

◀ Andrew Carnegie devoted his full attention to the steel industry in the 1870s.

1865 – 1901

Creating a Modern America

CHAPTER 2

ASKING ESSENTIAL QUESTIONS

How did the United States become an industrialized society after the Civil War?

Why do people migrate?

How is urban life different from rural life?

What Will You Learn? You will learn how industry arose in the United States and the social and economic changes that resulted.

Why Does This Matter? The rise of industry helped create a modern America. Big-business leaders like Andrew Carnegie became multimillionaires while employing tens of thousands of workers. Waves of immigration helped change the landscapes of American cities. Together, they built the skyscrapers, bridges, and railroads that made the United States the world's leading industrial nation.

How Will You Know That You Learned It? You will be able to describe how the growth of industry and immigration raised American living standards and shaped the nation's ethnic and religious diversity.

LESSON 1

Industry and the Railroads

LESSON 2

Big Business and Unions

LESSON 3

Immigration

ANALYZING SOURCES

The Immigrant Experience

LESSON 4

Urbanization and Social Reform

LESSON 5

The Segregated Gilded Age

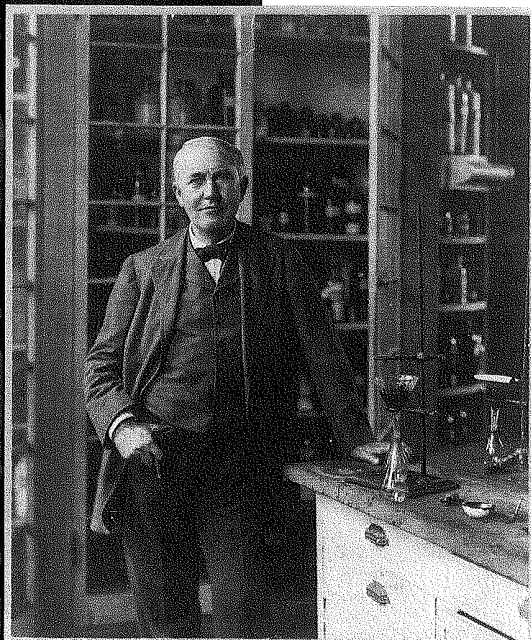


Using Your Inquiry Journal As you read this chapter and examine the primary sources, use your Inquiry Journal to help you make notes and expand your list of questions. As you gather information, think about how you will answer the Essential Questions above.

ESSENTIAL QUESTION

- How did the United States become an industrialized society after the Civil War?

THE STORY BEGINS...



36 It's All Online!

LESSON 1

Industry and the Railroads

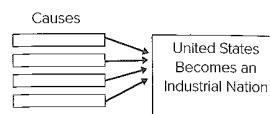
Thomas Alva Edison is remembered today as the greatest inventor in United States history. Among the inventions credited to him are the phonograph, the light bulb, and the motion picture. Here's a look at a typical page in his private notebook.

“ January 3, 1888
Things doing and to be done:
Cotton Picker
New Standard Phonograph
Hand Turning Phonograph
New Slow Speed Cheap Dynamo
New Expansion Pyromagnetic Dynamo
Deaf Apparatus
Electrical Piano . . . ”

—Thomas Alva Edison, private notebook

Edison's habits of hard work and unending invention exemplified an era in which advances in technology helped fuel a surge in industrial production in the United States.

◀ By the time of his death in 1931, Thomas Edison had received 1,084 patents for inventions and 9 patents for artistic design.



ANALYZING KEY IDEAS AND DETAILS

ORGANIZING As you read about the changes industrialization brought to the United States, complete the graphic organizer shown here with the causes of industrialization.

THE UNITED STATES INDUSTRIALIZES

GUIDING QUESTION *Why was the United States successful at industrialization?*

Although the First Industrial Revolution reached the United States in the early 1800s, most Americans still lived on farms when the Civil War began. After the war, industry rapidly expanded in a Second Industrial Revolution. Millions of Americans left their farms to work in mines and factories. The Second Industrial Revolution was characterized by increased technology. By the early 1900s, the United States was the leading industrial nation. Its **gross national product** (GNP)—the total value of all goods and services a country produces during a year—was roughly three times what it had been in the late 1860s.

