

SCIENCE AND INVENTION—CHARACTERS

BRITISH EMPIRE—1660 TO 1914

DISCOVERIES OF ISAAC NEWTON TO THE GREAT WAR

SCIENCE - ASTRONOMY

- Tycho Brahe** 1546–1601 Made accurate astronomical observations, used by Kepler to calculate motion of planets.
- Johannes Kepler** 1571–1630 Proposed Heliocentric theory after studying measurements of Tycho Brahe.
- Galileo Galilei** 1564–1642 Promoted Heliocentric theory against pressure from the Pope. Invented the telescope.
- Isaac Newton** 1642–1727 Outstanding scientist. Made important breakthroughs in physics, optics, and mathematics.
- William Herschel** 1738–1822 Astronomer who discovered the planet Uranus, improved telescopes, and made many other discoveries.

SCIENCE - PHYSICS/CHEMISTRY

- Antoine Lavoisier** 1743–1794 French scientist, known as the "Father of Chemistry". Discovered oxygen and established the principle of conservation of mass.
- John Dalton** 1766–1844 Chemist who proposed the atomic theory, and designed experiments to prove it.
- Lord Kelvin** 1824–1907 Made important discoveries in thermodynamics and electricity.
- J. J. Thomson** 1856–1940 Discovered the electron, and also the isotope.
- Madame Curie** 1867–1934 A pioneer in the field of radioactivity, and first female winner of the Nobel prize in physics.
- Ernest Rutherford** 1871–1937 Father of nuclear physics. Advocated the orbital theory of the atom.

SCIENCE - BIOLOGY/GEOLOGY

- Carolus Linnaeus** 1707–1778 Great Taxonomist, who initiated naming conventions and classification of plants and animals.
- Charles Lyell** 1797–1875 Influential 19th century Geologist who promoted the idea of doctrine of uniformitarianism (as opposed to catastrophism.)
- Charles Darwin** 1809–1882 Proposed the theory of evolution of species. Wrote *The Descent of Man*.

ELECTROMAGNETISM/COMMUNICATION

- Alexander Volta** 1745–1827 Invented the first usable electrical storage battery.
- Samuel Morse** 1791–1872 Inventor of Morse code, a system telegraph transmission widely used before the telephone.
- Michael Faraday** 1791–1867 Physicist who was important in the development of electricity and magnetism.
- James Clerk Maxwell** 1831–1879 Developed laws defining the behavior of electricity and magnetism.
- Alexander Graham Bell** 1847–1922 Inventor of the telephone, and also a founder of a school for the deaf.
- Thomas Edison** 1847–1931 Prolific inventor, responsible for improvements in the light bulb, movies, phonograph, and many others.
- Guglielmo Marconi** 1874–1937 Inventor of a wireless telegraphy system, first used on ships.

MEDICINE

- William Harvey** 1578–1657 Medical doctor who described the process of circulation and the role of the heart and

blood.

Edward Jenner 1749–1823 English doctor who developed a vaccine for smallpox.

Louis Pasteur 1822–1895 Renowned scientist in bacteriology. Helped develop germ theory of disease and pasteurization process.

Joseph Lister 1827–1912 Promoted the idea of sterilization using antiseptics to kill germs on wounds and medical instruments.

Alexander Fleming 1881–1895 Scottish biologist who studied bacteria and discovered the antibiotic properties of penicillin.

TEXTILES

James Hargreaves 1720–1778 Inventor of an automated Spinning wheel. Founder of the Industrial Revolution.

Richard Arkwright 1732–1792 Inventor of the spinning frame, which allowed water or steam power to spin cloth.

Samuel Crompton 1753–1827 Inventor of the Spinning Mule, which could be used to make fine cloth such as Muslin.

Eli Whitney 1765–1825 Inventor of the Cotton Gin, and also interchangeable parts for rifles.

Elias Howe 1819–1867 American inventor of the sewing machine. His great innovation was the "lock stitch".

INDUSTRY

James Watt 1736–1819 Inventor of the Steam Engine, and founder of the Industrial Revolution.

Robert Fulton 1765–1815 Inventor of Steamboats. Operated the steamboat Clermont on the Hudson River.

George Stephenson 1781–1848 Inventor of the steam locomotive, and the modern railroad.

Goodyear 1800–1860 Discovered the process for 'vulcanizing' rubber, and making it far more usable.

Cyrus McCormick 1809–1884 Invented the mechanical reaper, which revolutionized agriculture, especially in Midwest.

Henry Bessemer 1813–1898 Invented a process for the manufacture of steel that was of superior quality for a low cost.

Rudolf Diesel 1858–1913 German engineer and inventor who developed a practical internal combustion 'diesel' engine.

Wilber and Orville 1871–1948 Inventors of the first practical airplane. The Wright brothers were self-educated bicycle shop owners.