

Industrial Revolution

Written by The Editors of **Encyclopædia Britannica**

Industrial Revolution, in modern history, the process of change from an agrarian, handicraft economy to one dominated by industry and machine manufacture. This process began in England in the 18th century and from there spread to other parts of the world. Although used earlier by French writers, the term Industrial Revolution was first popularized by the English economic historian Arnold Toynbee (1852–83) to describe England's economic development from 1760 to 1840. Since Toynbee's time the term has been more broadly applied.

A brief treatment of the Industrial Revolution follows. For full treatment, see Europe, history of: The Industrial Revolution.

The main features involved in the Industrial Revolution were technological, socioeconomic, and cultural. The technological changes included the following: (1) the use of new basic materials, chiefly iron and steel, (2) the use of new energy sources, including both fuels and motive power, such as coal, the steam engine, electricity, petroleum, and the internal-combustion engine, (3) the invention of new machines, such as the spinning jenny and the power loom that permitted increased production with a smaller expenditure of human energy, (4) a new organization of work known as the factory system, which entailed increased division of labour and specialization of function, (5) important developments in transportation and communication, including the steam locomotive, steamship, automobile, airplane, telegraph, and radio, and (6) the increasing application of science to industry. These technological changes made possible a tremendously increased use of natural resources and the mass production of manufactured goods.

There were also many new developments in nonindustrial spheres, including the following: (1) agricultural improvements that made possible the provision of food for a larger nonagricultural population, (2) economic changes that resulted in a wider distribution of wealth, the decline of land as a source of wealth in the face of rising industrial production, and increased international trade, (3) political changes reflecting the shift in economic power, as well as new state policies corresponding to the needs of an industrialized society, (4) sweeping social changes, including the growth of cities, the development of working-class movements, and the emergence of new patterns of authority, and (5) cultural transformations of a broad order. The worker acquired new and distinctive skills, and his relation to his task shifted; instead of being a craftsman working with hand tools, he became a machine operator, subject to factory discipline. Finally, there was a psychological change: man's confidence in his ability to use resources and to master nature was heightened.