NATURAL RESOURCES

The United States's industrial success was driven by its vast natural resources, including timber, coal, iron, and copper. This allowed American companies to obtain resources cheaply without importing them. Many of these resources were located in the American West, and Western settlement helped accelerate industrialization, as did the transcontinental railroad. Railroads took settlers and miners to the West and carried resources back to the East.

At the same time, people began using a new resource: petroleum. Even before the automotive age, petroleum was in high demand because it could be turned into kerosene, a fuel used in lanterns and stoves. The American oil industry began in western Pennsylvania, where residents had long noticed oil bubbling to the surface of area springs and streams. In 1859, Edwin Drake drilled the first oil well near Titusville, Pennsylvania, and by 1900, oil fields had been drilled from Pennsylvania to Texas. As oil production rose, it fueled economic expansion.

A LARGE WORKFORCE

The human resources available to American industry were just as important for industrialization. Between 1860 and 1910, the population of the United States nearly tripled. This population growth provided industry with a large workforce and created greater demand for consumer goods.

Population growth arose from three sources: increased immigration, better living conditions, and longer lifespans. More children survived to adulthood and adults lived longer. At the same time, social and economic conditions in parts of Europe and China convinced many people to immigrate to the United States in search of a better life. Between 1870 and 1910, more than 17 million immigrants arrived.

ANALYZING KEY IDEAS AND DETAILS

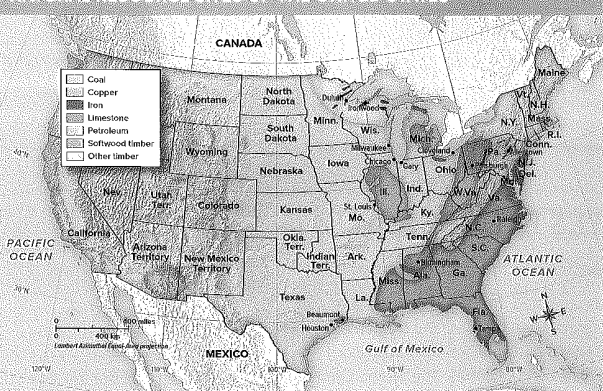
1. DETERMINING CENTRAL IDEAS Why does the text distinguish between the First Industrial Revolution and the Second Industrial Revolution?

2. EVALUATING EVIDENCE What is similar about the technological contributions of Cyrus Field and Alexander Graham Bell? Which of their inventions has proven most significant over time?

DETERMINING MEANING

Look for context clues in the paragraph containing the term **gross national product**. What does a high gross national product indicate? How does a GNP show a country's wealth?

NATURAL RESOURCE SITES OF THE UNITED STATES



GEOGRAPHIC REASONING

A wealth of natural resources helped fuel U.S. industrialization.

- 1. EXPLORING PLACE** What natural resource in the states of West Virginia, Ohio, and Pennsylvania attracted high demand?
- 2. HUMAN-ENVIRONMENT INTERACTION** Why might the first steel factories have been built in Pennsylvania?

ANALYZING PRIMARY SOURCES

- 1. CITING TEXT EVIDENCE** How do Bell's financial backers think he should raise money to develop the telephone?
- 2. EVALUATING EVIDENCE** Why do you think Bell's investors wanted him to work on telegraph technology rather than telephone technology?

Edison, invented a process for making cheap long-lasting carbon filaments for light bulbs. In 1889, several Edison companies merged to form the Edison General Electric Company (known today as GE).

Nikola Tesla, an immigrant from the Austrian Empire who had worked for Edison, invented alternating current (AC) system to distribute electricity over long distances using transformers and generators. The patents for Tesla's AC systems were then bought and developed by George Westinghouse and his company. The advancements in the transmission of electricity led to other improvements. City streets became safer as streetlights were installed. Electric trolley cars improved commute times to work, and new electric devices made domestic chores easier. AC current and transformers are still used today. Cyrus Field laid a telegraph cable across the Atlantic Ocean in 1866, enabling faster communication between the United States and Europe.

