A New Kind of Revolution

Before You Read

Main Idea
In the 1700s, conditions in Great Britain led to the rapid growth of the textile industry, which in turn led to huge changes in many other industries.

Reading Focus
1. Why did the Industrial Revolution begin in Great Britain?
2. How did industrialization cause a revolution in the production of textiles?
3. How did steam power the Industrial Revolution?
4. Where did industrialization spread beyond Great Britain?

Key Terms and People
Industrial Revolution
enclosure movement
factors of production
factory
industrialization
Jethro Tull
Richard Arkwright
James Watt
Robert Fulton

How did one farmer’s frustration help start a revolution? Jethro Tull had never planned to be a farmer. He had trained to be a lawyer but inherited the family farm. While running the farm, Tull was often annoyed by the workers’ sloppy habits. For example, when planting, they wasted seeds by throwing big handfuls onto the ground. Sure that the job could be done more efficiently, Tull invented a horse-drawn machine that planted seeds one by one. He called it a seed drill. Without knowing it, Tull was helping to start a revolution—an agricultural revolution that would bring changes to nearly all aspects of life.

A Revolution in Great Britain

During the 1700s changes in technology began that would transform the world. These changes were based on a shift in how people worked. For centuries people had used human and animal power as their main energy sources. Then they began to develop water and steam power to drive new machines and perform countless tasks. This era, when the use of power-driven machinery was developed, is called the Industrial Revolution. For several reasons, it started in Great Britain.

Factors for Success
By the 1700s several factors had come together to set the scene for the development of industry in Great Britain. Those factors included a range of political and economic events.

From Muscle to Machines

For centuries, workers had used muscle power to farm the land.

Taking Notes
As you read, take notes on the early years of the Industrial Revolution.

A. In Britain
B. In Textiles
C. Steam Power
D. Spread

Teach the Main Idea

A New Kind of Revolution

1. Teach
Ask students the Reading Focus questions to teach this section.

2. Apply
Draw four circles for students to see. Label them with the main topics in this section: A Revolution in Great Britain, A Revolution in Textiles, Steam Powers the Revolution, and Industrialization Spreads. Have students copy the circles onto their papers and fill them in with the main ideas of each topic.

3. Review
As you review the section, have students describe the conditions that led to the Industrial Revolution in Britain.

4. Practice/Homework
Have students write an 18th century magazine article in which they explain specifically how new devices will change the textile industry.

Teach the Main Idea

Teaching Strategies

Guiding students to identify the reasons for the Industrial Revolution

Academic Vocabulary

Review with students the high-use academic term in this section.

Labor work, or people who do the work (p. 237)

Taking Notes

Beginnings—expansion of colonialism, political stability, government support of business, growth of private investment led to industrialism, factors of production; Textiles—invention of cotton gin, spinning jenny, and water frame revolutionized textile industry; Steam—development of steam engine made several industries more efficient; Spread—industrialization spread quickly to societies with a degree of individual freedom and economic stability, spread to other countries as well.

Interactive Reader and Study Guide

Full Survey Chapter 21

Section 1

CRF: Vocabulary Builder: Section 1

Getting Started
Use the Interactive Reader and Study Guide to familiarize students with the section content.

Getting Started

Section 1

CRF: Vocabulary Builder: Section 1

Key Terms and People

enclosure movement

Taking Notes

B. In Textiles

C. Steam Power

D. Spread

Teaching Strategies

Rubric 19:

Getting Started

Use the Interactive Reader and Study Guide to familiarize students with the section content.

Getting Started

Section 1

CRF: Vocabulary Builder: Section 1

Key Terms and People

enclosure movement

Taking Notes

B. In Textiles

C. Steam Power

D. Spread

Teaching Strategies

Rubric 19:
Why did the Industrial Revolution begin in Great Britain? colonies provided raw materials, political stability encouraged commerce, powerful navy defended shipping, government supported business, agricultural factors, factors of production

A Revolution in Great Britain

Recall Where did many of Britain’s raw materials come from? colonies held by Britain

Make Inferences Why do you think rich farmers experimented with agricultural methods? possible answers—to farm more efficiently, to find ways to increase crop yields

Summarize Why was water initially more important to Britain’s growing industry than coal or iron? Water was readily available; it did not have to be mined or transported; waterways provided transportation among mines, factories, and markets.

Info to Know

Enclosure Movement The enclosure movement greatly changed rural England as communal use and care of the land changed to private ownership. As individual landowners and tenants took control of defined areas of land, communities lost their land use rights. Open, unfenced fields and meadows were turned into privately owned hedged, fenced, or walled fields. Acts of Parliament, as well as private agreements between lords and their tenants, helped speed the change.

Agricultural Factors Much of the research and development took place on farms as some of Britain’s so-called gentlemen farmers began to experiment with agricultural methods. Jethro Tull was among these wealthier farmers. In about 1701 Tull invented the seed drill, a machine that made planting grain much more efficient. Farmers experimented with other aspects of agriculture also. For example, they improved livestock breeding methods to raise healthier animals. Better varieties of food crops, such as potatoes, were developed. These improvements increased Britain’s food supply. Since more food can support more people, Britain’s population grew rapidly. Another agricultural development had mixed results. Wealthy landowners could buy up fields that had previously been shared by rich and poor farmers alike. The new landowners combined the small fields to create large farms and fenced them, a transformation.

Factors of Production

The basic factors of production are the essential elements that a nation needs to achieve economic success. They are land (natural resources), labor, and capital. The places where these factors can be found change over time.

Factors of Production in History In the 1700s the factors of production that sparked the Industrial Revolution were all in place in Great Britain. From these factors—coal, iron ore, waterways, unemployment, farmers, cash, and human talent—the British built an industrial empire. Factors of Production Today Much has changed since the 1700s. The land, labor, and capital that made Great Britain an industrial leader no longer have the same value. For example, running water is not as important a power source as it once was. Today, the industrial world depends more on fossil fuels, especially oil. Countries other than Great Britain provide most of the world’s supply of the precious fuel. Labor resources can also be found elsewhere. Today, China and India have huge numbers of skilled workers. Capital resources have shifted, too. Investors from Asia and the Middle East now fund many factories in Western countries. All these shifts in where the factors of production are located affect wealth and, therefore, political power. As you study different countries, keep track of how the factors of production have affected their economies—and their histories.

1. Summarize How has the location of the factors of production changed in current times?
2. Predict How might the factors of production continue to change?

Differentiating Instruction

Special Education Students; Learners Having Difficulty

Materials: construction paper, markers

1. Review what the term industrialization means and then guide students in a discussion of Britain’s factors for success in industrialization. Make a list of Britain’s five factors for industrial success for students to see.
2. Organize students into mixed-ability pairs.
3. Have each pair design a series of Web pages that explain the five factors of Britain’s industrial success. There should be a home page and a separate page for each factor. Pages should include text and a picture or icon that illustrates the factor.
4. Have volunteers share their pages with the class. 

Visual-Spatial

Alternative Assessment Handbook, Rubric 3: Artwork
called the enclosure movement. The movement allowed for more efficient farming methods and, therefore, further increased the food supply. However, enclosure also threw countless farmers off the land. Unable to make a living in the countryside, these poor farmers went to the cities for jobs. There they would form the workforce for growing industries.

**Britain’s Big Advantage** These conditions all point to the basic reason why the Industrial Revolution began in Great Britain. The country had the essential elements that a nation needs to achieve economic success—what economists call the factors of production. There are three factors: land, labor, and capital.

