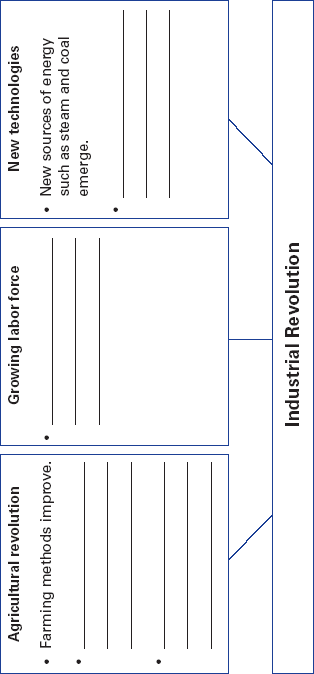
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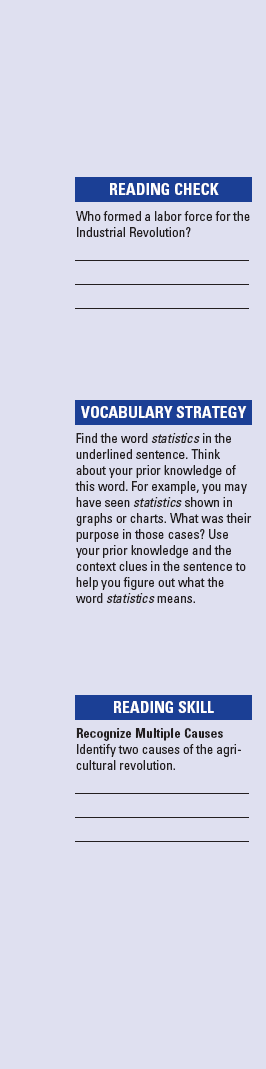


**Focus Question:** What events helped bring about the Industrial  
Revolution?

*As you read this section in your textbook, complete the following flowchart to list  
multiple causes of the Industrial Revolution. Some items have been completed for you.*





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The Industrial Revolution started in Britain. In 1750, most peo-  
ple worked on the land using handmade tools. When the  
Industrial Revolution began, the rural way of life in Britain  
started to disappear. By the 1850s, many country villages had  
grown into industrial towns and cities. New inventions and sci-  
entific “firsts” appeared each year. For example, an American  
dentist first used an **anesthetic** during surgery.

A series of related causes helped spark the Industrial  
Revolution. It was made possible, in part, by another revolu-  
tion—in agriculture. This agricultural revolution improved the  
quality and quantity of food. Farmers mixed different kinds of  
soils or tried new kinds of crop rotation to get higher yields.  
Meanwhile, rich landowners pushed ahead with **enclosure.**Enclosure is the process of taking over and consolidating land  
once shared by peasant farmers. As millions of acres were  
enclosed, farm output and profits rose. The agricultural revo-  
lution created a surplus of food, so fewer people died from  
hunger. Statistics show that the agricultural revolution con-  
tributed to a rapid growth in population.

Agricultural progress, however, had a human cost. Many  
farm laborers lost jobs. They then migrated to towns and cities.  
There, they became the labor force that operated the new  
machines of the Industrial Revolution.

Other factors that helped trigger the Industrial Revolution  
were new technologies and new sources of energy and materi-  
als. One vital power source was coal, used to develop the steam  
engine. In 1764, Scottish engineer **James Watt** improved the  
steam engine. Watt’s engine became a key power source. Coal  
was also used to produce iron. Iron was needed to make  
machines and steam engines. In 1709, Adam Darby used coal to  
**smelt** iron, or separate iron from its ore. Darby’s experiments  
led to the production of less expensive and better-quality iron.

