorine dating proved that the "Piltdown Man" artifact was a hoax

1956 - Discovery of the neutrino (predicted by Pauli in 1930)

1957 - The first artificial satellite, Sputnik, put into earth orbit

1958 - U.S. Congress established NASA

1959 - First unmanned spacecraft hit the moon (Soviet Union)

1960 - Maiman invented the ruby laser

1960 - Javan invented the helium-neon laser

1960 - Goodall studied chimpanzees in Tanzania

1960 - Development and approval of the birth control pill

1961 - A person orbited the earth for the first time (Yuri Gagarin)

1963 - Vine and Matthews discovered that rock layers with particular magnetic orientations, indicating reversals of the earth's magnetic field, are symmetrical about the mid-oceanic ridge, indicating that new crust is created at the ridge.

1963 - Gell-Mann proposed protons and neutrons are made of smaller particles (quarks)

1964 - Discovery of a quasar

1964 - Unmanned U.S. spacecraft transmitted television pictures of the moon before hitting the surface

1964 - Wilson and Penzias discovered the background microwave radiation of the universe

1965 - The first "space walk" (Soviet Union)

1966 - The first unmanned soft landing on the moon (Soviet Union)

1967 - Salam and Weinberg developed a model to unite electromagnetism and the weak nuclear force.

1967 - Bell and Hewish discover pulsars

1967 - U.S. astronauts Grissom, White and Chaffee killed during ground test; Apollo program delayed

1968 - Human beings orbited the moon for the first time (Apollo 8)

1969 - People walked on the moon for the first time (Apollo 11)

1969 - Meteorite in Australia found to contain amino acids

1970 - Apollo 13 moon landing canceled due to severe malfunctions

1971 - First unmanned spacecraft hit Mars (Soviet Union)

1971 - Apollo 15 used the lunar rover

1971 - First space station, Salyut 1, and first space docking (Soviet Union)

1972 - Discovery of a 2 million year old humanlike fossil, Homo habilis, in Africa

1973 - U.S. launched Skylab space station

1974 - Discovery of "Lucy" in Africa, an almost complete homonid skelton over 3 million years old, only 3 and a half feet tall but having adult teeth, a small brain, walked upright

1975 - First unmanned soft landing on Venus (Soviet Union)

1975 - The first U.S.-Soviet space docking (Apollo and Soyuz)

1975 - Invention of the CAT scanner (computerized axial tomography)

1976 - Cosmic string theory was introduced

1977 - Voyager spacecraft launched; contained recording of earth sounds, including music and greetings in 55 Earth languages

1977 - Submarine "Alvin" explored midoceanic ridge, discovered chemosynthetic life

1979 - First "test tube baby" from artificial insemination

1979 - Voyager 1 and 2 photographed Jupiter

1980 - Voyager 2 photographed Saturn

1980 - Introduction of the the communication protocol that led to the Internet

1981 - Binnig and Rohrer invented the scanning tunneling microscope

1981 - U.S. launched the first space shuttle, Columbia

1982 - First launch of communications satellites into orbit by space shuttle

1984 - First retrieval of malfunctioning satellites, repair and relaunch by space shuttle

1984 - Discovery of ozone hole over Antarctica

1986 - Voyager 2 photographed Uranus; discovered moons

1986 - Development of the first high temperature superconductors

1986 - Soviet Union launched Mir space station

1986 - U.S. space shuttle Challenger exploded on launch, killing 7 astronauts

1989 - Voyager 2 photographed Neptune; discovered moons

1989 - An asteroid came relatively close to colliding with the earth

1990 - Hubble Space Telescope launched; optical defect discovered

1991 - Discovery of the buried crater near the Yucatan Peninsula, dated at 65 million years old

1992 - Pope John Paul II acknowledged the Vatican's error in the condemnation of Galileo

1993 - Wiles proved Fermat's Last Theorem, which had been first proposed in 1637

1993 - Hubble Space Telescope repaired

1994 - Hubble Space Telescope confirmed existence of a black hole

1994 - Astronomers observed comet Shoemaker-Levy 9 (S-L 9) colliding with Jupiter

1995 - the second U.S./Russian space docking (Atlantis and Mir)

1995 - Discovery of the top quark at Fermilab

1996 - Pope John Paul II affirmed evolution by natural selection

1997 - Microscopic analysis of meteorite led to belief in ancient life on Mars

1997 - Pathfinder vehicle studied and photographed Mars

A Guide to Inventions and Discoveries:

From Adrenaline to the Zipper

Adrenaline: (isolation of) John Jacob Abel, U.S., 1897.
Aerosol can Erik Rotheim, Norway, 1926.
Air brake:George Westinghouse, U.S., 1868.
Air conditioning:Willis Carrier, U.S., 1911.
Airship:(non-rigid) Henri Giffard, France, 1852; (rigid) Ferdinand von Zeppelin, Germany, 1900.
Aluminum manufacture:(by electrolytic action) Charles M. Hall, U.S., 1866.
Anatomy, human:(De fabrica corporis humani, an illustrated systematic study of the human body) Andreas Vesalius, Belgium, 1543; (comparative: parts of an organism are correlated to the functioning whole) Georges Cuvier, France, 1799–1805.
Anesthetic:(first use of anesthetic—ether—on humans) Crawford W. Long, U.S., 1842.
Antibiotics:(first demonstration of antibiotic effect) Louis Pasteur, Jules-François Joubert, France, 1887; (discovery of penicillin, first modern antibiotic) Alexander Fleming, Scotland, 1928; (penicillin's infection-fighting properties) Howard Florey, Ernst Chain, England, 1940.
Antiseptic:(surgery) Joseph Lister, England, 1867.
Antitoxin, diphtheria:Emil von Behring, Germany, 1890.
Appliances, electric:(fan) Schuyler Wheeler, U.S., 1882; (flatiron) Henry W. Seely, U.S., 1882; (stove) Hadaway, U.S., 1896; (washing machine) Alva Fisher, U.S., 1906.
Aqualung:Jacques-Yves Cousteau, Emile Gagnan, France, 1943.
Aspirin:Dr. Felix Hoffman, Germany, 1899.
Astronomical calculator:The Antikythera device, Greece, first century B.C.. Found off island of Antikythera in 1900.
Atom:(nuclear model of) Ernest Rutherford, England, 1911.
Atomic structure:(formulated nuclear model of atom, Rutherford model) Ernest Rutherford, England, 1911; (proposed current concept of atomic structure, the Bohr model) Niels Bohr, Denmark, 1913.
Atomic theory:(ancient) Leucippus, Democritus, Greece, c. 500 B.C.; Lucretius, Rome c.100 B.C.; (modern) John Dalton, England, 1808.
Automobile:(first with internal combustion engine, 250 rpm) Karl Benz, Germany, 1885; (first with practical high-speed internal combustion engine, 900 rpm) Gottlieb Daimler, Germany, 1885; (first true automobile, not carriage with motor) René Panhard, Emile Lavassor, France, 1891; (carburetor, spray) Charles E. Duryea, U.S., 1892.
Autopilot:(for aircraft) Elmer A. Sperry, U.S., c.1910, first successful test, 1912, in a Curtiss flying boat.
Avogadro's law:(equal volumes of all gases at the same temperature and pressure contain equal number of molecules) Amedeo Avogadro, Italy, 1811.
Bacteria:Anton van Leeuwenhoek, The Netherlands, 1683.
Balloon, hot-air:Joseph and Jacques Montgolfier, France, 1783.
Barbed wire:(most popular) Joseph E. Glidden, U.S., 1873.
Bar codes (computer-scanned binary signal code):(retail trade use) Monarch Marking, U.S. 1970; (industrial use) Plessey Telecommunications, England, 1970.
Barometer:Evangelista Torricelli, Italy, 1643.
Bicycle:Karl D. von Sauerbronn, Germany, 1816; (first modern model) James Starley, England, 1884.
Big Bang theory:(the universe originated with a huge explosion) George LeMaitre, Belgium, 1927; (modified LeMaitre theory labeled "Big Bang") George A. Gamow, U.S., 1948; (cosmic microwave background radiation discovered, confirms theory) Arno A. Penzias and Robert W. Wilson, U.S., 1965.
Blood, circulation of:William Harvey, England, 1628.
Boyle's law:(relation between pressure and volume in gases) Robert Boyle, Ireland, 1662.
Braille:Louis Braille, France, 1829.
Bridges:(suspension, iron chains) James Finley, Pa., 1800; (wire suspension) Marc Seguin, Lyons, 1825; (truss) Ithiel Town, U.S., 1820.
Bullet:(conical) Claude Minié, France, 1849.
Calculating machine:(logarithms: made multiplying easier and thus calculators practical) John Napier, Scotland, 1614; (slide rule) William Oughtred, England, 1632; (digital calculator) Blaise Pascal, 1642; (multiplication machine) Gottfried Leibniz, Germany, 1671; (important 19th-century contributors to modern machine) Frank S. Baldwin, Jay R. Monroe, Dorr E. Felt, W. T. Ohdner, William Burroughs, all U.S.; ("analytical engine" design, included concepts of programming, taping) Charles Babbage, England, 1835.
Calculus:Isaac Newton, England, 1669; (differential calculus) Gottfried Leibniz, Germany, 1684.
Camera:(hand-held) George Eastman, U.S., 1888; (Polaroid Land) Edwin Land, U.S., 1948.
"Canals" of Mars:
Giovanni Schiaparelli, Italy, 1877.
Carpet sweeper:Melville R. Bissell, U.S., 1876.
Car radio:William Lear, Elmer Wavering, U.S., 1929, manufactured by Galvin Manufacturing Co., "Motorola."
Cells:(word used to describe microscopic examination of cork) Robert Hooke, England, 1665; (theory: cells are common structural and functional unit of all living organisms) Theodor Schwann, Matthias Schleiden, 1838–1839.
Cement, Portland:Joseph Aspdin, England, 1824.
Chewing gum:(spruce-based) John Curtis, U.S., 1848; (chicle-based) Thomas Adams, U.S., 1870.
Cholera bacterium:Robert Koch, Germany, 1883.
Circuit, integrated:(theoretical) G.W.A. Dummer, England, 1952; (phase-shift oscillator) Jack S. Kilby, Texas Instruments, U.S., 1959.
Classification of plants:
(first modern, based on comparative study of forms) Andrea Cesalpino, Italy, 1583; (classification of plants and animals by genera and species) Carolus Linnaeus, Sweden, 1737–1753.
Clock, pendulum:Christian Huygens, The Netherlands, 1656.
Coca-Cola:John Pemberton, U.S., 1886.
Combustion:(nature of) Antoine Lavoisier, France, 1777.
Compact disk:RCA, U.S., 1972.
Computers:(first design of analytical engine) Charles Babbage, 1830s; (ENIAC, Electronic Numerical Integrator and Calculator, first all-electronic, completed) John Presper Eckert, Jr., John Mauchly, U.S., 1945; (dedicated at University of Pennsylvania) 1946; (UNIVAC, Universal Automatic Computer, handled both numeric and alphabetic data) 1951; (personal computer) Steve Wozniak, U.S., 1976.
Concrete:(reinforced) Joseph Monier, France, 1877.
Condensed milk:Gail Borden, U.S., 1853.
Conditioned reflex:Ivan Pavlov, Russia, c.1910.
Conservation of electric charge:(the total electric charge of the universe or any closed system is constant) Benjamin Franklin, U.S., 1751–1754.
Contagion theory:(infectious diseases caused by living agent transmitted from person to person) Girolamo Fracastoro, Italy, 1546.