Land, in this context, means all of a place’s natural resources. Great Britain had all the resources it needed for industry. It had coal to burn as fuel and iron to make into steel and machinery. But to get industry started, no resource was more important than water. People used Britain’s streams and rivers to turn waterwheels and generate power, and many of those same waterways provided transportation between mines, factories, and markets. A network of canals connected major rivers. In the mid-1700s England already had about 1,000 miles of canals, which grew to about 4,000 miles by 1800. Also, for long-distance shipping, Great Britain had good deepwater harbors.

For labor, Britain had the growing population made possible by a greater food supply. Within this growing population were the thousands of people who had lost their farmland because of the enclosure movement. These were often entire families, and entire families would go to work in industry.

Britain’s last factor of production was capital, which refers to funds for investment in business. The country was generally prosperous, and people had money to spend. Britain also had “human capital”—people with abilities and skills that are needed in industry. For example, Jethro Tull and later inventors were among this group of capable people. With all these factors of production in place, Great Britain was ready for a boom in business.

**Find the Main Idea** Why was Great Britain in the 1700s ideally suited to be the birthplace of the Industrial Revolution?

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**A Revolution in Textiles**

The Industrial Revolution began with the British cloth-making, or textile, industry. British workers had been handweaving woolen cloth for centuries. Weaving was a cottage industry—a craft occupation performed in the home. But the old ways of making cloth were completely transformed by industrialization, or the process of changing to power-driven machinery.

**A New Way of Making Cloth** In Great Britain most fabric was made of wool or cotton. During the 1700s the supply of both fibers increased. The wool supply increased because the enclosure movement converted so many farms to pastures for raising more sheep. Shipments of cotton fiber came from the British colonies, particularly in India and North America. In the southern American colonies the trade in cotton had a tragic result. Slave labor helped make cotton farming more profitable. Therefore, as Great Britain bought more and more American cotton, slavery became more entrenched throughout the South. A new invention also helped keep the American cotton industry—and slavery—profitable.

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**Skills Focus: Identifying Main Idea and Details**

**Reading Skill** Land, Labor, Capital

1. Draw the chart below for students to see. Omit the italicized answers.

2. Have students copy and complete the chart. 

**Alternative Assessment Handbook, Rubric 7: Charts**

<table>
<thead>
<tr>
<th>Factors of Production</th>
<th>Land</th>
<th>Labor</th>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>what it means</strong></td>
<td>all natural resources</td>
<td>people available to work</td>
<td>funds for investment</td>
</tr>
<tr>
<td><strong>how it was an advantage</strong></td>
<td>had coal for fuel, iron for steel</td>
<td>growing population, people who had lost farmland</td>
<td>country prosperous, money to spend, people with abilities</td>
</tr>
</tbody>
</table>
A Revolution in Textiles

Recall  What problem did Eli Whitney solve? the slow, tedious process of pulling seeds from raw cotton; invented the cotton gin

Identify  What machines were developed to spin fiber into thread or yarn? spinning jenny, spinning frame

Evaluate  Did inventors like Kay and Arkwright deserve to be honored or scorned? possible answers—honored: their inventions changed the world; scorned: many people lost their jobs

Activity  Weavers Wanted Have students design a “Jobs Wanted” flyer inviting workers to leave their farms and come to work at a weaving factory. Remind students that many farm workers might not have been able to read or write at this time in history.

Visual-Spatial

CRF: Biography: Nobert Rillieux

Visual-Spatial

CRF: Biography: Nobert Rillieux

Reading Like a Historian

An Early Historian on the Textile Industry

Analyzing Secondary Sources  Historians often read what other historians before them had to say. Using older sources, modern historians can learn how events were viewed in the past. However, historians who wrote about events soon after they happened usually had a different perspective than historians who wrote many years after the event.

The quotation here is from a British historian. When he was writing, the textile industry had already been thoroughly mechanized.

Pulling seeds from raw cotton blossoms was time-consuming when done by hand. An American named Eli Whitney solved the problem. He built a machine, called the cotton gin, that removed the seeds efficiently.

The fiber was then spun into thread or yarn. James Hargreaves, a weaver, revolutionized the spinning process with a machine he called the spinning jenny, which spun several threads at once. Hargreaves’ machine was not perfect. The thread it produced was still thick and prone to break when woven into cloth.

Richard Arkwright, another inventor, solved this problem with the spinning frame, which spun stronger, thinner thread.

Finally, the thread was woven into fabric.

The traditional in-home weaving loom was about six feet wide—the width a man could reach from side to side to push the thread back and forth on a shuttle. The “flying shuttle,” patented by John Kay, doubled the speed at which a weaver could do the job. Because many weavers lost their jobs as a result, Kay was attacked and fled to France. He died in poverty.

Nevertheless, the ever-faster spinning machines soon created a demand for better weaving machines. To meet that demand, in 1785 Edmund Cartwright patented the power loom, a larger, faster weaving system.

Cloth-Making in Factories

The new machines were too big for the weaver’s cottage. They had to be housed in large buildings constructed specially for that purpose. A building that housed industrial machines became known as a factory, from the old word manufactory. Factories needed ready supplies of power. Arkwright built early factories to house a spinning system driven by water power. His system was known as the water frame.

From this flurry of invention and innovation, an industry was born. In 1770 England produced about 50,000 bolts of cloth. By 1800 the textile output had increased to 400,000 bolts.

Reading Focus

Reading Like a Historian Skill

Inventors Showcase

1. Assign each student the role of an inventor mentioned in the section, such as Jethro Tull, James Hargreaves, or Robert Fulton.
2. Have each student conduct outside research on the assigned person and his most famous invention.
3. Have students prepare and present short, first-person accounts of their assigned inventor’s most famous invention. Students should give some background on why they created the device and demonstrate how it works with drawings or models.
4. Hold an Inventors Showcase in which students present their inventions.

Teaching Tip

If students have trouble grasping the changes brought by the Industrial Revolution, ask them to name products that have revolutionized their lives, such as cell phones and other technological devices that they consider necessities.

Answers

Reading Like a Historian 1. possible answer—No, Baines could not have understood the long-term effects during his own lifetime. 2. positive adjectives, general tone

Reading Check  spinning jenny and spinning frame spun thread into yarn, “flying shuttle” and power loom made weaving faster
Steam Powers the Revolution

A simple fact of physics powered the Industrial Revolution: when water is heated and changes into steam, it expands. British inventors learned how to harness the force of steam to drive machines that transformed the world.

Development of the Steam Engine

The first commercially successful steam engine was built in England in 1712, but it was very slow. Then an inventor named James Watt came up with crucial innovations. His engine was faster and more efficient at driving machinery. By 1800 about 500 of Watt’s steam engines were chugging and hissing in mines and factories throughout Britain.

The widespread use of steam engines began when inventors put them to use in the textile mills. Using steam power instead of water power meant that factories no longer had to be built near ready supplies of water. Instead, they could be located where fuel was readily available and where workers already lived. Also, factories could be built closer to roads and ports from which raw materials and finished products could be shipped.

Steam was soon applied to other uses, eventually producing a revolution in transportation. In about 1802 Richard Trevithick used a steam engine to power the first locomotive. Steam-powered trains soon became essential to the Industrial Revolution. They made possible the fast shipment of finished goods even to faraway markets.