**Review Questions**

**1.** How did the Industrial Revolution change rural life in  
Britain?

**2.** What other revolution contributed to the start of the  
Industrial Revolution?



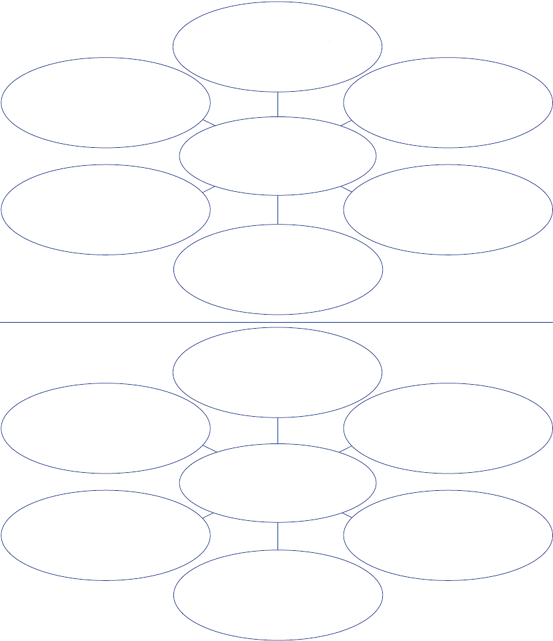
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**Focus Question:** What key factors allowed Britain to lead the way in the  
Industrial Revolution?

*As you read this section in your textbook, complete the following concept webs to  
identify causes and effects of Britain’s early lead in industrialization. Fill in the first  
concept web with causes. Fill in the second concept web with effects. Some items have  
been completed for you.*



**Causes**

Population growth

Resources

**Britain Takes  
the Lead**

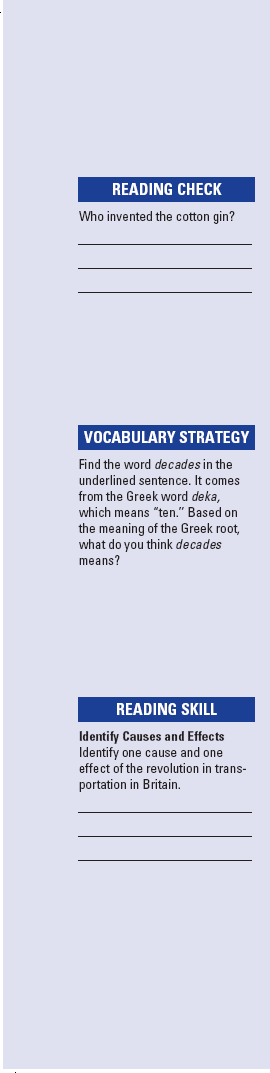
**Effects**

Lower prices

Increased supply  
of goods

**Britain Takes  
the Lead**

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The Industrial Revolution began in Britain for several reasons.  
Population growth was one. Another was Britain’s plentiful nat-  
ural resources, such as rivers, coal, and iron. Also, the growing  
population and ready workforce increased the demand for  
goods. To increase production of goods, however, another key  
ingredient was needed—money. Money was necessary to start  
businesses. People accumulated **capital,** or money, to invest in  
an **enterprise,** or business. **Entrepreneurs** managed and  
assumed the financial risks of starting these new businesses.

The Industrial Revolution developed in Britain’s textile  
industry. British merchants created the **putting-out system.** In  
this system, raw cotton was given to peasant families. They  
made it into cloth, in their homes. Production was slow, how-  
ever. As the demand for cloth grew, inventors came up with  
new machines, such as the flying shuttle and the spinning  
jenny. These increased production and revolutionized the  
British textile industry. Meanwhile, in the United States, peo-  
ple had to figure out how to produce enough cotton to keep up  
with these faster spinning and weaving machines. The cotton  
gin, invented by **Eli Whitney,** greatly increased the production  
of cotton. To house these new machines, manufacturers built  
the first factories. There, spinners and weavers came each day  
to work, instead of staying at home.

As production increased, people needed faster and cheaper  
ways of moving goods, too. Some capitalists invested in  
**turnpikes.** These toll roads soon linked every part of Britain.

The invention of the steam locomotive spurred the great rev-  
olution in transportation. It made the growth of railroads possi-  
ble. The world’s first major rail line ran between the British  
industrial cities of **Liverpool** and **Manchester.** It started running  
in 1830. In the following decades, railroad travel became faster  
and railroad building boomed. As you can see, each change led  
to another, rapidly affecting the way people lived.