Continental drift theory:(geographer who pieced together continents into a single landmass on maps) Antonio Snider-Pellegrini, France, 1858; (first proposed in lecture) Frank Taylor, U.S. 1912; (first comprehensive detailed theory) Alfred Wegener, Germany, 1912.

Contraceptive, oral:Gregory Pincus, Min Chuch Chang, John Rock, Carl Djerassi, U.S., 1951.

Converter, Bessemer:William Kelly, U.S., 1851.

Cosmetics:Egypt, c. 4000 B.C.

Cosmic string theory:(first postulated) Thomas Kibble, UK, 1976.

Cotton gin:Eli Whitney, U.S., 1793.

Crossbow:China, c. 300 B.C.

Cyclotron:Ernest O. Lawrence, U.S., 1931.

Defibrillator:
Dr. William Bennett Kouwenhoven, U.S., 1932; (implantable) M. Stephen Heilman, MD, Dr. Alois Langer, Morton Mower, MD, Michel Mirowski, MD, 1980.

Deuterium: (heavy hydrogen) Harold Urey, U.S., 1931.

Disease: (chemicals in treatment of) crusaded by Philippus Paracelsus, 1527–1541; (germ theory) Louis Pasteur, France, 1862–1877.

DNA: (deoxyribonucleic acid) Friedrich Meischer, Germany, 1869; (determination of double-helical structure) F. H. Crick, England and James D. Watson, U.S., 1953.

Dye: (aniline, start of synthetic dye industry) William H. Perkin, England, 1856.

Dynamite: Alfred Nobel, Sweden, 1867.

Electric cooking utensil: (first) patented by St. George Lane-Fox, England, 1874.

Electric generator (dynamo): (laboratory model) Michael Faraday, England, 1832; Joseph Henry, U.S., c.1832; (hand-driven model) Hippolyte Pixii, France, 1833; (alternating-current generator) Nikola Tesla, U.S., U.S., 1892.

Electric lamp: (arc lamp) Sir Humphrey Davy, England, 1801; (fluorescent lamp) A.E. Becquerel, France, 1867; (incandescent lamp) Sir Joseph Swann, England, Thomas A. Edison, U.S., contemporaneously, 1870s; (carbon arc street lamp) Charles F. Brush, U.S., 1879; (first widely marketed incandescent lamp) Thomas A. Edison, U.S., 1879; (mercury vapor lamp) Peter Cooper Hewitt, U.S., 1903; (neon lamp) Georges Claude, France, 1911; (tungsten filament) Irving Langmuir, U.S., 1915.

Electrocardiography: Demonstrated by Augustus Waller, Switzerland, 1887; (first practical device for recording activity of heart) Willem Einthoven, 1903, Netherlands.

Electromagnet: William Sturgeon, England, 1823.

Electron: Sir Joseph J. Thompson, England, 1897.

Electronic mail: Ray Tomlinson, U.S., 1972.

Elevator, passenger: (safety device permitting use by passengers) Elisha G. Otis, U.S., 1852; (elevator utilizing safety device) 1857.

$E = mc^2$: (equivalence of mass and energy) Albert Einstein, Switzerland, 1907.

