

SCIENCE AND INVENTION—TIMELINE

BRITISH EMPIRE—1660 TO 1914

DISCOVERIES OF ISAAC NEWTON TO THE GREAT WAR

INVENTION AND INDUSTRY

- 1764 [James Hargreaves](#) invents the Spinning Jenny, allowing multiple threads of yarn.
- 1769 [Richard Arkwright](#) designs a water frame that made it possible to spin strong threads.
- 1781 [James Watt](#) invents the Steam Engine—ushers in the industrial revolution.
- 1793 [Eli Whitney](#) invents the cotton gin, greatly lowering the price of cotton.
- 1807 [Robert Fulton](#) runs the first steam propelled boat on the Hudson river.
- 1821 [George Stephenson](#) creates the first practical railroad locomotive; ushers in age of railways.
- 1844 [Goodyear](#) receives a patent for vulcanized rubber.
- 1847 [Cyrus McCormick](#) establishes a mechanical reaper business in Chicago, revolutionizes agriculture.
- 1851 [Elias Howe](#) invents sewing machine, but Isaac Singer succeeds in selling his version.
- 1858 [Cyrus Field](#) lays the first trans-Atlantic cable from Ireland to Newfoundland.
- 1865 [Henry Bessemer](#) invents a process that greatly improves production of steel.
- 1893 [Rudolf Diesel](#) invents an internal combustion engine.

ELECTROMAGNETISM AND COMMUNICATION

- 1800 [Alexander Volta](#) invents the first electric battery.
- 1831 [Michael Faraday](#) invents a dynamo which uses electromagnetic induction to create a current.
- 1836 [Samuel Morse](#) invents the telegraph. First Washington to Baltimore telegraph in 1844.
- 1873 [James Clerk Maxwell](#) proposes a theory of electromagnetism.
- 1876 [Alexander Graham Bell](#) receives a patent for the telephone.
- 1879 [Thomas Edison](#) produces the first practical light bulb.
- 1897 [Guglielmo Marconi](#) perfects wireless telegraphy.

ADVANCES IN MEDICINE

- 1628 [William Harvey](#) publishes "De Motu Cordis" detailing operation of heart and circulatory system.
- 1796 [Edward Jenner](#) develops the first small pox vaccine.
- 1861 [Louis Pasteur](#) establishes Germ theory, and develops methods for sterilization.
- 1928 [Alexander Fleming](#) discovers penicillin, an antibiotic substance that kills bacteria.

ASTRONOMY AND HELIOCENTRIC THEORY

- 1543 [Nicholas Copernicus](#) publishes his theory of a heliocentric universe.
- 1609 [Johannes Kepler](#) publishes 'Astronomia Nova', a book detailing his theory of elliptical planetary orbits.
- 1633 [Galileo Galilei](#) is subjected to the Inquisition for promoting heliocentric theory.
- 1687 [Isaac Newton](#) publishes Principia his universal laws of motion.
- 1781 [William Herschel](#) discovers of Uranus, improves telescope.

SCIENCE AND DISCOVERY

- 1789 [Antoine Lavoisier](#) discovers the element oxygen and law of conservation of mass.
- 1805 [John Dalton](#) develops the Atomic Theory of chemistry.
- 1827 Amedeo Avogadro defines the Gas Law relating volume to number of gas molecules.
- 1848 [Lord Kelvin](#) establishes the value of absolute zero.
- 1859 [Charles Darwin](#) publishes *The Origin of Species*.
- 1865 [Gregor Mendel](#) develops laws of inheritance, establishes basis for genetics.
- 1898 [J. J. Thomson](#) discovers electrons, proposes the Plum pudding model of an atom.
- 1898 [Madame Curie](#) discovers polonium, radium, and coins the term "radioactivity".
- 1900 Max Planck develops law of black body radiation, basis for quantum theory.
- 1909 Robert Millikan conducts an oil drop experiment, determines charge of electrons.
- 1913 Niels Bohr establishes the Bohr Model of the atom, proposing electronic orbitals.
- 1915 Albert Einstein proposes a general theory of relativity.