

The Growth of Industry

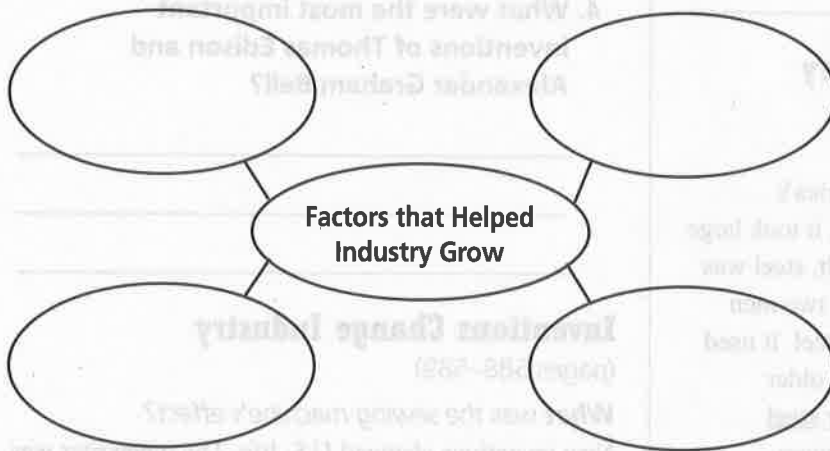
Before You Read

In the last chapter, you read about how the nation began expanding westward in the years following the Civil War.

In this section, you will learn about the growth of industry in the United States and how it changed many lives.

As You Read

Use this diagram to take notes on the factors that spurred the nation's industrial growth.



The Industrial Revolution Continues

(pages 585–586)

What helped U.S. industries to grow?

After the Civil War ended, U.S. industries grew more rapidly. Several factors caused this growth. First, the nation had many natural resources. For example, it had a lot of mineral wealth. This included coal, iron, and copper. These resources were used to make a variety of goods.

From 1860 to 1900, the number of people in the country more than doubled. Because the nation had more people, it needed more goods. To meet that demand, industry became larger. There were also large numbers of immigrants. They supplied factories with workers.

Better means of transportation helped industry to grow. These included roads, canals, and railroads. They made it easier to ship goods.

New discoveries also aided the growth of industries. For example, chemists began to make

kerosene from an oily liquid called **petroleum**. It was cheaper to light lamps using kerosene. The number of inventions also grew at a fast rate. Inventors applied for patents. A **patent** is a government document. It gives inventors the sole right to make and sell their products. Finally, banks and rich people chose to *invest* money in businesses.

1. Describe two factors that helped the nation's industries to grow.

The Business Cycle (pages 586–587)

How do a boom and bust differ?

U.S. industry did not grow at a steady pace. It went through ups and downs. This pattern of good and bad times is called the **business cycle**. Good times are called booms. During these times, people buy more and invest in business. As a result, industries and

TERMS & NAMES

petroleum Oily, flammable liquid used in making kerosene

patent Document giving inventors sole rights to make and sell their products

business cycle Pattern of good and bad economic times

Bessemer steel process Technique that produced steel more cheaply

generator Machine that produced electric current

Thomas Edison Inventor who developed a practical light bulb and found the most ways to use electricity

Alexander Graham Bell Inventor who developed the first telephone

Centennial Exhibition A public fair celebrating America's 100th birthday

businesses grow. Bad times are known as busts. During a bust, people buy and invest less. As a result, businesses close. The number of unemployed people rises.

During the late 1800s, America went through a series of economic booms and busts. Yet, U.S. industries continued to grow.

2. What is the difference between an economic boom and bust?

Steel: The Backbone of Industry

(page 587)

What was the Bessemer steel process?

The steel industry added greatly to America's industrial growth. Before the mid-1800s, it took large amounts of coal to make steel. As a result, steel was very expensive to produce. In the 1850s, two men developed a new technique for making steel. It used less than one-seventh of the coal that the older process used. It was called the **Bessemer steel process** after one of the technique's inventors.

This process cut the cost of making steel. As a result, the nation's steel output greatly increased. Steel was used for many products. The main use was rails for the railroads.

3. How did the Bessemer steel process lead to an increase in steel output?

Edison and Electricity; Bell and the Telephone (pages 587–588)

What did Edison and Bell invent?

The industry to create electric power got its start in the late 1800s. By the 1870s, people had invented

good **generators**. These are machines that make electric current. As a result, people became eager to use electricity. The man who found the most ways to do so was **Thomas Edison**. He invented the first safe, steady light bulb.