Engine, internal combustion: No single inventor. Fundamental theory established by Sadi Carnot, France, 1824; (two-stroke) Etienne Lenoir, France, 1860; (ideal operating cycle for four-stroke) Alphonse Beau de Roche, France, 1862; (operating four-stroke) Nikolaus Otto, Germany, 1876; (diesel) Rudolf Diesel, Germany, 1892; (rotary) Felix Wankel, Germany, 1956.

Evolution: (organic) Jean-Baptiste Lamarck, France, 1809; (by natural selection) Charles Darwin, England, 1859.

Exclusion principle: (no two electrons in an atom can occupy the same energy level) Wolfgang Pauli, Germany, 1925.

Expanding universe theory: (first proposed) George Lemaitre, Belgium, 1927; (discovered first direct evidence that the universe is expanding) Edwin P. Hubble, U.S., 1929; (Hubble constant: a measure of the rate at which the universe is expanding) Edwin P. Hubble, U.S., 1929.

Falling bodies, law of: Galileo Galilei, Italy, 1590.

Fermentation: (microorganisms as cause of) Louis Pasteur, France, c.1860.

Fiber optics: Narinder Kapany, England, 1955.

Fibers, man-made: (nitrocellulose fibers treated to change flammable nitrocellulose to harmless cellulose, precursor of rayon) Sir Joseph Swann, England, 1883; (rayon) Count Hilaire de Chardonnet, France, 1889; (Celanese) Henry and Camille Dreyfuss, U.S., England, 1921; (research on polyesters and polyamides, basis for modern man-made fibers) U.S., England, Germany, 1930s; (nylon) Wallace H. Carothers, U.S., 1935.

Frozen food: Clarence Birdseye, U.S., 1924.

Gene transfer: (recombinant DNA organism) Herbert Boyer, Stanley Cohen, U.S., 1973; (human) Steven Rosenberg, R. Michael Blaese, W. French Anderson, U.S., 1989.

Geometry, elements of: Euclid, Alexandria, Egypt, c. 300 B.C.; (analytic) René Descartes, France; and Pierre de Fermat, Switzerland, 1637.

Gravitation, law of: Sir Isaac Newton, England, c.1665 (published 1687).

Gunpowder: China, c.700.

Gyrocompass: Elmer A. Sperry, U.S., 1905.

Gyroscope: Jean Léon Foucault, France, 1852.

Halley's Comet: Edmund Halley, England, 1705.

Heart implanted in human, permanent artificial: Dr. Robert Jarvik, U.S., 1982.

Heart, temporary artificial: Willem Kolff, Netherlands, U.S., 1957.

Helicopter: (double rotor) Heinrich Focke, Germany, 1936; (single rotor) Igor Sikorsky, U.S., 1939.

Helium first observed on sun: Sir Joseph Lockyer, England, 1868.

Heredity, laws of: Gregor Mendel, Austria, 1865.

Holograph: Dennis Gabor, England, 1947.

Home videotape systems (VCR): (Betamax) Sony, Japan, 1975; (VHS) Matsushita, Japan, 1975.

Ice age theory: Louis Agassiz, Swiss-American, 1840.

Induction, electric: Joseph Henry, U.S., 1828.

Insulin: (first isolated) Sir Frederick G. Banting and Charles H. Best, Canada, 1921; (discovery first published) Banting and Best, 1922; (Nobel Prize awarded for purification for use in humans) John Macleod and Banting, 1923; (first synthesized), China, 1966.

Intelligence testing: Alfred Binet, Theodore Simon, France, 1905.

Interferon: Alick Isaacs, England, Jean Lindemann, Switzerland, 1957.

Isotopes: (concept of) Frederick Soddy, England, 1912; (stable isotopes) J. J. Thompson, England, 1913; (existence demonstrated by mass spectrography) Francis W. Aston, England, 1919.

Jet propulsion: (engine) Sir Frank Whittle, England, Hans von Ohain, Germany, 1936; (aircraft) Heinkel He 178, 1939.

Kinetic theory of gases: (molecules of a gas are in a state of rapid motion) Daniel Bernoulli, Switzerland, 1738.

Laser: (theoretical work on) Charles H. Townes, Arthur L. Schawlow, U.S., N. Basov, A. Prokhorov, U.S.S.R., 1958; (first working model) T. H. Maiman, U.S., 1960.

Lawn mower: Edwin Budding, John Ferrabee, England, 1830–1831.

LCD (liquid crystal display): Hoffmann-La Roche, Switzerland, 1970.

Lens, bifocal: Benjamin Franklin, U.S., c.1760.

Leyden jar: (prototype electrical condenser) Canon E. G. von Kleist of Kamin, Pomerania, 1745; independently evolved by Cunaeus and P. van Musschenbroek, University of Leyden, Holland, 1746, from where name originated.