**Review Questions**

**1.** How did population growth lead to the Industrial  
Revolution?

**2.** How did machines change the textile industry?



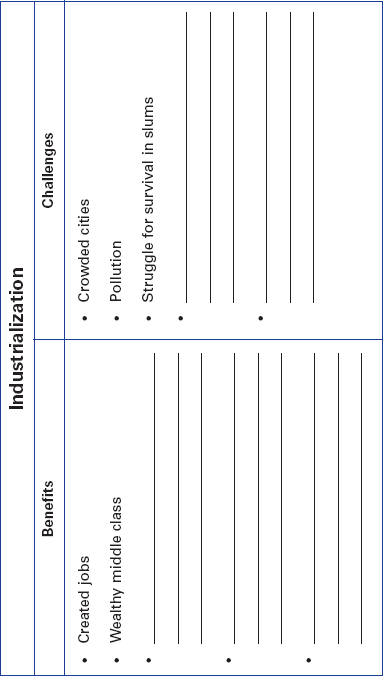
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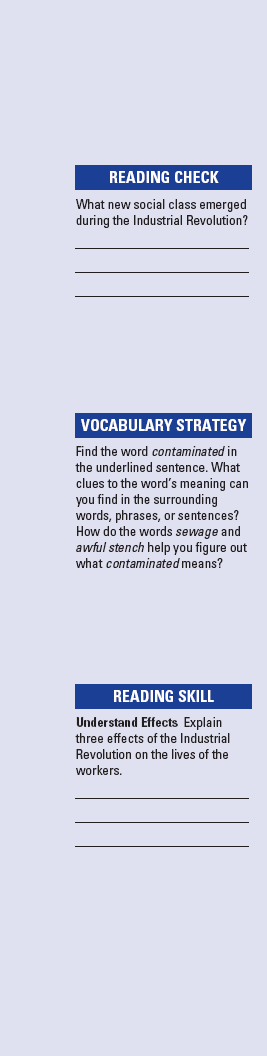


**Focus Question:** What were the social effects of the Industrial  
Revolution?

*As you read this section in your textbook, complete the following table to understand  
the effects of industrialization. Some items have been filled in for you.*





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The Industrial Revolution brought **urbanization,** or the move-  
ment of people to cities. Masses of people moved from farms to  
cities because of changes in farming, soaring population  
growth, and demand for workers. Almost overnight, small vil-  
lages around mines grew into cities. Other cities grew up  
around the factories that were built in once-quiet market towns.

Those who benefited most from the Industrial Revolution  
were entrepreneurs. They made up a new middle class created  
by the Industrial Revolution. The wealthy and the middle class  
lived in nice neighborhoods. The poor lived in crowded tiny  
rooms in **tenements,** multistory buildings divided into apart-  
ments. These tenements had no running water and no sewage  
or sanitation system. Sewage rotted in the streets or was  
dumped into rivers, which contaminated drinking water and  
created an awful stench. This led to the spread of diseases.

Working in a factory system was very different from work-

ing on a farm. In rural villages, people worked hard, but the  
amount of work varied with each season. The factory system  
was a harsh new way of life. Working hours were long. Shifts  
lasted from twelve to sixteen hours, six or seven days a week.  
Tired workers were injured by machines that had no safety  
devices. Working conditions in mines were even worse than in  
the factories. Factories and mines also hired many boys and  
girls. These children often started working at age seven or  
eight, a few as young as five.

The early industrial age brought terrible hardships. In time,  
however, reformers pressed for laws to improve working con-  
ditions. **Labor unions,** or workers’ organizations, won the  
right to ask for better wages, hours, and working conditions.

Despite the social problems created by the Industrial  
Revolution, it did have some positive effects. More jobs were  
created and wages rose. As the cost of railroad travel fell,  
people could travel farther for less money than ever before.