Electricity played a role in inventions that helped people to communicate. One of the most important of these was the telephone. **Alexander Graham Bell** invented it. Bell showed his telephone at the **Centennial Exhibition**. This was a large public fair. It took place to mark the 100th birthday of the United States. The telephone amazed the scientists who saw it.

4. What were the most important inventions of Thomas Edison and Alexander Graham Bell?

Inventions Change Industry

(pages 588–589)

What was the sewing machine's effect?

New inventions changed U.S. life. The typewriter was invented in 1867. It opened jobs for women. The sewing machine led to a new industry. Factories used it to make clothes. The clothes came in standard sizes and popular styles. Soon, many people bought clothes instead of making their own.

Granville T. Woods was an African-American inventor. He made telephone and telegraph systems better. Margaret Knight invented machines to help with packaging and shoe-making. She also improved motors and engines.

5. What practice did the sewing machine help to discourage?

Railroads Transform the Nation

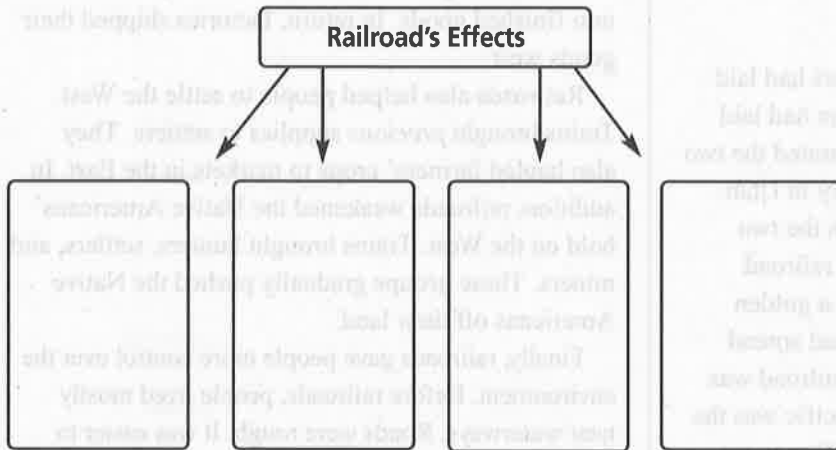
Before You Read

In the last section, you learned about the factors that led to the growth of industry in the United States.

In this section, you will learn how railroads tied the nation together and dramatically altered U.S. life.

As You Read

Use this diagram to take notes on the different ways in which the railroads impacted society.



Deciding to Span the Continent

(pages 590–591)

What is a transcontinental railroad?

For years, Americans had wanted to build a **transcontinental railroad**. This was a railroad that would span the whole continent. Such a railroad would encourage people to settle the West. It would also help the West's economy grow. In 1862, Congress passed a bill that called for two companies to build such a railroad.

The Central Pacific company would start in Sacramento, California. It would build east. The Union Pacific would start in Omaha, Nebraska. It would build west. The government lent the companies millions of dollars for the project. It also gave them public land that they could sell. The Central Pacific began to lay track in 1863. The Union Pacific began in 1865.

TERMS & NAMES

transcontinental railroad A railroad that spanned the entire continent

standard time System that divided the country into four time zones

1. What two companies were in charge of building the transcontinental railroad?

Building the Railroad (page 591)

Who built the transcontinental railroad?

Most men in the West wanted to try to strike it rich as miners. So the Central Pacific did not have enough workers. As a result, the company hired several dozen Chinese men. The Chinese were efficient and hard-working. This prompted the company to hire many more Chinese. At the *peak* of construction, more than 10,000 Chinese worked on the Central Pacific.

The Union Pacific hired workers from many backgrounds. After the Civil War ended in 1865, former soldiers from both North and South flocked to

work on the railroad. Freed slaves and Native Americans also labored on the railroad. One of the largest groups of Union Pacific workers was immigrants. Many of these were from Ireland.

2. List the main groups that helped to build the transcontinental railroad.

Railroads Tie the Nation Together; Railroad Time (pages 591–592)

What is standard time?

By May 10, 1869, Central Pacific workers had laid 690 miles of track. Union Pacific workers had laid 1,086 miles. Only one span of track separated the two lines at their meeting point at Promontory in Utah.