In 1874, Alexander Graham Bell began experimenting with ways to transmit sound via an electric current. Thomas Watson, Bell's business partner, described how their efforts began:

“He then sketched for me an instrument that he thought would [transmit speech], and we discussed the possibility of constructing one. I did not make it; it was altogether too costly and the chances of its working too uncertain, to impress his financial backers . . . who were insisting that the wisest thing for Bell to do was to perfect the harmonic telegraph; then he would have money and leisure enough to build air castles like the telephone.”

—from “Recollections of the Birth and Babyhood of the Telephone” (1913), by Thomas A. Watson

In 1876, Bell succeeded. A year later, he founded the Bell Telephone Company, which eventually became the American Telephone and Telegraph Company (AT&T). The telephone transformed communications. Businesses could place orders much more quickly and news of events that might shape business choices could be obtained in time for better decision making.

ELECTRIC POWER

New inventions and technology brought many improvements. Thomas Alva Edison and his company invented new products and improved existing inventions. Edison first achieved international fame in 1877 with the invention of the phonograph, and later perfected the electric generator and the light bulb. His laboratory invented or improved many devices, including the battery and the motion picture. In 1882, Lewis Latimer, who worked for

INNOVATION IMPROVES THE STANDARD OF LIVING

In ways big and small, technology improved the standard of living. Shortly after the Civil War, Thaddeus Lowe invented an ice-making machine—enabling people to obtain low-cost ice year round for ice boxes that kept food fresh. In the early 1870s, Gustavus Swift hired an engineer to develop a refrigerated railroad car. Swift shipped the first refrigerated load of fresh meat in 1877. The widespread use of refrigerated shipping containers enabled fresh food, especially meat, to be shipped long distances. The price of food began to drop and the quality of food people could obtain year round rose dramatically.

The pace of innovation continued throughout the late 1800s. In 1873, Christopher Scholes invented the typewriter. In 1886, Josephine Cochrane developed the automatic dishwasher. In 1888, George Eastman patented the first handheld camera. In 1893, Frank and Charles Duryea built the first gasoline-powered carriage. Power-driven sewing machines and cloth cutters rapidly moved the clothing business from small tailor shops to large factories. Similar changes took place in shoemaking. Large factories began using new processes and inventions to mass-produce shoes efficiently and inexpensively and could pass those savings on to their customers in the form of lower prices. By the early 1900s, tailors and cobblers had nearly disappeared. The prices of many products dropped as the United States industrialized.

CHECKING FOR UNDERSTANDING

- 1. EVALUATING** Which invention from this time do you think has had the most lasting influence? Explain why.
- 2. ANALYZING CHANGE** In addition to inventing things, how else did Edison and his company contribute to technological progress?
- 3. IDENTIFYING CONNECTIONS** What innovation greatly expanded the usefulness of electricity? How?

POLITICAL CARTOON

GOVERNMENT AND THE ECONOMY

These two political cartoons address tariffs and protectionism in the United States in the late 1800s.

The cartoon on the left depicts a flood of European goods damaging the demand for products made at American factories. The cartoon on the right shows a shopper being pulled between paying extra money to trusts (monopolies) to buy domestic goods and extra money (duties) to buy foreign goods.

- 1. INTEGRATING INFORMATION** What event is shown as leading to the destruction of American factories?
- 2. ANALYZING IDEAS** What argument does the cartoon on the right make about free trade?



The gate is labeled “Protection.” The flood is labeled “European Pauper Manufactures.”



This cartoon is entitled “The Consumer Consumed.”

MAKING CONNECTIONS: SCIENCE

REFRIGERATION

Refrigerators as we know them date from 1748. That was the year William Cullen invented artificial refrigeration. Developments in both refrigeration and air conditioning continued through the 1800s, and by 1911, General Electric offered the first home refrigerators. They did not immediately replace the iceboxes of the day, however. For one thing, they cost about twice as much as an automobile. For another, the gases used in the refrigeration process were toxic. Gas leaks from refrigerators could be—and sometimes were—fatal.