Steam also provided a power source for ships. An Irish-born American, Robert Fulton, became famous for developing a steamship called the Clermont. In 1807 the Clermont began operating on the Hudson River between New York City and Albany. Fulton’s business was the first profitable use of steam navigation. Steamships would replace sailing ships on the open sea and the horse-drawn barges that hauled goods along canals.

Coal for British Steam Engines

Steam engines required immense amounts of fuel to heat water. Wood was scarce, though, because most of England’s forests had been cut down for farming. But the country had a big supply of another valuable fuel—coal. Consequently, as more factories were built to run on steam, the coal mining industry in northern and western England grew. By 1800, Great Britain produced 80 percent of Europe’s coal.

Naturally, many factories were built near Britain’s northern coal mines. Quiet agricultural landscapes changed into busy, noisy boom towns dotted with factories and surrounded by endless rows of workers’ and miners’ homes.

The miners’ families often experienced tragedy. Working in the mines was a dangerous job. Mine explosions, coal dust, collapsing shafts, and the sheer hard labor took a heavy toll. Children were often hired to slip down the narrow shafts and pick and haul coal. Their lives were hard, as one account describes:

**HISTORY’S VOICES**

> The children, boys and girls, earned their wages by drawing the coals in tubs along the galleries by means of a belt and chain, which passed around their waists. Many girls were thus employed, and after a time became crooked and deformed.

—Caretton Smith, visitor to the Lancashire mines, 1833

Such reports caught the public’s attention. Industrialization continued for some time, though, before the situation changed.

**Reading Check**

Make Generalizations What impact did the steam engine have on the growth of British industry?

**Reading Focus**

**Watt’s Designs** James Watt’s improved steam engine relied on a condensing chamber that would prevent the loss of steam from the system. It was typically used to work pumps. In 1781 he invented the rotary engine, which drove machinery by turning a shaft in the machine. While these designs were under patent, the firm of Boulton and Watt built about 200 steam pumps and over 300 rotary engines. During his career, Watt also invented the double-acting engine and a pressure gauge.

**Info to Know**

**Watt’s Designs** James Watt’s improved steam engine relied on a condensing chamber that would prevent the loss of steam from the system. It was typically used to work pumps. In 1781 he invented the rotary engine, which drove machinery by turning a shaft in the machine. While these designs were under patent, the firm of Boulton and Watt built about 200 steam pumps and over 300 rotary engines. During his career, Watt also invented the double-acting engine and a pressure gauge.

**Reading Check** major impact; used in textile mills, factories could be located away from rivers, powered locomotives and ships, led to development of coal as a resource, more factories built near northern coal mines
Industrialization Spreads

Explain How did Britain try to keep its discoveries secret? outlawed export of certain machines, forbade skilled craftsmen from leaving the country

Make Inferences What do Samuel Slater’s accomplishments reveal about him? possible answer—that he was technically skilled, highly motivated, and had a good memory

Industrialization Spreads

With steam driving British factories, industrialization increased rapidly and soon spread to western Europe and the United States. Other regions, including Asia and Africa, did not industrialize in the 1800s. Why did industry not take hold in some areas? What was it about Western countries that encouraged them to embrace industry?

Industry and the West Today’s scholars have many ideas about why industrialization did not spread quickly to all parts of the world. Among those ideas is the impact of individual freedom on economic activity.

In Western countries, individual freedom was becoming a significant force in society. Although during the 1800s even Western countries were not truly democratic, the individual citizens enjoyed more political liberty than people elsewhere. People with a degree of freedom can compete against each other. Western societies saw competition as good. Wealth and fame rewarded those who competed well.

For example, explorers raced to find new lands where merchants could do business. Fierce competition even led some Westerners to exploit other countries in their search for raw materials and markets. Then, during the Industrial Revolution, Western industrialists competed to improve on inventions and processes.

Industry Comes to America Although industrialization spread far beyond Great Britain, it was not because the British wanted to share the wealth. In fact, Britain outlawed the export of certain machines and even forbade some skilled craftsmen from leaving the country.

As a result of these restrictions, from about 1760 to 1830, the Industrial Revolution took place mainly in Great Britain, giving the country a head start in economic development. But it was just a matter of time before knowledge of the machines and how to run them leaked out. The United States was one of the first places to benefit from that knowledge.

In his 1791 Report on Manufactures, U.S. Treasury Secretary Alexander Hamilton argued that industrialization would help the young United States gain economic independence from Great Britain. He even wanted the U.S. government to bribe British citizens into bringing their knowledge to this country.

Fortunately for the United States, Samuel Slater, a highly skilled young millworker, had already arrived from Britain. To avoid arrest, Slater had disguised himself as a farmworker and boarded a ship to America in 1789.

Slater had a dream—of making a fortune in America. He had detailed knowledge of the

Steamships and the Spread of Industrialization

Steamships helped spread industrialization. They carried raw materials to industrialized countries, finished products to markets, and immigrants to countries where they could get factory jobs.

The ship in this print is the Great Eastern under construction in the 1850s. It was built to carry passengers and cargo from Europe to Australia.

240 CHAPTER 7

Collaborative Learning

Interviewing Slater and Lowell

1. Find and provide students with supplementary information on Samuel Slater and Francis Cabot Lowell.

2. Organize students into small groups. Provide each group with the information about Slater and Lowell.

3. Have groups brainstorm interview questions that could be asked of Slater and Lowell. Questions should focus on the most important details of their lives.

4. Have groups develop their questions into a script for a radio round-table interview featuring Slater and Lowell and two interviewers. Encourage students to include dialogue and discussion between Slater and Lowell. Have groups rehearse and then present the interviews to the class.

Alternative Assessment Handbook, Rubric 33: Skits and Reader’s Theater

Rubric 33: Auditory-Musical, Kinesthetic
machinery created by water frame inventor Richard Arkwright for combing and spinning cotton in a single, efficient process. But Slater did not have a copy of the English machines to use as a model. In a remarkable feat of memory, Slater built the complex Arkwright machinery from scratch at a Rhode Island mill.

Slater’s bold move resulted in a big success. In 1793 he built what is known today as Slater’s Mill in Pawtucket, Rhode Island. For his contribution, Slater became known as the Father of American Industry.

Textile mill technology spread rapidly throughout the northeastern United States. The mill city of Lowell, Massachusetts, became the jewel of American industry. The mill’s principle founder, Francis Cabot Lowell, used the power of a nearby waterfall to run his machinery. Lowell’s mills, situated in 40 multi-story brick buildings on a network of six miles of canals, were models for modern industry.

Lowell had the world’s first all-in-one mill that took raw cotton through the various processes from fiber to finished cloth. He hired young, single girls from nearby farms to work in the mills, providing good wages and clean, safe housing for them. Some 10,000 workers were employed there by 1850.

Industry Spreads to Europe A British engineer named William Cockerill brought industry to continental Europe. In 1807 he founded a textile factory in Belgium, which became the second industrialized European country after Great Britain.

Political unrest delayed the industrialization of France. In 1789 revolution erupted in France. The Napoleonic Wars further delayed the process. After Napoleon was defeated in 1815 the French government gave financial support for building industry. By 1848 France had become an industrial power.

In Germany, there was no central government to support industry. Railroads were being built, however, among the many small German states. The railroads paved the way for industrialization after about 1850. Treaties that dropped trade barriers among the states also helped industry grow.