Hundreds of people gathered to watch the two railroads link. The presidents of the two railroad companies hammered in the last spike—a golden one. The crowd roared. Soon the news had spread across the nation. The transcontinental railroad was complete. The Union Pacific–Central Pacific was the first transcontinental railroad. By 1895, four more lines had been built across the country.

The railroads changed America in a surprising way. They altered time. Before the railroads, each community set its own time. They based time on the study of the sun’s travels. This led to confusion for people who scheduled trains crossing several time zones. As a result, the railroad companies set up **standard time**. This system divided the United States into four time zones. This *uniform* time system made it easier to schedule trains.

3. Where did the nation’s first transcontinental railroad meet?

Economic and Social Changes (page 593)

How did railroads change American life?

The railroads changed people’s lives in many other ways. They linked the economies of the West and East. Trains carried such raw materials as lumber, livestock, and grain eastward. There they were made into finished goods. In return, factories shipped their goods west.

Railroads also helped people to settle the West. Trains brought *precious* supplies to settlers. They also hauled farmers’ crops to markets in the East. In addition, railroads weakened the Native Americans’ hold on the West. Trains brought hunters, settlers, and miners. These groups gradually pushed the Native Americans off their land.

Finally, railroads gave people more control over the environment. Before railroads, people lived mostly near waterways. Roads were rough. It was easier to travel on rivers. But trains could deliver supplies to places with no waterways. As a result, people had more freedom to settle where they wanted.

4. Name an economic and social change brought on by the railroads.

The Rise of Big Business

Before You Read

In the last section, you read about the building of the first transcontinental railroad and how railroads changed American society.

In this section, you will learn how business leaders guided industrial expansion and created new ways of doing business.

As You Read

Use this diagram to take notes on the business practices of John D. Rockefeller and Andrew Carnegie.

Industrialist	Industry	Methods
Carnegie		
Rockefeller		

TERMS & NAMES

robber baron Business person who became wealthy through dishonest methods

corporation Business owned by investors who bought stock in the company

John D. Rockefeller Leader of the oil industry

Andrew Carnegie Leader of the steel industry

monopoly Company that has sole control of an industry

trust A legal body created to hold stock in many companies

philanthropist A person who gives away large sums of money to charities

Gilded Age Term used to describe a time of both tremendous wealth and poverty in the late 1800s

The Growth of Corporations (page 594)

What is a corporation?

Until the late 1800s, most businesses were small and owned by one person. Because of new technology, many business owners wanted to buy new equipment. One way to raise the money to do so was to turn their businesses into corporations. A **corporation** is a business that is owned by many people. They buy a small part of the company through shares of stock.

Corporations have strengths that small businesses do not have. By selling stock, corporations can raise a lot of money. Corporations do not end even after their founders die. So banks are more likely to lend them money. Also, corporations are less of a risk to investors. This is because the investors do not have to pay off the corporation's debts. In the late 1800s, few laws controlled what corporations did. This led to the growth of a few giant corporations. They dominated U.S. industry.

1. What advantages do corporations have over small businesses?

The Oil and Steel Industries

(pages 595–596)

Who controlled the oil and steel industries?

The oil and steel industries grew in the late 1800s.

John D. Rockefeller led the oil industry. **Andrew Carnegie** led the steel industry.

Rockefeller gained control of the oil industry by putting his *competitors* out of business. He did so by buying other *refineries*. He also made secret deals with railroads. They agreed to carry his oil at a lower rate than other companies' oil. Soon, Rockefeller had created a **monopoly**. That is a company that wipes out its competitors and controls an industry.

Rockefeller also reduced competition by creating the trust in 1882. A **trust** is a legal body created to hold stock in many companies. Often, the other companies are in the same industry. By 1880, the Standard Oil Trust controlled 95 percent of U.S. oil refining. The trust set a high price for oil. The public had to pay that price because they could not buy oil from anyone else. Rockefeller's actions caused the public to view him as a ruthless **robber baron**.

In the steel industry, Andrew Carnegie rose to power by making the best and cheapest product. To do so, he tried to control all the steps that went into making steel. He bought the mines that supplied iron ore. He also bought the railroads that carried the ore to his mills.

Carnegie and Rockefeller earned hundreds of millions of dollars. They both became **philanthropists**. These are people who give large sums of money to charity. Rockefeller gave away more than \$500 million. Carnegie gave more than \$350 million.

2. Describe the different ways in which Rockefeller and Carnegie gained control of their industries.

The Gilded Age (pages 596–597)

What was the Gilded Age?