ANALYZING KEY IDEAS AND DETAILS

- 1. DETERMINING CENTRAL IDEAS** What are two areas in which supporters of laissez-faire believe government interference in the economy is acceptable?
- 2. CITING TEXT EVIDENCE** Are taxes and tariffs examples of a laissez-faire approach? Why or why not?

FREE ENTERPRISE

GUIDING QUESTION *How did laissez-faire economics promote industrialization?*

Another important reason the United States industrialized rapidly was the nation's free enterprise system. The profit motive attracted many ambitious people. **Entrepreneurs**—people who risk their capital in organizing and running a business—believed they could make money in industry. Foreign investors from Europe also saw great opportunities for profit in the United States.

THE BENEFITS OF LAISSEZ-FAIRE

Part of what attracted entrepreneurs was government's support for the idea of **laissez-faire** (leh-say-FAYR), a French phrase meaning "let people do as they choose." Supporters of laissez-faire believe that the government should not interfere in the economy except to protect private property rights and maintain peace. They argue that government regulations increase costs.

In many ways, the United States practiced laissez-faire economics in the late 1800s. State and federal governments kept taxes and spending low, and did not impose costly regulations or affect wages and prices. The United States was one of the largest free trade areas in the world, unlike Europe, which was divided into dozens of countries, each with tariffs. However, the government did not follow laissez-faire in everything. Since the early 1800s, Northern leaders wanted high tariffs to protect manufacturers from foreign competition and supported federal subsidies for companies building roads, canals, and railroads. Southern leaders opposed subsidies and favored low tariffs to promote trade and to keep the cost of imported goods low. After the southern states seceded, the Republican-controlled Congress passed the Morrill Tariff, nearly tripling tariff rates. In the early 1900s, business leaders began to push for free trade. They believed they could now compete internationally and win sales in foreign markets.

✓ CHECKING FOR UNDERSTANDING

- 1. IDENTIFYING CONNECTIONS** How did laissez-faire economics promote industrialization?
- 2. EXPLAINING CAUSE AND EFFECT** Why did many European investors support American entrepreneurship in the late 1800s?
- 3. UNDERSTANDING CHANGE** Why were tariffs first supported, then opposed, by American companies in the period after the Civil War?

LINKING THE NATION

GUIDING QUESTION *How did the transcontinental railroad transform the West?*

In 1865, the United States had about 35,000 miles of railroad track, almost all of it east of the Mississippi River. After the Civil War, railroad construction expanded dramatically. By 1900, the United States had more than 200,000 miles of track.

THE TRANSCONTINENTAL RAILROAD

The railroad boom continued in 1862 with the Pacific Railway Act. This act gave two corporations—the Union Pacific and the Central Pacific—permission to build a transcontinental railroad. It also offered each company land along its right-of-way.

ANALYZING KEY IDEAS AND DETAILS

- 1. EVALUATING EVENTS** How did the Pacific Railway Act help expand railroad construction in the United States?
- 2. DETERMINING CENTRAL IDEAS** How did the expansion of the railroads increase the market for goods?

The Union Pacific Railroad began pushing westward from Omaha, Nebraska, in 1865. At the height of the project, the Union Pacific employed about 10,000 workers, largely Civil War veterans, Irish immigrants, frustrated miners and farmers, and ex-convicts.

The Central Pacific Railroad began as the dream of engineer Theodore Judah. He sold stock in his fledgling Central Pacific Railroad Company to four Sacramento merchants who eventually made large fortunes: Leland Stanford, Charles Crocker, Mark Hopkins, and Collis P. Huntington. Stanford became governor of California, served as a U.S. senator, and founded Stanford University. Because of a shortage of labor in California, the Central Pacific Railroad hired about 10,000 workers from China and paid them about \$1 a day.