Industry in Asia Eventually, industry spread to Asia. Although today Japan is one of the world’s industrial leaders, the Industrial Revolution spread to Japan fairly late. Industrialization took hold there after 1868, when the Meiji government came to power and modernized Japan’s economy. Within just a few decades, Japan had thriving industries. Japan was far ahead of its Asian neighbors. The industrialization of other major world powers—including China, India, and Russia—would not occur until the 1900s.

Reading Skills

Drawing Conclusions

If you know the Meiji modernized Japan’s economy, what can you conclude about the previous government’s role in the country’s economy?

Review

1. a. Describe What were the factors of production that helped produce an Industrial Revolution in Great Britain?
  b. Identify Cause and Effect What effect did changes in agriculture have on the Industrial Revolution?
  c. Rate Which condition in mid-1700s England do you think was most crucial to the birth of the Industrial Revolution? Explain your answer.

2. a. Identify What did Richard Arkwright invent?
  b. Infer Why did some people not like the arrival of machines?
  c. Predict What effect might the shift from cottages to factories have on the lives of textile workers and on towns and cities?

3. a. Recall What industry stimulated the widespread use of steam engines?
  b. Evaluate How do you think people justified the use of children doing hard labor in coal mines?

4. a. Identify Why is Samuel Slater known as the Father of American Industry?
  b. Draw Conclusions How do you think visitors reacted when they saw the Lowell mills?

Critical Thinking

5. Categorize Use your notes and a graphic organizer like the one below to show how various factors helped start the Industrial Revolution.

Factors in the Start of the Industrial Revolution

<table>
<thead>
<tr>
<th>Factors</th>
<th>Agriculture</th>
<th>Land</th>
<th>Labor</th>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>Agriculure</td>
<td>Land</td>
<td>Labor</td>
<td>Capital</td>
</tr>
<tr>
<td>Industry</td>
<td>Agriculure</td>
<td>Land</td>
<td>Labor</td>
<td>Capital</td>
</tr>
<tr>
<td>Revolutions</td>
<td>Agriculure</td>
<td>Land</td>
<td>Labor</td>
<td>Capital</td>
</tr>
</tbody>
</table>

6. Persuasion Imagine that you are a highly skilled millworker living in Great Britain in about 1800. Write an outline for the main points you would make to government officials to persuade them that you should be allowed to go to the United States to start a textile business.
Factories and Workers

Main Idea
The transition from cottage industries to factories changed the way people worked. What was life like in factory towns, labor conditions, and eventually, processes within factories.

Reading Focus
1. How was production organized before factories? 2. What were factories and factory towns like? 3. How did the factory system affect workers? 4. What was mass production, and what were its effects?

Key Terms
labor union
strike
mass production
interchangeable parts
assembly line

How did the early Industrial Revolution affect families? In 1795 writer Hannah More told a story about a large family in Lancashire, in northern England. The father worked in the coal mine, and the wife and children worked at home spinning fiber into thread and running a small dairy farm. There was not enough work at home to keep all the children busy, though, so three of them, including nine-year-old Mary, went to work with their father in the coal mine. Gradually the family's income increased, thanks to the children's hard work. But tragedy soon struck. The father died in a mine accident, the mother lost her mind from so much grief, and Mary struggled to keep her sisters and brothers fed. Although we do not know if this story of Mary's family was true, the problems it describes were true for many real families. The early years of the Industrial Revolution brought hardships to many British families, whether they worked in the mines or the factories.

Teach the Main Idea

1. Teach Ask students the Reading Focus questions to teach this section.
2. Apply Organize students into pairs. Have each pair create a two-column chart and write short descriptions of production, labor, and family life before and after industrialization.
3. Review As you review the section, have students describe the changes that industrialization brought to individuals, families, workplaces, and towns.
4. Practice/Homework Have students write a series of journal entries from the point of view of a worker who has been forced to switch from a cottage industry to factory work.

Academic Vocabulary
Review with students the high-use academic term in this section.

invest to commit money in order to make a financial return (p. 245)

Online Resources
KEYWORD: SHL IND
ACTIVITY: Labor Unions

From Home to Work

CHAPTER 7

242
Production before Factories

Production of goods for others did not begin with the Industrial Revolution. Instead, it began many years earlier with cottage industries, when workers produced goods at home.

Work in the Home

In cottage industries, workers who produced finished goods dealt directly with merchants. Like other such industries, the manufacturing of textiles followed several steps.

In the first step, a merchant delivered raw materials to the weaver's cottage. In the early textile industry, the raw material was usually wool. Next, the weavers and their families processed the wool in several stages, from raw material to finished product. They hand-spun the fiber into thread and wove the thread into cloth. When the cloth was finished, the merchant picked it up and took it to market.

Work at home had some clear benefits. The weavers controlled their work schedules and product quality. They could work faster when they needed to earn more money. Or, they could work more slowly to make cloth of the highest quality. Also, family life revolved around the business. Weavers made their own decisions on when to work and rest, depending on the family's needs. They could make adjustments for illness, holidays, and the seasons.

Problems for Cottage Industries

Even though working in the home had benefits for workers such as weavers, it also had disadvantages. A fire or flood that destroyed the home's equipment could ruin a family in an instant. Also, cloth-making demanded a range of technical skills for the various steps—skills that took a long time to learn. Moreover, only adults had the physical strength that some jobs, such as weaving on a loom, required. The typical home loom was at least six feet tall—to work in the factories. In fact, some factory owners preferred hiring children because they could pay them lower wages. Still, the majority of factory workers were adult men.

Factory work was dangerous for all workers, but children faced special hazards. Factory owners preferred hiring children because they could pay them lower wages. Children, with their small hands, could reach into the still-running machines to retrieve the broken threads more easily than adults. Some children lost fingers in the process. Because there was no safety protection from the massive machines, severe injuries were common.

The workday was long—more than twelve hours for even very young children. Noise, lack of ventilation, poor sanitation, and inadequate food added to the hardship.

Poor factory conditions were common throughout the 1700s and into the 1800s. In the 1830s, however, the public began to take notice and ask for improvements. Some of the requests came from the child workers:

"We respect our masters, and are willing to work for our support, and that of our parents, but we want time for more rest, a little play, and to learn to read and write. We do not think it right that we should know nothing but work and suffering, from Monday morning to Saturday night, to make others rich. Do, good gentlemen, inquire carefully into our concern." —Submission from the Manchester's Factory Children Committee to the House of Commons, 1836

Factories and Factory Towns

A major change from the cottage industry system to the factory system was where employees worked. A factory laborer had to leave his or her home and work in a place built especially for industry. For some workers, a job in a factory was a welcome way to support the family. For many workers, however, the factory system caused real hardship.

Working in a Factory

Factory work was divided into several separate, easily learned tasks, and each worker was assigned to one task. As a result, children could learn jobs as well as adults could. Many families fleeing poverty in the countryside would send their boys and girls—some as young as six years old—to work in the factories. In fact, some factory owners preferred hiring children because they could pay them lower wages. Still, the majority of factory workers were adult men.

Factory work was dangerous for all workers, but children faced special hazards. For example, one problem with early weaving looms was that the threads often snapped. Children, with their small hands, could reach into the still-running machines to retrieve the broken threads more easily than adults. Some children lost fingers in the process. Because there was no safety protection from the massive machines, severe injuries were common.

The workday was long—more than twelve hours for even very young children. Noise, lack of ventilation, poor sanitation, and inadequate food added to the hardship.