Light, nature of: (wave theory) Christian Huygens, The Netherlands, 1678; (electromagnetic theory) James Clerk Maxwell, England, 1873.
Light, speed of: (theory that light has finite velocity) Olaus Roemer, Denmark, 1675.
Lightning rod: Benjamin Franklin, U.S., 1752.
Lock, cylinder: Linus Yale, U.S., 1851.
Locomotive: (steam powered) Richard Trevithick, England, 1804; (first practical, due to multiple-fire-tube boiler) George Stephenson, England, 1829; (largest steam-powered) Union Pacific's "Big Boy," U.S., 1941.
Loom: (horizontal, two-beamed) Egypt, c. 4400 B.C.; (Jacquard drawloom, pattern controlled by punch cards) Jacques de Vaucanson, France, 1745; Joseph-Marie Jacquard, 1801; (flying shuttle) John Kay, England, 1733; (power-driven loom) Edmund Cartwright, England, 1785.
Machine gun: (hand-cranked multibarrel) Richard J. Gatling, U.S., 1862; (practical single barrel, belt-fed) Hiram S. Maxim, Anglo-American, 1884.
Magnet, Earth is: William Gilbert, England, 1600.
Match: (phosphorus) François Derosne, France, 1816; (friction) Charles Sauria, France, 1831; (safety) J. E. Lundstrom, Sweden, 1855.
Measles vaccine: John F. Enders, Thomas Peebles, U.S., 1953.
Metric system: revolutionary government of France, 1790–1801.
Microphone: Charles Wheatstone, England, 1827.
Microscope: (compound) Zacharias Janssen, The Netherlands, 1590; (electron) Vladimir Zworykin et al., U.S., Canada, Germany, 1932–1939.
Microwave oven: Percy Spencer, U.S., 1947.
Motion, laws of: Isaac Newton, England, 1687.
Motion pictures: Thomas A. Edison, U.S., 1893.
Motion pictures, sound: Product of various inventions. First picture with synchronized musical score: Don Juan, 1926; with spoken dialogue: The Jazz Singer, 1927; both Warner Bros.
Motor, electric: Michael Faraday, England, 1822; (alternating-current) Nikola Tesla, U.S., 1892.
Motorcycle: (motor tricycle) Edward Butler, England, 1884; (gasoline-engine motorcycle) Gottlieb Daimler, Germany, 1885.
Moving assembly line: Henry Ford, U.S., 1913.
Neptune: (discovery of) Johann Galle, Germany, 1846.
Neptunium: (first transuranic element, synthesis of) Edward M. McMillan, Philip H. Abelson, U.S., 1940.
Neutron: James Chadwick, England, 1932.
Neutron-induced radiation: Enrico Fermi et al., Italy, 1934.
Nitroglycerin: Ascanio Sobrero, Italy, 1846.
Nuclear fission: Otto Hahn, Fritz Strassmann, Germany, 1938.
Nuclear reactor: Enrico Fermi, Italy, et al., 1942.
Ohm's law: (relationship between strength of electric current, electromotive force, and circuit resistance) Georg S. Ohm, Germany, 1827.
Oil well: Edwin L. Drake, U.S., 1859.
Oxygen: (isolation of) Joseph Priestley, England, 1774; Karl Scheele, Sweden, 1773.
Ozone: Christian Schönbein, Germany, 1839.
Pacemaker: (internal) Clarence W. Lillehie, Earl Bakk, U.S., 1957.
Paper: China, c.100 A.D.
Parachute: Louis S. Lenormand, France, 1783.
Pen: (fountain) Lewis E. Waterman, U.S., 1884; (ball-point, for marking on rough surfaces) John H. Loud, U.S., 1888; (ball-point, for handwriting) Lazlo Biro, Argentina, 1944.
Periodic law: (that properties of elements are functions of their atomic weights) Dmitri Mendeleev, Russia, 1869.
Periodic table
(arrangement of chemical elements based on periodic law) Dmitri Mendeleev, Russia, 1869.
Phonograph: Thomas A. Edison, U.S., 1877.
Photography: (first paper negative, first photograph, on metal) Joseph Nicéphore Niepce, France, 1816–1827; (discovery of fixative powers of hyposulfite of soda) Sir John Herschel, England, 1819; (first direct positive image on silver plate, the daguerreotype) Louis Daguerre, based on work with Niepce, France, 1839; (first paper negative from which a number of positive prints could be made) William Talbot, England, 1841. Work of these four men, taken together, forms basis for all modern photography. (First color images) Alexandre Becquerel, Claude Niepce de Saint-Victor, France, 1848–1860; (commercial color film with three emulsion layers, Kodachrome) U.S., 1935.
Photovoltaic effect: (light falling on certain materials can produce electricity) Edmund Becquerel, France, 1839.
Piano: (Hammerklavier) Bartolommeo Cristofori, Italy, 1709; (pianoforte with sustaining and damper pedals) John Broadwood, England, 1873.
Planetary motion, laws of: Johannes Kepler, Germany, 1609, 1619.
Plant respiration and photosynthesis: Jan Ingenhousz, Holland, 1779.
Plastics: (first material, nitrocellulose softened by vegetable oil, camphor, precursor to Celluloid) Alexander Parkes, England, 1855; (Celluloid, involving recognition of vital effect of camphor) John W. Hyatt, U.S., 1869; (Bakelite, first completely synthetic plastic) Leo H. Baekeland, U.S., 1910; (theoretical background of macromolecules and process of polymerization on which modern plastics industry rests) Hermann Staudinger, Germany, 1922; (polypropylene and low-pressure method for producing high-density polyethylene) Robert Banks, Paul Hogan, U.S., 1958.
Plate tectonics: Alfred Wegener, Germany, 1912–1915.
Plow, forked: Mesopotamia, before 3000 B.C.
Plutonium, synthesis of: Glenn T. Seaborg, Edwin M. McMillan, Arthur C. Wahl, Joseph W. Kennedy, U.S., 1941.
Polio, vaccine: (experimentally safe dead-virus vaccine) Jonas E. Salk, U.S., 1952; (effective large-scale field trials) 1954; (officially approved) 1955; (safe oral live-virus vaccine developed) Albert B. Sabin, U.S., 1954; (available in the U.S.) 1960.
Positron: Carl D. Anderson, U.S., 1932.
Pressure cooker: (early version) Denis Papin, France, 1679.
Printing: (block) Japan, c.700; (movable type) Korea, c.1400, Johann Gutenberg, Germany, c.1450; (lithography, offset) Aloys Senefelder, Germany, 1796; (rotary press) Richard Hoe, U.S., 1844; (linotype) Ottmar Mergenthaler, U.S., 1884.
Probability theory: René Descartes, France, and Pierre de Fermat, Switzerland, 1654.
Proton: Ernest Rutherford, England, 1919.
Prozac: (antidepressant fluoxetine) Bryan B. Malloy, Scotland, and Klaus K. Schmiegell, U.S., 1972; (released for use in U.S.) Eli Lilly & Company, 1987.
Psychoanalysis: Sigmund Freud, Austria, c.1904.
Pulsars: Antony Hewish and Jocelyn Bell Burnell, England, 1967.
Quantum theory: (general) Max Planck, Germany, 1900; (sub-atomic) Niels Bohr, Denmark, 1913; (quantum mechanics) Werner Heisenberg, Erwin Schrödinger, Germany, 1925.
Quarks: Jerome Friedman, Henry Kendall, Richard Taylor, U.S., 1967.
Quasars: Marten Schmidt, U.S., 1963.