Rockefeller and Carnegie had risen from poverty to become rich. But most people who made millions in the late 1800s did not start out poor. Many were from families that already were wealthy. And many had gone to college.

During this time, the rich enjoyed great wealth. But many in society lived in poverty. Two writers named the era the **Gilded Age**. To gild is to coat an

object with gold-leaf in order to make it look better. Gilded objects were popular in homes. But the term *Gilded Age* also referred to the false appearance of society. A small group of rich people made U.S. society look beautiful. But below this rich surface were problems. These included corrupt politics and widespread poverty.

3. What problems in society did the visible wealth of a small group mask?

The South Remains Agricultural

(page 597)

Why was much of the South poor?

One region that knew great poverty was the South. Left in ruins by the Civil War, the South was slow to recover. In some Southern areas, industry did grow. But compared with the Northern economy, the Southern economy grew very slowly.

Most of the South remained agricultural. The sharecropping system was used throughout much of the region. Under this system, landowners rented their land to sharecroppers who paid a large *portion* of their crops as rent. The South's main crop continued to be cotton. In the years after the Civil War, the price of cotton was low. As a result, many sharecroppers made little money selling cotton. So they had a hard time buying what they needed.

4. Why was the South so much less industrial than the North?

Workers Organize

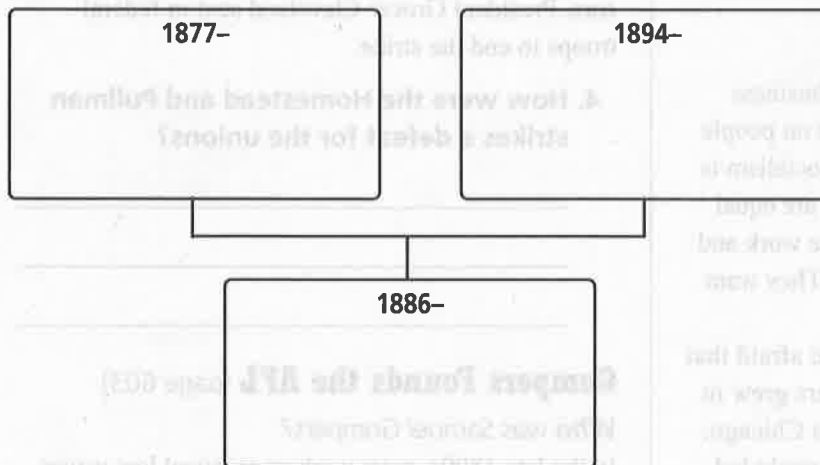
Before You Read

In the last section, you read about the growth of big business in America.

In this section, you will learn about how workers formed labor unions to help fight for greater rights.

As You Read

Use this time line to take notes on the major events in labor activism during the late 1800s.



Workers Face Hardship (pages 600–601)

What is a sweatshop?

As business owners in the late 1800s made money, many workers suffered. To keep profits high, many business owners ran their factories as cheaply as they could. Some made workers buy their own tools. Other owners refused to buy safety equipment.

If a factory became too crowded, the owner rarely built a larger one. Instead, the owner sent part of the work to be done by smaller businesses. Critics called these places sweatshops. **Sweatshops** were places where workers labored long hours under poor conditions for low wages. Often, both children and adults worked there.

Both factory and sweatshop owners kept wages low. In the 1880s, the average weekly wage was less than \$10. This barely paid a family's expenses.

TERMS & NAMES

sweatshop Place where workers labored long hours for little pay

Knights of Labor Prominent workers' union

socialism Economic system in which all members of society are equal owners of all businesses

Haymarket Affair A conflict between police and union members in Chicago in May 1886

Pullman Strike 1894 strike that spread throughout the rail industry

Eugene V. Debs American Railway Union president

Samuel Gompers U.S. labor leader
American Federation of Labor (AFL) National organization of unions that Gompers helped to found

1. What hardships did many workers face during the late 1800s?

Early Unions (pages 601–602)

What was the Knights of Labor?

Workers soon joined together to try to improve their lives. They formed labor unions. Unions are groups of workers that bargain with business owners to gain better wages and working conditions.

Some unions joined together to form national organizations. One of these was the **Knights of Labor**. This was a loose *federation* of workers from many different trades. Unlike other labor organizations, they let women and African Americans join.

