

World History: Connection to Today

Chapter 20

The Industrial Revolution Begins (1750–1850)

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Section 1: Dawn of the Industrial Age

Section 2: Britain Leads the Way

Section 3: Hardships of Early Industrial Life

Section 4: New Ways of Thinking

Dawn of the Industrial Age

- Why was the Industrial Revolution a turning point in world history?
- How did an agricultural revolution contribute to a population explosion?
- What new technologies helped trigger the Industrial Revolution?



A Turning Point in History

The Industrial Revolution was a long, slow, uneven process in which production shifted from simple hand tools to complex machines.

- The rural way of life began to disappear.
- Travelers moved rapidly between countries and continents.
- Country villages grew into towns and cities.
- People bought goods in stores and lived in crowded apartment buildings.

The Industrial Revolution was made possible by:

- a second agricultural revolution.
- a population explosion.
- the development of new technology.



The Second Agricultural Revolution

Dutch farmers led the way. They:

- built dikes to reclaim land from the sea.
- combined smaller fields into larger ones.
- used fertilizer from livestock to renew the soil.

In the 1700s, British farmers expanded on Dutch experiments. They:

- mixed different kinds of soils to get higher crop yields.
- tried new methods of crop rotation.
- grew turnips, which restored exhausted soil.
- invented the seed drill.

Meanwhile, rich landowners pushed ahead with **enclosure**, the process of taking over and fencing off land formerly shared by peasant farmers. As millions of acres were enclosed, farm output rose.



The Population Explosion

The agricultural revolution contributed to a rapid growth of population that continues today.

The population boom of the 1700s was due more to declining death rates than to rising birthrates.

- The agricultural revolution reduced the risk of famine.
- Because they ate better, women were healthier and had stronger babies.
- In the 1800s, better hygiene and sanitation, along with improved medical care, further limited deaths from disease.



New Technology

New sources of energy, along with new materials, enabled business owners to change the way work was done.

AN ENERGY REVOLUTION — During the 1700s, people began to harness new sources of energy.

- Thomas Newcomen developed a steam engine powered by coal.
- James Watt improved on the steam engine.

IMPROVED IRON — Coal was used to produce iron, a material needed for construction of machines and steam engines.

- The Darby family of England developed methods to produce better quality, less expensive iron.



Section 1 Assessment

Which was a result of the enclosure movement?

output dropped.

output rose.

output stayed the same.

became involved in farming.

a) Farm

b) Farm

c) Farm

d) More people

All of the following contributed to the population explosion *except*

ate better.

farmers gained more land.

and sanitation improved.

improved.

a) Women

b) Peasant

c) Hygiene

d) Medical care

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Britain Leads the Way



- Why was Britain the starting point for the Industrial Revolution?
- What changes transformed the textile industry?
- What new technologies were part of the revolution in transportation?





Why Was Britain the Starting Point for the Industrial Revolution?