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**Differentiating Instruction**

**Advanced Learners/Gifted and Talented**

**Materials:** butcher paper, art supplies

1. Review the effects that industrialization had on towns such as Manchester.
2. Organize students into small groups. Have each group write an official petition to city officials in Manchester and a petition to Parliament asking for improved conditions within the city. Student petitions should focus on the need for improved sanitation, working conditions, child labor laws, and environmental conditions.

3. Have students share their petitions with the class.
4. Guide students in a discussion of the petitions. Did the petitions address all the needs of Manchester residents and workers?

**Alternative Assessment Handbook, Rubric 43: Writing to Persuade**

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**Answers**

**Reading Check** injuries, long workdays, noise, lack of ventilation, poor sanitation, inadequate food

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**Direct Teach**

**Life in Factory Towns**

Factories changed not just the lives of their workers, but also the towns where the factories were located. Along rivers, large mill operations sprang up quickly. Whole towns grew up around the factories. Some companies provided housing to their employees, many of whom arrived from the countryside with few belongings and nowhere to stay. Families crowded into shoddy, close-packed company dwellings.

When water power changed to steam power, manufacturing towns rose near the coal mines also. The hazards of burning coal for producing steam quickly became apparent. Thick soot from the burning coal blanketed towns, turning day into night. The smoke sent sulfur and other poisonous chemicals into the air.

Factories for smelting, or refining, iron were often built near coal mines. They sent more dark, smoky pollution into the air. The iron smelting factories in one region of northwestern England emitted so much pollution that the region was nicknamed “black country.” Because the iron-smelting required fires, one American visitor to the region called it “black by day and red by night.”

North of this region lay the textile city of Manchester—the British city that came to symbolize the problems of industrialization. Sanitation statistics provide detail. According to one account, some neighborhoods of Manchester had only two toilets for every 250 residents. Under such conditions, disease spread easily. As a result, about six children in ten died before the age of five.

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**Teaching Tip**

Find several images that illustrate life before and after industrialization. Display them for students to see.
The Factory System and Workers

Factories changed more than just families and towns. They also transformed the very nature of labor, as industry moved from the home to the factory.

Workers in a New Economy
The factory system required large amounts of capital, or money, to pay for building the factories and installing the machinery. This produced three main levels of participants within the system: wealthy business people to invest in and own the factories; mid-level employees to run the factories and supervise the day-to-day operations; and low-level employees to run the machines.

Employers who invested their money expected to make a profit. They shared little of their profits with their employees, who were paid only for the hours they worked. At the same time, no one worker was responsible for the product’s quality, and factory workers had little incentive to improve their job performance. Quality could decline.

Also, workers were plentiful. British factories had no trouble finding former farm workers displaced by the enclosure movement. In the United States, immigrants were glad to find any work they could.

Employers often preferred hiring women and children because men expected higher wages. Men were also seen as not taking orders as readily. In addition, many people saw unskilled factory jobs as inappropriate for men. Factory work was seen as “women’s work.”

The Factory System and Workers

Compare What did mid-level and regular employees have in common? Both worked for factory owners.

Analyze How did the large labor supply hurt individual workers? Discontented workers had few options; other workers were willing to replace them.

History Close-Up

Factory Work

Development of Management
Originally, factory owners managed their factories personally. As factories grew and employed more people, one person could no longer supervise so many workers. Management positions were created and many administrative responsibilities fell to managers, who took instructions from owners. The role of managers has grown steadily and now they are an integral part of most industries. People in management positions are often well-paid, highly respected professionals.

About the Illustration

This illustration is an artist’s conception based on available sources. Historians, however, are uncertain exactly what this scene looked like.

Skills Focus: Identifying Problem and Solution

Reading Skill: Company Meeting

Materials: butcher paper, markers

1. Review with students the different levels of employees within the factory system and the working conditions within the factories.

2. Organize students into three groups: business owners, mid-level employees, and lower-level employees. Have each group work together to make a list of complaints to present at the company meeting. Have students write the complaints on butcher paper.

3. Hold a company meeting during class. Have volunteers from each group read its list of complaints to the class.

4. Post the lists for students to see, and guide students in a discussion about whether compromises could be reached on any common issues among the three groups.

Alternative Assessment Handbook, Rubrics 14: Group Activity; and 35: Solving Problems

Answers

History Close-Up poor ventilation, machine-related injuries, punishment from foremen, bone deformation; tasks separated by floor
Effects of the Factory System

Evaluate What effects do you think the factory system had on families? possible answer—unable to spend much time together, informal education interrupted for children

Quick Facts Transparency: Effects of the Factory System

Info to Know

Chartism The Reform Act of 1832 widened voting rights in Britain but included property requirements that excluded people of the lower classes. In 1836 organizers formed the London Working Men’s Association and drew up a charter of political demands. The so-called Chartists used public meetings, petitions, and strikes to draw attention to their cause. Some Chartists even threatened physical force if their demands were not met. Although the movement eventually died out, its goals were taken on by others and many reforms were passed in the second half of the 19th century.

Differentiating Instruction

Advanced Learners/Gifted and Talented

1. Have students consider these questions: If you were a discontented worker in industrial Britain, what options would you have? What actions would you take to change your situation? Have students write a half-page response to these two questions.

2. Organize students into small groups. Have groups discuss their responses and select the one that they believe might be most effective and achievable.

3. Guide students in a discussion about the various options that discontented workers had. Also discuss the probable outcome of various actions.

4. As an extension, have students watch the classic silent film Metropolis and then discuss its imagery and symbolism. Intrapersonal, Verbal-Linguistic

Answers

Reading Check Different groups that were part of the factory system became part of the middle class.

246
the factories running and their books balanced. Engineers designed the machines, and mechanics kept them in good repair. Other workers transported the goods to market while still others were engaged in sales of those goods. As the income from increased manufacturing, buying, and selling spread throughout the economy, more people entered the middle class. 

**Identify Cause and Effect**

How did the factory system affect different groups?

### Factories and Mass Production

The factory system certainly changed the world of work. In addition, new processes further changed how people worked in factories and what they could produce.

**The Process of Mass Production**

Many changes in industry evolved fully in the United States. One of these changes was the development of mass production—the system of manufacturing large numbers of identical items. Elements of mass production, including interchangeable parts and the assembly line, came to be known as the American system.

Interchangeable parts are identical machine-made parts. They made production and repair of factory-made goods more efficient. Before industrialization, one skilled worker might have made an entire gun, clock, or other product by himself. He would make or gather all the parts and assemble them. The process could be slow, and because the parts were all handmade, the finished products were a little different from each other. With interchangeable parts, though, one worker could put together many identical products in a short time. Making repairs was easier, too, because replacement parts did not have to be custom-made to fit.

The other element of mass production related to movement within factories. In early workshops, the product stayed in one place and workers moved around it, adding parts and making refinements. An innovation was the assembly line. In an assembly line, the product moves from worker to worker, as each one performs a step in the manufacturing process. With this division of labor, workers can make many items quickly.

### Effects of Mass Production

Mass production had advantages and disadvantages. A big advantage was a dramatic increase in production. Businesses that made many items quickly could charge less per item. As a result, more people could afford to buy these mass-produced goods.

For employees, however, mass production could lead to more repetitious jobs. At first, some workers protested, refusing to work quickly. But the changes could not be stopped, and mass production became the norm in factories.

**Summarize**

What was mass production?

---

**Reviewing Ideas, Terms, and People**

1. **a. Describe** How did the textile business work when it was a cottage industry?
   
2. **b. Compare** List some advantages and disadvantages of cottage industry.
   