If workers did not gain the changes they wanted, they often went on strike. This meant they refused to work. In 1877, B & O railroad workers went on strike to protest conditions. This was the Railroad Strike of 1877. The strike did not succeed. But it showed how angry American workers had become.

2. What did the Railroad Strike of 1877 demonstrate?

Union Setbacks (page 602)

What is socialism?

The growth of labor unions scared many business leaders. They blamed the labor movement on people who believed in anarchy and **socialism**. Socialism is a system in which all members of society are equal owners of all businesses. They share in the work and profits. Anarchists are far more extreme. They want to get rid of all governments.

Business and government leaders were afraid that unions might teach these ideas. Their fears grew in May 1886. A union held a protest rally in Chicago. Police tried to halt the meeting. A bomb exploded. The bomb killed seven people and wounded many more. This conflict was called the **Haymarket Affair**. Following it, police arrested hundreds of union leaders, socialists, and anarchists. More people began to oppose unions.

3. What effect did the violent episode in Chicago have on unions?

The Homestead and Pullman Strikes

(pages 602–603)

What were the Homestead and Pullman strikes?

Labor conflicts grew more bitter. In 1892, Andrew

Carnegie locked striking workers out of his steel mills in Homestead, Pennsylvania. He also hired armed guards. The guards fought with strikers in a battle that left ten people dead. State militia began to escort nonunion workers to the mills. After four months, the strike *collapsed*.

In 1893, the country went into an economic depression. Some companies cut costs to stay in business. In 1894, workers with the Pullman Palace Car Company went on strike. They did so because the company cut their pay by 25 percent. The **Pullman Strike** spread throughout the rail industry. **Eugene V. Debs** was president of the American Railway Union. He called on workers to refuse to handle Pullman cars. President Grover Cleveland sent in federal troops to end the strike.

4. How were the Homestead and Pullman strikes a defeat for the unions?

Gompers Found the AFL (page 603)

Who was Samuel Gompers?

In the late 1800s, most workers received low wages and few benefits. So, in spite of failed strikes and opposition to unions, the labor movement did not die. **Samuel Gompers** was a labor leader. In 1886, he helped found a new national organization of unions. It was the **American Federation of Labor (AFL)**. Gompers was its president for 37 years.

The AFL tried to win better working conditions. It used strikes, boycotts, and negotiation. As a result, the AFL won shorter hours and better pay for workers. By 1904, it had about 1.7 million members.

5. How did the American Federation of Labor win better conditions for workers?

Glossary/After You Read**collapse** To fall apart**competitor** An opponent, or someone who strives for something someone else wants**federation** A league or association**invest** To put money into a business in order to gain a profit**peak** The point of greatest development or intensity**portion** A part of**precious** Of great value**refinery** A plant that purifies oil**uniform** Always the same, unchanging**Terms & Names****A.** Write the letter of the term or name that best answers the question.

- | | |
|--------------------------|---------------------------|
| a. Alexander Graham Bell | d. Bessemer steel process |
| b. Andrew Carnegie | e. Samuel Gompers |
| c. John D. Rockefeller | f. sweatshop |

- _____ 1. Who developed the first telephone?
- _____ 2. What technique helped the steel industry to grow?
- _____ 3. Who achieved success by gaining control of the different steps of production?
- _____ 4. Which term refers to a place where workers labored for long hours and little pay?
- _____ 5. Who helped to found the American Federation of Labor?

B. If the statement is true, write "true" on the line. If it is false, make it true by changing the underlined word or words and placing the new word on the line.

- _____ 1. The pattern of good and bad economic times is known as the business cycle.
- _____ 2. Eugene V. Debs was an inventor whose most famous invention was practical electrical lighting.
- _____ 3. Americans could travel from one end of the country to the other by using a generator.
- _____ 4. Someone who gives away large sums of money to charity is called a philanthropist.
- _____ 5. The Knights of Labor was founded in 1886 and helped workers achieve better conditions by employing such methods as strikes, boycotts, and negotiations.

Main Ideas

1. How did both resources and people help spur the growth of industry in America?

2. Why was standard time created?

3. Why did the number of corporations grow in the late 1800s?

4. Who is an example of a robber baron? Why?

5. How was the union movement successful? How was its success limited?

Thinking Critically

Answer the following questions on a separate piece of paper.

1. How do you think electricity, the telephone, and the typewriter improved the nation's business output in the late 1800s?

2. How did the wealthy industrialists of the late 1800s hurt and help society?