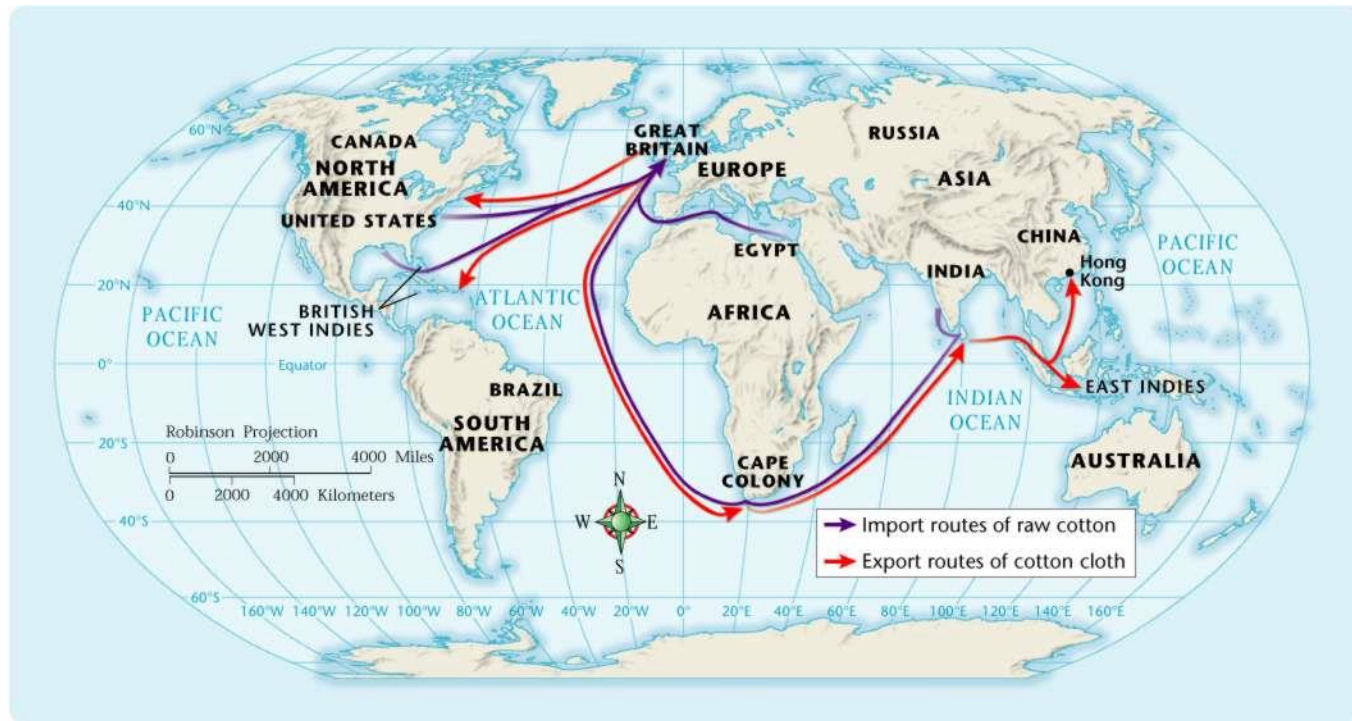
- Britain had large supplies of coal and iron, as well as a large labor supply.
- Britain had plenty of skilled mechanics who were eager to meet the growing demand for new, practical inventions.
- A prosperous British economy meant that the business class had **capital**, or wealth, to invest, and consumer goods were affordable to all.
- Britain had a stable government that supported economic growth.
- Many British entrepreneurs came from religious groups that encouraged thrift and hard work. They focused more on worldly problems rather than concern over life after death.



British Cotton Trade About 1850



In the 1600s, cotton cloth imported from India had become popular. British merchants tried to organize a cotton cloth industry at home. To do so, they developed the putting out system.



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Changes in the Textile Industry



As the demand for cloth grew, inventors came up with a series of remarkable inventions that revolutionized the British textile industry.

The flying shuttle allowed weaves to work much faster.

The spinning jenny spun many threads at the same time.

The waterframe used water power to speed up spinning still further.

The new machines were too large and expensive to be operated at home. Thus, the putting out system was replaced by the first **factories**, places that brought together workers and machines to produce large quantities of goods.



Revolution in Transportation



As production increased, entrepreneurs needed faster and cheaper methods of moving goods from place to place.

Turnpikes, or toll roads, canals, stronger bridges, and upgraded harbors all helped to improve transportation.

The invention of the steam locomotive made possible the growth of railroads.