3. **a. Recall** Why were early factory towns unhealthy?
   
4. **b. Explain** Why was cotton work especially dangerous for children?
   
5. **c. Infer** If working in factories and living in the cities was so terrible, why didn’t people stay?
   
6. **a. Define** What were the two main components of the American System of mass production?
   
7. **b. Develop** Why would the American system help many industries grow larger and richer?

**Critical Thinking**

5. **Analyze** Use your notes to fill in a chart like the one below by analyzing the effects of the factory system. Who do you think benefited the most and least from the changes?

<table>
<thead>
<tr>
<th></th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Focus on Writing**

6. **Narration** Write a paragraph or two in which you describe the changes that a typical English town and its residents might have experienced in the 1800s as industries developed in the town.

---

### Section 2 Assessment Answers

1. **a. merchant brought wool to cottage, weaver made cloth, merchant took cloth to market**
   
2. **b. advantage—worker could adjust schedule; disadvantage—fire or floods**
   
3. **b. chemicals, pollution, poor sanitation**
   
4. **b. could be injured while using machines**
   
5. **c. had no other way to make a living**
   
6. **b. business owner at top, mid-level employees, regular employees at bottom**
   
7. **b. business owners who cared only about making a profit, willing workers were plentiful**
   
8. **c. Unions and strikes were illegal.**

### Mass Production

Describe: How was a product made before the development of interchangeable parts? One skilled worker made the entire product; as a result, each finished product was slightly different.

Make Inferences: Why do you think some workers resisted mass production? Possible answer—Working in factories might have been boring and repetitive.

---

**Close**

Have students explain how the factory system led to changes in all aspects of people’s lives.

**Review**

Online Quiz, Section 2

**Assess**

Section 2 Assessment

Progress Assessment: Section 2 Quiz

Alternative Assessment Handbook

**Reteach/Intervene**

Interactive Reader and Study Guide, Section 2

Interactive Skills Tutor CD-ROM

**Answers**

Reading Check: a system of manufacturing large numbers of identical items
New Ideas in a New Society

**Main Idea**
The Industrial Revolution inspired new ideas about economics and affected society in many ways.

**Reading Focus**
1. What new ideas about economics developed during the Industrial Revolution?
2. What competing economic ideas arose as a result?
3. How did the Industrial Revolution affect society?

**Key Terms and People**
- laissez-faire
- Adam Smith
- Thomas Malthus
- entrepreneur
- Andrew Carnegie
- socialism
- Karl Marx
- communism
- standard of living

**Before You Read**

<table>
<thead>
<tr>
<th>What marvels of industry were displayed in a glass palace?</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 1851, the Great Exhibition in London drew residents and visitors to a huge glass and iron building called the Crystal Palace. Inside the marvelous structure were nearly 14,000 exhibits, many of which displayed industrial products and processes. English writer Charlotte Brontë was dazzled by the exhibition: “It is a wonderful place—vast, strange, new, and impossible to describe. Its grandeur does not consist in one thing, but in the unique assemblage of all things.” Brontë was impressed by the wide range of exhibits, including “great compartments filled with railway engines and boilers, with mill machinery in full work…” All these remarkable exhibits showed the accomplishments of the Industrial Revolution. People came from far away to gawk at those achievements. In fact, some 6 million visitors from across Europe and elsewhere attended the exhibition.</td>
</tr>
</tbody>
</table>

**A Palace for Industry**

**Results of the Industrial Revolution**

1. **Teach** Ask students the Reading Focus questions to teach this section.
2. **Apply** Have students create two Web diagrams for the section, one that shows the key people and their ideas and the other that shows the costs and benefits of industrialization.
3. **Review** As you review the section, have students explain the different political and economic ideas that came out of the Industrial Revolution.
4. **Practice/Homework** Have students write a one-page essay on the positive and negative results of the Industrial Revolution.

**Teach the Main Idea**

**Taking Notes**

- **Key Terms and People**
  - laissez-faire
  - Adam Smith
  - Thomas Malthus
  - entrepreneur
  - Andrew Carnegie
  - socialism
  - Karl Marx
  - communism
  - standard of living

- **New Ideas about Economics**
  During the late 1700s and early 1800s industrialization was changing not just products and work, but also how people thought about economics. One change was that mercantilism was giving way to capitalism and competition.

- **Capitalism and Competition**
  Under the old mercantile system, governments restricted trade to protect their own industries from foreign competition. Then, starting in the late 1700s, some people said that governments should not interfere in business. This idea is called laissez-faire (lahz-ay-fehr) economics, from a French phrase meaning “free to do.”

**Teach the Main Idea**

<table>
<thead>
<tr>
<th>Academic Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>stance</strong> attitude or position (p. 250)</td>
</tr>
</tbody>
</table>

**Taking Notes**

- **new ideas about economics**
- **entrepreneurs built fortunes**
- **new industries developed**
- **lives of women changed**
- **migration of job seekers from countryside to city**
- **cities became crowded and dangerous**
- **pollution of air and water**
- **population grew rapidly**
- **standard of living in industrialized countries improved**
- **Great Britain, France, and Germany emerged as global leaders**
- **United States benefited from industrialization**

**Online Resources**

- **go.hrw.com**
  - **KEYWORD:** SHL IND
  - **ACTIVITY:** Historic Origins of Socialism and Capitalism

**CONTENT TOFAMILIESTHESECTION**

**Interactive Reader and Study Guide**

- **Online Resources**
  - **Interactive Reader and Study Guide**
  - **Vocabulary Builder: Section 3**

**CRF:**

- **Section 3**
  - **Term in this section.**
  - **Key Terms and People**
    - Thomas Malthus
    - Adam Smith
    - laissez-faire
    - entrepreneur
    - Andrew Carnegie
    - socialism
    - Karl Marx
    - communism
    - standard of living

**Before You Read**

- **Visitors crowded into the Crystal Palace to view the displays.**
  - *Dickinson’s Pictures of Great Exhibition, 1851*
Adam Smith became the leading advocate of laissez-faire economics. In 1776 he published *The Wealth of Nations*, in which he analyzed the definition and creation of wealth. Smith wrote that markets free from government interference benefited all. Such an economic system free from regulation is called a market economy. Also in a market economy, businesses can compete freely against each other for trade. The British government agreed with Smith’s ideas and ended most regulations by the 1840s.

Smith influenced Thomas Malthus, who was concerned about population growth caused by the development of industry. Malthus wrote that the population would always grow faster than food production. Therefore, he concluded, poverty and misery would never go away. Population growth, Malthus said, was slowed only by war, disease, famine, and decreased reproduction. Because many people agreed that these problems were unavoidable, Malthus’ ideas were used to justify low wages and laws that limited charity to the poor.

In time, Malthus was proved wrong. The disasters he predicted did not happen, but the population did grow. Still, the ideas of Smith and Malthus affected attitudes. As Smith predicted, industrialization succeeded and spread. Industrial capitalism emerged as the main economic pattern in the Western world.

**New Roles for Business Leaders**

Industrialization also changed the roles that business leaders played in public life. Before the Industrial Revolution, people who owned land controlled the wealth and power. But by the mid-1800s, the leaders of industry began taking away the landowners’ influence. Some industrialists became extremely wealthy, and their new wealth bought them political power.

The Industrial Revolution also highlighted the role of the entrepreneur, someone who starts a new business. Among the entrepreneurs were financiers, bankers, and investors who pooled their money to create large corporations. As demand increased for capital to build factories, banking and finance became more important occupations. Some industrialists made fortunes simply by buying and selling companies for a profit.