Rabies immunization: Louis Pasteur, France, 1885.

Radar: (limited to one-mile range) Christian Hulsmeyer, Germany, 1904; (pulse modulation, used for measuring height of ionosphere) Gregory Breit, Merle Tuve, U.S., 1925; (first practical radar—radio detection and ranging) Sir Robert Watson-Watt, England, 1934–1935.

Radio: (electromagnetism, theory of) James Clerk Maxwell, England, 1873; (spark coil, generator of electromagnetic waves) Heinrich Hertz, Germany, 1886; (first practical system of wireless telegraphy) Guglielmo Marconi, Italy, 1895; (first long-distance telegraphic radio signal sent across the Atlantic) Marconi, 1901; (vacuum electron tube, basis for radio telephony) Sir John Fleming, England, 1904; (triode amplifying tube) Lee de Forest, U.S., 1906; (regenerative circuit, allowing long-distance sound reception) Edwin H. Armstrong, U.S., 1912; (frequency modulation—FM) Edwin H. Armstrong, U.S., 1933.

Radioactivity: (X-rays) Wilhelm K. Roentgen, Germany, 1895; (radioactivity of uranium) Henri Becquerel, France, 1896; (radioactive elements, radium and polonium in uranium ore) Marie Skłodowska-Curie, Pierre Curie, France, 1898; (classification of alpha and beta particle radiation) Pierre Curie, France, 1900; (gamma radiation) Paul-Ulrich Villard, France, 1900.

Radiocarbon dating, carbon-14 method: (discovered) Willard F. Libby, U.S., 1947; (first demonstrated) U.S., 1950.

Radio signals, extraterrestrial: first known radio noise signals were received by U.S. engineer, Karl Jansky, originating from the Galactic Center, 1931.

Radio waves: (cosmic sources, led to radio astronomy) Karl Jansky, U.S., 1932.

Razor: (safety, successfully marketed) King Gillette, U.S., 1901; (electric) Jacob Schick, U.S., 1928, 1931.

Reaper Cyrus McCormick, U.S., 1834.

Refrigerator: Alexander Twining, U.S., James Harrison, Australia, 1850; (first with a compressor device) the Domelse, Chicago, U.S., 1913.

Refrigerator ship: (first) the Frigorifique, cooling unit designed by Charles Teller, France, 1877.

Relativity: (special and general theories of) Albert Einstein, Switzerland, Germany, U.S., 1905–1953.

Revolver: Samuel Colt, U.S., 1835.

Richter scale: Charles F. Richter, U.S., 1935.

Rifle: (muzzle-loaded) Italy, Germany, c.1475; (breech-loaded) England, France, Germany, U.S., c.1866; (bolt-action) Paul von Mauser, Germany, 1889; (automatic) John Browning, U.S., 1918.