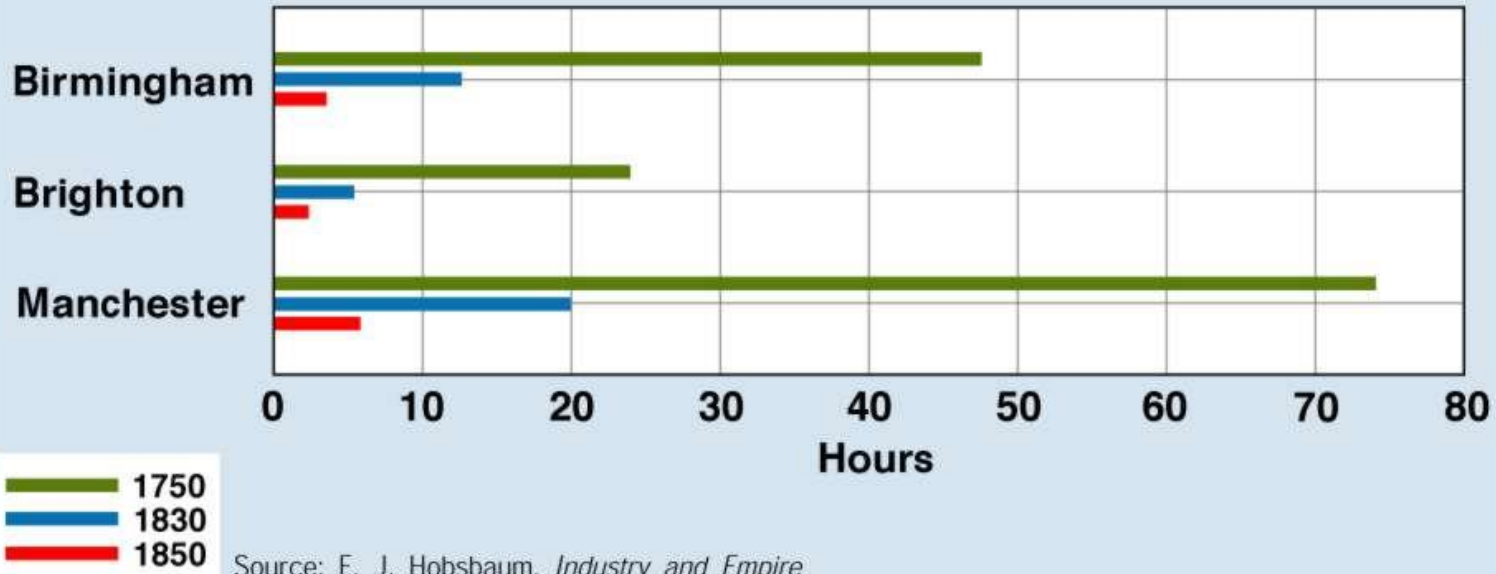
Robert Fulton used the steam engine to power the first steamboat.



Travel Times to London



Travel Times to London



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Section 2 Assessment



The waterframe was an invention that benefited which industry?

the iron industry

the transportation industry

the textile industry

the railroad industry

- a)
- b)
- c)
- d)

The trip from London to Manchester took how much longer in 1750 than in 1850?

approximately 70 hours

approximately 5 hours

approximately 100 hours

d) approximately 30 hours

- a)
- b)
- c)

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Hardships of Early Industrial Life



- What was life like in the new industrial city?
- How did the factory system change the way people worked?
- What benefits and problems did industrialization bring to the working class and the new middle class?

Life in the New Industrial City



- The Industrial Revolution brought rapid **urbanization**, or the movement of people to cities.
- The wealthy and middle class lived in pleasant neighborhoods.
- Many poor people lived in slums. They packed into tiny rooms in **tenements**, multistory buildings divided into crowded apartments. In the slums, there was no sewage or sanitation system, and waste and garbage rotted in the streets. Cholera and other diseases spread rapidly.



The Factory System



The heart of the new industrial city was the factory. There, the technology of the machine age imposed a harsh new way of life on workers.