A few industrialists, mainly in the United States, built some of the largest corporate empires ever seen—and acquired wealth that few people could imagine. In the late 1800s, their stories helped make them famous.

Andrew Carnegie, who was born in Scotland, was an example of “rags to riches” success. His father, a weaver, was driven out of work by the textile mills. The family moved to America, and Carnegie started working in a mill at age 12. With hard work, creativity, intelligence, and tough business practices, he led the expansion of the American steel industry.

Carnegie’s clothing is a combination of the traditional Scottish kilt and the American flag.

**The Wealth of Nations, increased role of entrepreneur**

**Primary Source**

“Upon the sacredness of property civilization itself depends—the right of the laborer to his hundred dollars in the savings bank, and equally the legal right of the millionaire to his millions.”

—Andrew Carnegie, “Wealth” from the North American Review, June 1889

**Primary Source**

“In a sense, the theory of the Communists may be summed up in a single sentence: Abolition of private property.”

—Karl Marx and Friedrich Engels, *The Communist Manifesto*, 1848

**Answers**

**Learners Having Difficulty**

1. Draw the graphic organizer for students to see. Omit the italicized answers.

2. Organize students into mixed-ability pairs. Have pairs copy and complete the graphic organizer. **Visual-Spatial**

**Alternative Assessment Handbook**, Rubric 13: Graphic Organizers

**New Industrialists**

<table>
<thead>
<tr>
<th>Who were they?</th>
<th>What did they do (positive)?</th>
<th>What did they do (negative)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carnegie, Rockefeller, Vanderbilt</td>
<td>built large businesses, gave to charity</td>
<td>drove competitors out of business, did not allow unions</td>
</tr>
</tbody>
</table>

**Reading Focus**

1. What new ideas about economics developed during the Industrial Revolution? laissez-faire economics, *The Wealth of Nations*, increased role of entrepreneur

**New Ideas about Economics**

**Describe** What is *The Wealth of Nations* about? analyzes wealth and how it is created; states that markets free from regulation would benefit all

**Make Inferences** How were Malthus’s ideas used to justify low wages? Poverty would never go away, so there was no reason to combat it with higher wages.

**Make Generalizations** How did industrialists and entrepreneurs become extremely powerful? took away influence of landowners, pooled money to create corporations, used tough business practices, acquired enormous wealth
The Iron Law of Wages

The ideas of Adam Smith and Thomas Malthus have many admirers. Among them was David Ricardo (1772–1823), an English banker. In an 1817 work, Ricardo argued that natural economic forces would keep wages low — so low that workers barely had enough to survive. Ricardo’s theory came to be called The Iron Law of Wages, indicating that the “law” was real and unchangeable. The theory was popular with factory owners, since it justified their paying low wages to their employees.

“It is when the market price of labour exceeds its natural price that the condition of the labourer is flourishing and happy, that he has it in his power to command a greater proportion of the necessaries and enjoyments of life, and therefore to rise in population. According to Ricardo, what encourages population growth?

—David Ricardo, On Wages, 1817

Other industrialists achieved similar feats. Examples include Cornelius Vanderbilt in railroads and John D. Rockefeller in oil. These men built giant corporations that drove out their competitors. They were both admired for their contributions to human progress and criticized for their treatment of workers. For example, they were generally against their employees’ joining labor unions. Although some, like Andrew Carnegie, gave generously to charity, people who disapproved of their methods sometimes called them “robber barons.”

Competing Economic Views

Not everyone agreed that laissez-faire capitalism was a good thing. Some thinkers blamed capitalism for bad working conditions and big gaps between the rich and poor. They took a different stance on economic systems. Two of these men were Robert Owen and Karl Marx.

Robert Owen In contrast to the gloomy views of Thomas Malthus, Robert Owen had a more hopeful view of how industry might affect people. He thought that for the good of all, society or the government, instead of individuals, should own property and control industry — a theory called socialism. The theory was a clear contrast to capitalism.

To demonstrate his ideas, Owen built a mill complex at New Lanark, Scotland, that gained widespread praise as a model industrial town. The workers there enjoyed good working conditions, shops at nonprofit stores, lived in decent houses, and could earn sick pay. Because he felt that education improved character, Owen even provided free schooling for the workers’ children. He also imposed strict rules on workers’ personal lives, including curfews and bathing requirements.

Owen brought his ideas to the United States in 1823, when he founded a community called New Harmony in Indiana. New Harmony was to be a utopia, an ideal community where poverty and other evils of society did not exist. The belief that such communities can solve society’s problems is called utopianism.

The efforts of Owen and other people who believed in socialism led to a movement called social democracy. Those who advocated social democracy wanted to move from capitalism to socialism by democratic means.

Info to Know

Robert Owen Robert Owen began his career as an entrepreneur in the textile industry. When he purchased New Lanark, one of his first actions was to set up a school nearby. He stopped employing children under the age of ten, and sent them to school instead. Fearing a loss of money, Owen’s partners protested. In response, Owen borrowed money to buy out his partners’ shares of the business.

Answers

Primary Sources 1. high wages cause population to increase, laborers increase, wages fall; 2. possible answer — Yes, he writes about the workers’ happiness, health, and “enjoyments of life.”

Reading Check mercantilism gave way to capitalism and competition, laissez-faire economics and The Wealth of Nations allowed for increased role of entrepreneur

Skills Focus: Drawing Conclusions

Reading Skill Economic Issues of the Industrial Revolution

Background: Explain to students that for countries to determine whether their economies will be based on free enterprise or on socialism, they must decide what goods will be produced, how goods will be produced, and for whom. Other economic factors arose during the Industrial Revolution, such as monetary systems, and measures of wealth and value determination, which today include such indicators as CPI and GNP.

1. Organize students into small groups.
2. Have groups discuss why these various economic issues arose during the Industrial Revolution, and why different methods of value determination emerged.
3. Guide students in a class discussion about each group’s conclusions. Interpersonal, Verbal-Linguistic

Alternative Assessment Handbook Rubrics 11: Discussions; and 14 Group Activity
Karl Marx. A more radical view of socialism was put forth by two Germans, Friedrich Engels and Karl Marx. They declared that as capitalism grew, more and more workers would sink into poverty. In time they would rebel, seize control of the “means of production”—such as factories and farms—and govern themselves. Capitalism would collapse. Workers would establish a society based on cooperation and equal distribution of wealth. Such a revolution was inevitable, the authors claimed.

In time, Marx would be better known than Engels. In 1867 Marx produced the first volume of Das Kapital. In this three-part work, he put forth his arguments against capitalism. One of its evils, Marx said, was how capitalism disrupts the relationship between labor and profit. He thought there should be a direct connection between one’s work and one’s pay. For example, he thought it was not fair that one worker could toil all day at back-breaking labor and make very little money while another person got rich doing nothing more than sitting in an office speculating on future markets.

Marx thought that socialism could help rid the world of these injustices. However, he believed that the transition to socialism would not happen quickly because many people, especially the wealthier classes, would not see any benefit for themselves. For that reason, he thought the workers would have to control the government. Because the government would then control the economy, a command economy would result. The system in which the government owns almost all the means of production and controls economic planning is called communism. Years later, some governments would adopt communism and use it to violate basic human rights and freedom of choice.