Rocket: (liquid-fueled) Robert Goddard, U.S., 1926.

Roller bearing: (wooden for cartwheel) Germany or France, c.100 B.C.

Rotation of Earth: Jean Bernard Foucault, France, 1851.

Royal Observatory, Greenwich: established in 1675 by Charles II of England; John Flamsteed first Astronomer Royal.

Rubber: (vulcanization process) Charles Goodyear, U.S., 1839.

Saccharin: Constantine Fahlberg, Ira Remsen, U.S., 1879.

Safety pin: Walter Hunt, U.S., 1849.

Saturn, ring around: Christian Huygens, The Netherlands, 1659.

“Scotch” tape: Richard Drew, U.S., 1929.

Screw propeller: Sir Francis P. Smith, England, 1836; John Ericsson, England, worked independently of and simultaneously with Smith, 1837.

Seat belt: (three point) Nils Bohlin, Sweden, 1962.

Seismograph: (first accurate) John Milne, England, 1880.

Sewing machine: Elias Howe, U.S., 1846; (continuous stitch) Isaac Singer, U.S., 1851.

Solar energy: First realistic application of solar energy using parabolic solar reflector to drive caloric engine on steam boiler, John Ericsson, U.S., 1860s.

Solar system, universe: (Sun-centered universe) Nicolaus Copernicus, Warsaw, 1543; (establishment of planetary orbits as elliptical) Johannes Kepler, Germany, 1609; (infinity of universe) Giordano Bruno, Italian monk, 1584.

Spectrum: (heterogeneity of light) Sir Isaac Newton, England, 1665–1666.

Spectrum analysis: Gustav Kirchhoff, Robert Bunsen, Germany, 1859.

Spermatozoa: Anton van Leeuwenhoek, The Netherlands, 1683.

Spinning: (spinning wheel) India, introduced to Europe in Middle Ages; (Saxony wheel, continuous spinning of wool or cotton yarn) England, c.1500–1600; (spinning jenny) James Hargreaves, England, 1764; (spinning frame) Sir Richard Arkwright, England, 1769; (spinning mule, completed mechanization of spinning, permitting production of yarn to keep up with demands of modern looms) Samuel Crompton, England, 1779.

Star catalog: (first modern) Tycho Brahe, Denmark, 1572.

Steam engine: (first commercial version based on principles of French physicist Denis Papin) Thomas Savery, England, 1639; (atmospheric steam engine) Thomas Newcomen, England, 1705; (steam engine for pumping water from collieries) Savery, Newcomen, 1725; (modern condensing, double acting) James Watt, England, 1782; (high-pressure) Oliver Evans, U.S., 1804.

Steamship: Claude de Jouffroy d'Abbans, France, 1783; James Rumsey, U.S., 1787; John Fitch, U.S., 1790; (high-pressure) Oliver Evans, U.S., 1804. All preceded Robert Fulton, U.S., 1807, credited with launching first commercially successful steamship.

Stethoscope: René Laënnec, France, 1819.

Sulfa drugs: (parent compound, para-aminobenzenesulfanamide) Paul Gelmo, Austria, 1908; (antibacterial activity) Gerhard Domagk, Germany, 1935.

Superconductivity: (theory) John Bardeen, Leon Cooper, John Scheiffer, U.S., 1957.

Symbolic logic: George Boule, 1854; (modern) Bertrand Russell, Alfred North Whitehead, England, 1910–1913.

Tank, military: Sir Ernest Swinton, England, 1914.

Tape recorder: (magnetic steel tape) Valdemar Poulsen, Denmark, 1899.

Teflon: DuPont, U.S., 1943.

Telegraph: Samuel F. B. Morse, U.S., 1837.

Telephone: Alexander Graham Bell, U.S., 1876.

Telescope: Hans Lippershey, The Netherlands, 1608; (astronomical) Galileo Galilei, Italy, 1609; (reflecting) Isaac Newton, England, 1668.

Television: (iconoscope–T.V. camera tube) Vladimir Zworykin, U.S., 1923, and also kinescope (cathode ray tube) 1928; (mechanical disk-scanning method) successfully demonstrated by J.L. Baird, Scotland, C.F. Jenkins, U.S., 1926; (first all-electric television image) Philo T. Farnsworth, U.S., 1927; (color, mechanical disk) Baird, 1928; (color, compatible with black and white) George Valensi, France, 1938; (color, sequential rotating filter) Peter Goldmark, U.S., first introduced, 1951; (color, compatible with black and white) commercially introduced in U.S., National Television Systems Committee, 1953.

Thermodynamics: (first law: energy cannot be created or destroyed, only converted from one form to another) Julius von Mayer, Germany, 1842; James Joule, England, 1843; (second law: heat cannot of itself pass from a colder to a warmer body) Rudolph Clausius, Germany, 1850; (third law: the entropy of ordered solids reaches zero at the absolute zero of temperature) Walter Nernst, Germany, 1918.

