

CHAPTER  
**21**  
SECTION 1

# Note Taking Study Guide

## THE INDUSTRIAL REVOLUTION SPREADS

**Focus Question:** How did science, technology, and big business promote industrial growth?

*As you read this section in your textbook, complete the following chart to identify main ideas about the major developments of the Industrial Revolution.*

|   |  |   |
|---|--|---|
| <b>The Second Industrial Revolution</b> | <b>Transportation/<br/>Communication</b> | <ul style="list-style-type: none"><li>• _____</li><li>• _____</li><li>• _____</li></ul>   |
|   | <b>Industry/Business</b>                 | <ul style="list-style-type: none"><li>• _____</li><li>• _____</li><li>• _____</li><li>• _____</li><li>• _____</li><li>• _____</li></ul> |
|   | <b>New Powers</b>                        | <ul style="list-style-type: none"><li>• _____</li><li>• _____</li><li>• _____</li></ul>   |

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**Section Summary**

**THE INDUSTRIAL REVOLUTION SPREADS**

During the early Industrial Revolution, Britain was the world's industrial giant. Later, two new industrial powers emerged—Germany and the United States. These nations had more abundant supplies of coal, iron, and other resources than Britain. This helped them become the new industrial leaders. These nations also had the advantage of being able to follow Britain's lead, borrowing its experts and technology. The demands of an industrial society brought about many social, economic, and political changes.

Technology sparked industrial and economic growth. **Henry Bessemer** patented the process for making steel from iron. Steel became so important that industrialized countries measured their success in steel output. **Alfred Nobel** earned enough money from his invention of dynamite to fund today's Nobel prizes. Electricity replaced steam as the dominant industrial energy source. **Michael Faraday** created the first simple electric motor, as well as the first **dynamo**. In the 1870s, **Thomas Edison** made the first electric light bulb. Soon, electricity lit entire cities, the pace of city life quickened, and factories continued to operate after dark. **Interchangeable parts** and the **assembly line** made production faster and cheaper.

Technology also transformed transportation and communication. Steamships replaced sailing ships. Railroads connected cities, seaports, and industrial centers. The invention of the internal combustion engine sparked the automobile age. In the early 1900s, Henry Ford developed an assembly line to produce cars, making the United States a leader in the automobile industry. The air age began when **Orville and Wilbur Wright** flew their plane for a few seconds in 1904. Communication advances included the telegraph and telephone. **Guglielmo Marconi's** radio became the cornerstone of today's global communication network.

New technologies needed investments of large amounts of money. To get the money, owners sold **stock** to investors, growing businesses into giant **corporations**. By the late 1800s, what we call "big business" came to dominate industry. Corporations formed **cartels** to control markets.

**Review Questions**

1. What advantages did the new industrial powers have?

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2. How did the development of electricity change life in cities?

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**READING CHECK**

What two new industrial powers emerged in the mid-1800s?

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**VOCABULARY STRATEGY**

What does the word *dominate* mean in the underlined sentence? It comes from a Latin word that means "lord" or "master." Use this information about the word's origin to help you figure out what *dominate* means.

**READING SKILL**

**Identify Main Ideas** How was transportation transformed during the Industrial Revolution?

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