**Effects on Home Life** When work was done in the home, women often worked alongside their husbands. Then when industry drew workers away from home, women were usually the ones who stayed home to care for children. The world of work and home began to separate. Women and men were seen as occupying “separate spheres”—the woman in the home and the man in the workplace to support the home and family.

**Effects on Society**

The rise of new economic ideas was among the countless effects of the Industrial Revolution. Other effects were felt in small and large ways, from how families lived to how countries dealt with each other. For example, the shift away from cottage industries affected home life and the roles of women in society.

**Effects on Home Life**

<table>
<thead>
<tr>
<th>Women Who Went from Cottage Industries to Factory Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earned low wages in low-skill jobs</td>
</tr>
<tr>
<td>Separated from their families</td>
</tr>
<tr>
<td>No real improvement in their status</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Working-Class Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Found jobs as cooks, maids, and child-care workers</td>
</tr>
<tr>
<td>More families could afford to hire them</td>
</tr>
<tr>
<td>Found some new educational and cultural opportunities</td>
</tr>
<tr>
<td>Overall improvement for many women</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Middle-Class Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freed from chores because many could</td>
</tr>
<tr>
<td>Began to attend college and get jobs as teachers</td>
</tr>
<tr>
<td>Those who did work often criticized by</td>
</tr>
<tr>
<td>Most affected by idea of separate spheres</td>
</tr>
</tbody>
</table>

During the Industrial Revolution, some women who went from cottage industries to factory work had no improvement in their status.

**Competing Economic Views**

**Summary**

What did Marx and Engels think would happen to the capitalist system? More workers would sink into poverty; workers would rebel, take over means of production, and then govern themselves.

**Elaborate**

Why did Marx support the idea of a command economy?—possible answer—thought government should control economy

**Reading Focus**

1. How did the Industrial Revolution affect society? growth of new industries, working class women in factories and other jobs, migration of job-seekers to cities, pollution, some countries became powerful, increased standard of living

2. How did industrialization affect home life? separate spheres—women stayed home, men worked in factories, women expected to teach morals at home

**Make Inferences**

Why do you think women who went from cottage industries to factory work had no improvement in their status? possible answer—were still performing low-skilled work

**Quick Facts Transparency:** Effects of Industrialization on Women

**Skills Focus: Making Oral Presentations**

**Reading Like a Historian Skill**

**Women of Different Social Classes**

1. Organize a talk show about the social differences among women during the Industrial Revolution. Have a number of volunteers represent women from different social classes in a talk-show format. Select one student to serve as the show host and moderator. Have students prepare their roles beforehand. The rest of the class will serve as the show audience.

2. Begin the talk show. Have the host ask each guest to explain how industrialization has changed her life. As the guests respond, have audience members jot down one or two questions to ask a specific guest.

3. Encourage the guests to engage with each other and then encourage the host to interject occasionally.

4. Allow the audience members to ask their questions.

**Alternative Assessment Handbook** Rubric 14: Group Activity

**Answers**

Reading Check Socialists blamed capitalism for harsh working conditions, polluted cities, and the big gaps between rich and poor.
Effects on Society

**Recall** How did industrialization positively affect Great Britain, France, and Germany? became leaders in global economy; mass produced ships and weapons

**Elaborate** How might industrialization lead to cultural clashes and discrimination? limited number of jobs, housing, waves of immigrants looking for work

**Map Transparency**: Industrialized Europe, 1900

**CRF**: History and Geography: The First Modern

**Recent Scholarship**

Many male writers who lived through the Industrial Revolution expressed a longing for an idealized past. According to Susan Zlotnick, professor of English at Vassar College, British women writers had a very different perspective. In her book *Women, Writing, and the Industrial Revolution*, Zlotnick argues that writers like Elizabeth Gaskell and Charlotte Brontë were more willing to accept industrialism and foresaw the possibility of improvement in the changes that it brought.


The idea of separate spheres had another effect. Although so many people enjoyed what the new industrialized economy provided, in general they saw the business world as without moral controls. Women were expected to provide moral guidance in the home.

Middle-class families were more affected by this division between home and work than were lower-class families. Poorer families that depended on two incomes to survive could not afford for the wife to stay home. However, belief in the home as society’s moral center was equally powerful among lower-class families.

**Effects on Countries** On a scale much larger than the family home, industrialization also affected entire countries. For some nations, industry brought with it great power. For example, Great Britain, France, and Germany became leaders in the global economy.

**Skills Focus: Analyzing Costs and Benefits**

**Social Studies Skill**

**Analysis of Industrialization**

1. Organize students into small groups.

2. Have groups discuss the following questions:
   - How has the Industrial Revolution changed everyday life? How has it changed the way you view the world? Who has it benefited most and who has it benefited least? How might the negative impact of industrialization be diminished? For example, what could be done to reduce pollution that continues to occur? How might industry be refocused in the future to achieve the maximum benefits with minimum costs?

3. Guide students in a large group discussion of these questions. **Intrapersonal**

**Alternative Assessment Handbook** Rubric 11: Discussions
Mass production increased their ability to build ships and make weapons. With increased military strength, some countries were able to conquer and control sources of raw materials around the world.

The powerful industrial giants could even control the economy of a place thousands of miles away. For example, India had made and exported cotton cloth for centuries already when Britain took control of the region. Indian textile workshops were not mechanized, however, so cotton cloth imported from Britain was cheaper. The Indian textile industry could not compete and was practically destroyed.

Back on this side of the world, the effect of industrialization on the United States was very dramatic. With its huge size, wealth of natural resources, and spirit of independence, the United States industrialized rapidly. Like the major industrial powers of Europe, the United States gained global political power based on its industrial strength. In addition, industry helped the country's population grow quickly. A large number of the new Americans had moved from other lands around the world, drawn by jobs in American factories. The immigrants, both skilled and unskilled, contributed to the nation's economic success and its cultural variety.

Long-Term Effects on Societies

Over-all, industrialized societies saw an increase in wealth. It is true that much of the wealth flowed into the pockets of a few rich industrialists. But manufacturing also created a new middle class of clerks, merchants, and managers. In general, the standard of living, or level of material comfort, for people in industrialized countries improved. Even many of the poorest people gradually benefited from labor-saving devices and cheap, machine-made goods.

The Industrial Revolution introduced something new to the middle class: leisure. People had more time on their hands and more money in their pockets. They could enjoy public sports events, a concert in the park, a day at the beach, or even a vacation. With increased leisure time, they could become more educated or participate more deeply in politics.

You will soon read how industrialization brought big changes to almost all aspects of daily life—from art to transportation. We are still experiencing those changes in our lives today. The full story of the Industrial Revolution has yet to be written.

Effects on Society

Identify What benefits did industrialization bring to some nations? great power, military strength, increase in overall wealth and standard of living, leisure time

Evaluate Which do you think were greater, the costs or benefits of industrialization? possible answers—costs; destroyed an older way of life and the environment; benefits; brought prosperity, wealth, and leisure time

CRF: Biography: Louis Pasteur
CRF: Interdisciplinary Project

Close

Guide students in a discussion about the positive and negative effects of industrialization.

Review

Online Quiz, Section 3

Assess

SE Section 3 Assessment
Progress Assessment: Section 3 Quiz
Alternative Assessment Handbook
Reteach/Intervene
Interactive Reader and Study Guide, Section 3
Interactive Skills Tutor CD-ROM

Answers

Reading Check families—wealth, leisure time, better educated; countries—increased power, wealth, and living standards; overcrowding of cities, pollution, rapid population growth