Workers completed the transcontinental railroad in only four years, despite many physical and geographic challenges. On May 10, 1869, hundreds of spectators gathered at Promontory Summit, Utah, to watch dignitaries hammer five gold and silver spikes into the final rails that would join the Union Pacific and Central Pacific. Engineer Grenville Dodge observed:

“The two trains pulled up facing each other, each crowded with workmen. . . . The officers and invited guests formed on each side of the track. . . . Prayer was offered; a number of spikes were driven in the two adjoining rails. . . . and thus the two roads were wedded into one great trunk line from the Atlantic to the Pacific.”

—from *How We Built the Union Pacific Railway*, 1910

RAILROADS SPUR GROWTH

The transcontinental railroad was the first of many lines that began connecting the nation after the Civil War. Railroads increased the markets for many products, spurring industrial growth. Railroad companies also stimulated the economy by spending huge amounts of money on steel, coal, timber, and other materials. However, in the early 1800s, most lines had been built to promote specific cities or serve local means, especially in the East. The challenge was to consolidate all these lines into one coherent system. One of the most famous and successful railroad consolidators was Cornelius Vanderbilt, who purchased and merged three railroads to form New York Central. Within four years he had extended his control all the way to Chicago. Vanderbilt also built the Grand Central Depot in New York City.

Building railroad lines often required more money than most private **investors** could raise on their own. To encourage railroad construction across the Great Plains, the federal government gave **land grants** to many railroad companies. The companies then sold the land to settlers, real estate companies, and other businesses to raise money to build the railroads. During the 1850s and 1860s, the federal land grant system gave railroads more than 120 million acres of public land, an area larger than New England, New York, and Pennsylvania combined. Several railroads, including the Union Pacific and Central Pacific, received enough land to cover most of the cost of building their lines.

The land was only valuable if the railroads could sell it. To convince people to move west, railroads and real estate companies offered the land at low prices, provided credit to settlers, and enticed them with pamphlets, posters, and newspaper advertisements. Railroads also encouraged settlement in order to provide more freight and passenger traffic for their trains. The railroads themselves

ANALYZING PRIMARY SOURCES

- 1. CITING TEXT EVIDENCE** What about the author's description conveys the significance of the occasion being described?
- 2. DETERMINING POINT OF VIEW** What about the writer's description hints strongly that he was an actual witness to the event he describes?

MAKING CONNECTIONS TO TENNESSEE

VANDERBILT UNIVERSITY

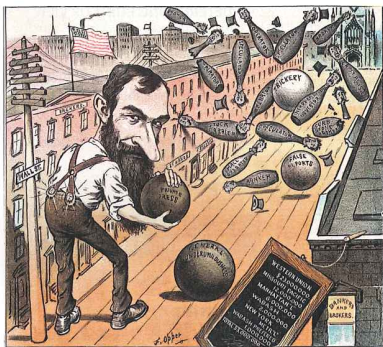
Located in Nashville, Tennessee, Vanderbilt University is so named because Cornelius Vanderbilt donated \$1 million to provide an endowment for the university in 1872. The donation was one of Vanderbilt's few acts of philanthropy, but it was one of the largest donations in history at that point. The school opened its doors to students in 1875, and accepted female students from the beginning—a rarity for the time period.

ANALYZING KEY IDEAS AND DETAILS

1. DETERMINING CENTRAL IDEAS

In what way were the land grants misused, and by whom?

2. **CITING TEXT EVIDENCE** Why was the Great Northern Railroad more successful than nearly all the others?



Railroad owners became condemned as robber barons as the American public increasingly began to suspect them of bribery, cheating, and swindling. Jay Gould bowls on Wall Street with balls labeled "Trickery" and "False Reports." The pins are labeled "Banker," "Inexperienced Investor," "Small Operator," and "Stock Broker."

1. **INTERPRETING** What does this suggest about attitudes toward Jay Gould?
2. **SUMMARIZING** What is a likely outcome of the actions of robber barons on the people represented by the bowling pins?

offered further encouragement, as settlers no longer had to migrate the entire distance on their own. They could take the train to a location near the land they bought. In all of these ways, the railroads helped close the American frontier.