Thermometer: (open-column) Galileo Galilei, c.1593; (clinical) Santorio Santorio, Padua, c.1615; (mercury, also Fahrenheit scale) Gabriel D. Fahrenheit, Germany, 1714; (centigrade scale) Anders Celsius, Sweden, 1742; (absolute-temperature, or Kelvin, scale) William Thompson, Lord Kelvin, England, 1848.

Tire, pneumatic: Robert W. Thompson, England, 1845; (bicycle tire) John B. Dunlop, Northern Ireland, 1888.

Toilet, flush: Product of Minoan civilization, Crete, c. 2000 B.C. Alleged invention by “Thomas Crapper” is untrue.

Tractor: Benjamin Holt, U.S., 1900.
 Transformer, electric: William Stanley, U.S., 1885.
 Transistor: John Bardeen, Walter H. Brattain, William B. Shockley, U.S., 1947.
 Tuberculosis bacterium: Robert Koch, Germany, 1882.
 Typewriter: Christopher Sholes, Carlos Glidden, U.S., 1867.
 Uncertainty principle: (that position and velocity of an object cannot both be measured exactly, at the same time) Werner Heisenberg, Germany, 1927.
 Uranus: (first planet discovered in recorded history) William Herschel, England, 1781.
 Vaccination: Edward Jenner, England, 1796.
 Vacuum cleaner: (manually operated) Ives W. McGaffey, U.S., 1869; (electric) Hubert C. Booth, England, 1901; (upright) J. Murray Spangler, U.S., 1907.
 Van Allen (radiation) Belt: (around Earth) James Van Allen, U.S., 1958.
 Video disk: Philips Co., The Netherlands, 1972.
 Vitamins: (hypothesis of disease deficiency) Sir F. G. Hopkins, Casimir Funk, England, 1912; (vitamin A) Elmer V. McCollum, M. Davis, U.S., 1912–1914; (vitamin B) McCollum, U.S., 1915–1916; (thiamin, B1) Casimir Funk, England, 1912; (riboflavin, B2) D. T. Smith, E. G. Hendrick, U.S., 1926; (niacin) Conrad Elvehjem, U.S., 1937; (B6) Paul Gyorgy, U.S., 1934; (vitamin C) C. A. Hoist, T. Froelich, Norway, 1912; (vitamin D) McCollum, U.S., 1922; (folic acid) Lucy Wills, England, 1933.
 Voltaic pile: (forerunner of modern battery, first source of continuous electric current) Alessandro Volta, Italy, 1800.
 Wallpaper: Europe, 16th and 17th century.
 Wassermann test: (for syphilis) August von Wassermann, Germany, 1906.
 Wheel: (cart, solid wood) Mesopotamia, c.3800–3600 B.C.
 Windmill: Persia, c.600.
 World Wide Web: (developed while working at CERN) Tim Berners-Lee, England, 1989; (development of Mosaic browser makes WWW available for general use) Marc Andreessen, U.S., 1993.
 Xerography: Chester Carlson, U.S., 1938.
 Yellow Fever: (transmission of) Walter Reed, U.S., 1900.
 Zero: India, c. 600; (absolute zero temperature, cessation of all molecular energy) William Thompson, Lord Kelvin, England, 1848.
 Zipper: W. L. Judson, U.S., 1891.

Timeline of everyday inventions

1875 Typewriter
 1900 Photocopying (camera takes a photo of an original)
 1906 Photostats (copies made on light-sensitive paper instead of film)
 1938 Xerography (a dry process, with no liquid developer)
 1938 Tape recorder
 1963 Home video recorder
 1988 Facsimile (fax) machine

3000 B.C. Abacus (board with beads for mathematical functions)
 1623 A.D. Mechanical calculator
 1642 Adding machine
 1946 Electronic computer
 1963 Disk storage for computer
 1969 The Internet
 1970 Floppy disk
 1971 Pocket calculator
 1975 Desktop computer
 1976 Apple computer
 1981 IBM Personal computer
 1984 Laserdisc storage
 1998 More than 20 percent of all U.S. households are online

1906 Light bulbs (tungsten)
 1910 Neon light
 1915 Searchlight arc
 1936 Fluorescent light
 1960 Laser light used in U.S.

1876 Telephone patented
 1951 Long-distance dialling in the U.S.
 1956 Transatlantic telephone cable
 1963 Pushbutton telephone in U.S.
 1970 Picturephone in U.S.
 1983 Cellular phones in U.S.: mobile phones for cars, transportable phones carried in a case, and portable phones carried in hand

1836 Gas stoves are used in homes.
 1901 Electric washing machine is invented.
 1907 Electric vacuum cleaner is introduced.
 1909 Electric toaster is made.
 1911 Air conditioning is invented.
 1940 Automatic dishwasher is manufactured.
 1967 Compact microwave ovens are sold.

1832 Matches
 1845 Rubber bands
 1879 Mechanical pencil
 1888 Ball-point pen
 1900 Paper clips
 1937 Cellophane tape
 1960 Felt-tip pens