

CHAPTER  
**19**  
SECTION 1

## Section Summary

### DAWN OF THE INDUSTRIAL AGE

#### READING CHECK

Who formed a labor force for the Industrial Revolution?

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#### VOCABULARY STRATEGY

Find the word *statistics* in the underlined sentence. Think about your prior knowledge of this word. For example, you may have seen *statistics* shown in graphs or charts. What was their purpose in those cases? Use your prior knowledge and the context clues in the sentence to help you figure out what the word *statistics* means.

#### READING SKILL

##### Recognize Multiple Causes

Identify two causes of the agricultural revolution.

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

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

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

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

#### Review Questions

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

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

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