- Working hours were long, sometimes 12 to 16 hours a day.
- Workers suffered injuries from unsafe machines.
- Workers were exposed to other dangers, such as breathing coal dust in the mines or lint in the textile factories.
- If a worker was sick or injured, they would lose their job.
- Factory jobs took women out of their homes for 12 hours or more a day.
- Factories and mines employed children as young as five years old.
- Employers often hired orphans.



The Working Class and the New Middle Class



WORKING CLASS

- Farm families felt lost when they moved to the cities but, in time, they developed their own sense of community.
- Many found comfort in the Methodist Church, which promised a better life to come.
- Workers protesting low pay and harsh working conditions were met with repression.

MIDDLE CLASS

- Entrepreneurs benefited most from the Industrial Revolution.
- Families lived in nice homes and ate and dressed well.
- Women were encouraged to become “ladies.”
- People valued hard work and the determination to “get ahead.”
- Many believed the poor were responsible for their own misery.



Was the Industrial Revolution a Blessing or a Curse?



The Industrial Revolution created social problems:

- Low pay
- Unemployment
- Dismal living conditions

The Industrial Revolution brought material benefits:

- The increasing demand for mass-produced goods led to the creation of more jobs.
- Wages rose.
- The cost of railroad travel fell.
- Horizons widened and opportunities increased.



Section 3 Assessment



Which was true of life in the factory system?

- a) Women were not permitted to work in the factories.
- b) Workers who were sick or injured benefited from insurance.
- c) Laws prevented workers from working more than eight hours a day.
- d) Many people worked 12 to 16 hours a day.

Which of the following was a benefit of the Industrial Revolution?

- a) The cost of railroad travel rose.
- b) Wages fell.
- c) The poor lived in decent homes and neighborhoods.
- d) More jobs were created.

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New Ways of Thinking



- What was laissez-faire economics?
- How did the views of utilitarians differ from those of socialists?
- What were the ideas of “scientific socialism,” introduced by Karl Marx?



Laissez-Faire Economics



The physiocrats of the Enlightenment argued that government should not interfere in the free operation of the economy. In the early 1800s, middle-class business leaders embraced this laissez faire, or “hands-off” approach.

ADAM SMITH	THOMAS MALTHUS	DAVID RICARDO
A free market would produce more goods at lower prices, making them affordable to everyone. A growing economy would encourage capitalists to reinvest profits in new ventures.	Population would outpace the food supply. As long as the population kept increasing, the poor would suffer. People should have fewer children.	The “iron law of wages” said that when wages were high, families had more children. More children meant a greater labor supply, which led to lower wages and higher unemployment.



Utilitarianism and Socialism



UTILITARIANISM

The idea that the goal of society should be “the greatest happiness for the greatest number” of its citizens.

Jeremy Bentham supported individual freedom, but saw the need for government involvement under certain circumstances.

John Stuart Mill wanted the government to step in to improve the hard lives of the working class.

SOCIALISM

The people as a whole, rather than private individuals, own and operate the means of production.

The Utopians wanted to build self-sufficient communities in which all work was shared and all property owned in common.

Robert Owen set up a model community in Scotland and put Utopian ideas into practice.



Karl Marx and “Scientific Socialism”



Karl Marx outlined a new economic theory:

- The entire course of history was a class struggle between the “haves” and the “have-nots.”
- The modern class struggle pitted the bourgeoisie against the **proletariat**, or working class.
- In the end, the proletariat would take control of the means of production and set up a classless, communist society. In such a society, wealth and power would be equally shared.
- Despite a number of weaknesses, Marx’s theory had a wide influence on industrial Europe.



Section 4 Assessment



What did Thomas Malthus believe?

- a) The food supply would always be great enough for the population.
- b) People should have larger families.
- c) The population would outpace the food supply.
- d) Continued population growth would benefit the poor.

How did Karl Marx believe the class struggle would end?

- a) Power would remain in the hands of the bourgeoisie.
- b) Wealth and power would never be equally shared.
- c) The proletariat would take control of the means of production.
- d) The class struggle would never end.

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