**Review Questions**

**1.** Why did people migrate from farms to cities during the  
Industrial Revolution?

**2.** What were working conditions like in factories?



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**Focus Question:** What new ideas about economics and society were  
fostered as a result of the Industrial Revolution?

*As you read this section in your textbook, complete the following outline to identify  
main ideas about the new economic and social theories. Some items have been  
completed for you.*

**I. Laissez-faire economics**

**A.** Adam Smith and free enterprise

**1.**

**2.**

**II. Malthus on population**

**A.** Malthus holds bleak view.

**1.** Population will outpace food supply.

**2.**

**3.**

**B.** Ricardo shares view.

**1.**

**2.**

**III. Utilitarians for limited government**

**A.** Goal of society should be “the greatest happiness for the greatest  
number.”

**1.**

**2.**

**IV. Socialist thought emerges**

**A.** Focus should be on the good of society in general, not on  
individual rights.

**1.**

**2.**

**B.** Socialists establish utopian communities.

**1.** Hoped that equality among people would end conflict

**2.** Utopian industrialist Robert Owen sets up a model community  
in Scotland.

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*(Continued from page 95)*

**V.** **Karl Marx explains class struggle**

**A.**

**1.**

**2.**

**VI.**

**A.**

**1.**

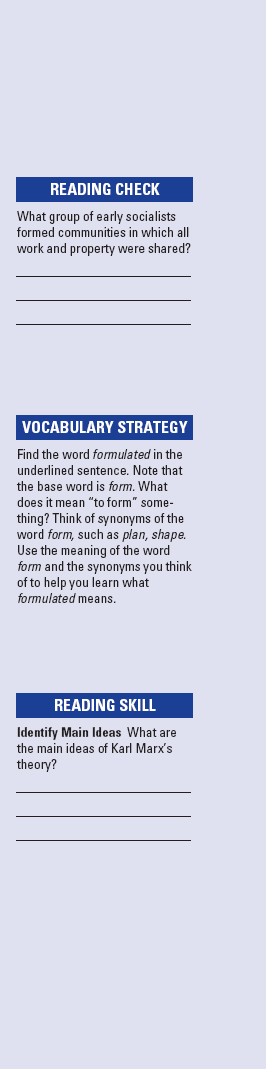
**2.**

**3.**

**B.** Marxism loses appeal.

**1.**

**2.**

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Many thinkers tried to understand the great changes taking  
place in the early Industrial Age. Middle-class business leaders  
supported the laissez-faire, or “hands-off” approach. They  
believed that a free market would help everyone, not just the  
rich. However, one British laissez-faire economist, **Thomas  
Malthus,** thought the poor would always suffer. He believed  
population would grow faster than the food supply. He did  
not think the government should help the poor. He believed  
people should improve their own lives through hard work and  
have fewer children.

Other thinkers sought to soften laissez-faire doctrines. They  
felt some government help was needed. The British philosopher  
and economist **Jeremy Bentham** supported **utilitarianism.** He  
believed that the goal of society should be the “greatest happiness  
for the greatest number” of citizens. Other thinkers, such as  
John Stuart Mill, strongly believed in individual freedom, but  
wanted the government to step in to prevent harm to workers.

To end poverty and injustice, some offered a radical solu-  
tion— **socialism.** Under socialism, the **means of production**—  
the farms, factories, railways, and other businesses—would be  
owned by the people as a whole, not by individuals. Some early  
socialists, such as **Robert Owen,** set up communities in which  
all work and property were shared. They were called Utopians.

The German philosopher **Karl Marx** formulated a new theory.  
His theory predicted a struggle between social classes that would  
end in a classless society that he called communist. Marx wrote  
that the struggles of the **proletariat,** or working class, would end  
because wealth and power would be equally shared. In practice,  
**communism** later referred to a system in which a small elite  
controlled the economy and politics. In the 1860s, German  
socialists adapted Marx’s beliefs to form **social democracy,** which  
called for a slow transition from capitalism to socialism.

**Review Questions**

**1.** Why did middle-class leaders support laissez-faire  
economics?

**2.** What did Jeremy Bentham believe the goal of society  
should be?

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