✓ CHECKING FOR UNDERSTANDING

1. **EXPLAINING EFFECTS** Did the government practice laissez-faire economics when promoting railroad construction?
2. **SUMMARIZING** Who became involved in the financial support of railroads when private investment proved insufficient?
3. **UNDERSTANDING CHANGE** Besides opening new markets, how did the construction of railroads stimulate the economy?

ROBBER BARONS

GUIDING QUESTION How did government grants to build railroads result in large-scale corruption?

The great wealth many railroad entrepreneurs acquired in the late 1800s led to accusations that they swindled investors and taxpayers, bribed officials, and cheated on their contracts and debts. Perhaps the most notoriously corrupt railroad owner was Jay Gould, who practiced "insider trading" and manipulated stock prices. Bribery occurred frequently because the government was so deeply entangled in funding the railroads. Railroad investors discovered they could make more money by selling free government land grants than by operating a railroad, and some bribed political representatives to vote for more grants.

THE CRÉDIT MOBILIER SCANDAL

Corruption in the railroad industry became public in 1872 with the Crédit Mobilier scandal. Crédit Mobilier was a construction company set up by several stockholders of the Union Pacific Railroad, including Oakes Ames, a member of Congress. To convince Congress to give the railroad more grants, Ames sold other members of Congress shares at a price well below their market value.

During the election campaign of 1872, a letter appeared in the *New York Sun* listing members of Congress who had bought shares. The scandal caused widespread anger and led to the impression that railroad entrepreneurs were "robber barons"—people who loot an industry and become rich unethically.

THE GREAT NORTHERN RAILROAD

Not all railroad men were robber barons. James J. Hill built the Great Northern Railroad from Wisconsin and Minnesota to Washington state without any federal land grants or subsidies. He acquired existing rail lines and planned new railroad construction to pass by existing towns. He offered low fares to settlers who homesteaded along his route. He also identified products that were in demand in China, including cotton, textiles, and flour, and hauled those goods to Washington to ship to Asia. This way, his railroad efficiently hauled goods both east and west, instead of sending goods east and coming back empty like other railroads.

FEDERAL LAND GRANTS TO RAILROADS



GEOGRAPHIC REASONING

From 1870 to 1890, the railroads added more than 100,000 miles of track.

1. **PATTERNS AND MOVEMENT** How many major routes were there for people and goods to travel West?
2. **HUMAN-ENVIRONMENT INTERACTION** How did the locations of federal land grants to railroads influence the growth of the West?

The Great Northern became the most successful transcontinental railroad and one of the few railroads that was not eventually forced into bankruptcy.

✓ CHECKING FOR UNDERSTANDING

1. **UNDERSTANDING CONTEXT** Why did robber barons bribe people in Congress?
2. **IDENTIFYING CONNECTIONS** What would the robber barons do for members of Congress who helped them acquire land grants?
3. **SUMMARIZING** How did the American public react to the Crédit Mobilier scandal? Why?

LESSON 1 REVIEW

Time and Place

1. **EXPLAINING CAUSES** Name and briefly explain the two main causes of the enormous population growth in the United States between the years 1860 and 1910.

Building History-Social Science Analysis Skills

2. **DESCRIBING** What were the advantages of integrating railroads into one interconnected network?
3. **IDENTIFYING CAUSE AND EFFECT** How did the growth of railroads help American businesses expand?
4. **CITING TEXT EVIDENCE** How did government grants to build railroads result in large-scale corruption?

Writing About History

5. **EXPLANATORY** Between 1860 and 1890, the amount of railroad track in the United States increased dramatically. How would you expect the growth of the railroad to influence settlement patterns?

Collaborating

6. **PRESENTING** With a group, design and present a product that could have been sold during the time period covered by this lesson (about 1850–1910). It can be something practical (a pillow for napping on long railroad journeys, for example) or a luxury (a set of phonograph records that teach a foreign language). Conduct research to ensure that it could have been made using the technology of the period.