The Rise of the Cities

The population explosion that had begun during the 1700s continued through the 1800s. Cities grew as rural people streamed into urban areas. By the end of the century, European and American cities had begun to take on many of the features of cities today.

Medicine Contributes to the Population Explosion
Between 1800 and 1900, the population of Europe more than doubled. This rapid growth was not due to larger families. In fact, families in most industrializing countries had fewer children. Instead, populations soared because the death rate fell. Nutrition improved, thanks in part to improved methods of farming, food storage, and distribution. Medical advances and improvements in public sanitation also slowed death rates.

The Fight Against Disease
Since the 1600s, scientists had known of microscopic organisms, or microbes. Some scientists speculated that certain microbes might cause specific infectious diseases. Yet most doctors scoffed at this germ theory. Not until 1870 did French chemist Louis Pasteur (pas-TUR) clearly show the link between microbes and disease. Pasteur went on to make other major contributions to medicine, including the development of vaccines against rabies and anthrax. He also discovered a process called pasteurization that killed disease-carrying microbes in milk.

WITNESS HISTORY

London Fog
Between 1850 and 1900, London's population more than doubled, rising from about 2.6 million people to more than 6.5 million people. With the rapid population growth came increased pollution and health problems.

It was a foggy day in London, and the fog was heavy and dark. Animate (living) London, with stinging eyes and irritated lungs, was blinking, sneezing, and choking; inanimate (nonliving) London was a sooty specter, divided in purpose between being visible and invisible, and so being wholly neither.

—Charles Dickens, Our Mutual Friend

Focus Question: How did the Industrial Revolution change life in the cities?

Objectives
- Summarize the impact of medical advances in the late 1800s.
- Describe how cities had changed by 1900.
- Explain how working-class struggles led to improved conditions for workers.

Terms, People, and Places
- germ theory
- Louis Pasteur
- Joseph Lister
- mutual-aid society
- urban renewal

Note Taking
Reading Skill: Identify Supporting Details. As you read, look for the main ideas and supporting details and how they relate to each other. Use the format below to create an outline of the section.

I. Medicine and the population explosion
   A. The Fight Against Disease
   1. Louis Pasteur
   2. Joseph Lister

Vocabulary Builder
Use the information below and the following resources to teach the high-use words from this section.

High-Use Word Definition and Sample Sentence
- illuminate, p. 387: to light up; to give light to. The glow of the full moon illuminated the night sky.

Prepare to Read
- Build Background Knowledge
- Set a Purpose
- Preview

Objectives
As you teach this section, keep students focused on the following objectives to help them answer the Section Focus Question and master core content.
- Summarize the impact of medical advances in the late 1800s.
- Describe how cities had changed by 1900.
- Explain how working-class struggles led to improved conditions for workers.

Terms, People, and Places
- germ theory
- Louis Pasteur
- Joseph Lister
- mutual-aid society
- urban renewal

Note Taking
Have students read this section aloud or play the audio.

Ask students to consider the nature of city life today. Have them list the advantages and disadvantages of living in a big city.

Set a Purpose
Read the selection aloud or play the audio. Ask Based on clues in the picture and quote, what was the air quality in London like? (It wasn't very good because people's eyes were stinging, their lungs were irritated, and they were coughing.) What would you predict was the cause of the poor air quality? (Sample: a greater number of factories caused increased pollution.)

Focus Point out the Section Focus Question and write it on the board. Tell students to refer to this question as they read. (Answer appears with Section 2 Assessment answers.)

Preview
Have students preview the Section Objectives and the list of Terms, People, and Places.

Reading and Note Taking
Have students read this section using the Paragraph Shading strategy (TE, p. T20). As they read, have students fill in the graphic organizer outlining the Rise of the Cities.
Teach

Medicine Contributes to the Population Explosion

Instruct

■ Introduce Ask students to find the term germ theory (in blue). Ask Why was it important to know that certain microbes cause disease? (Once the link was known, scientists and doctors could work on finding preventions and cures.)

■ Teach Ask: What happened to the population of Europe between 1800 and 1900? Why? (The population more than doubled due to a declining death rate.) Why was improved hospital care especially important to the poor? (While wealthier patients could be treated at home, the poor were admitted to hospitals that were often unsanitary. Improved care would increase their rate of recovery and survival.)

■ Quick Activity Read aloud Nightingale’s statement under the heading Hospital Care Improves: “The very first... no harm.” Ask students to work in small groups and decide whether they agree or disagree with her statement. Use the Numbered Heads strategy (TE, p. T26) and have students share their responses with the class.

Independent Practice

Ask students to write a paragraph describing how the population growth in Europe was due, in part, to medical advances. Have students think about the impact of these advances both in the 1800s and today.

Monitor Progress

As students fill in their outlines, circulate to make sure they understand how main ideas and supporting details relate to each other. For a completed version of the outline, see Note Taking Transparencies, 148

Answers

BIOGRAPHY She improved sanitation by insisting that military and medical staff clean barracks, dig latrines, do laundry, and get the wounded off the bare ground where they lay. Better diet, better hygiene, advances in medicine, and improved sanitation

306 Life in the Industrial Age

In the 1860s, the German doctor Robert Koch identified the bacterium that caused tuberculosis, a respiratory disease that claimed about 30 million human lives in the 1800s. The search for a tuberculosis cure, however, took half a century. By 1914, yellow fever and malaria had been traced to microbes carried by mosquitoes.

As people understood how germs caused disease, they bathed and changed their clothes more often. In European cities, better hygiene helped decrease the rate of disease.

Hospital Care Improves: In the early 1800s, anesthesia was first used to relieve pain during surgery. The use of anesthesia allowed doctors to experiment with operations that had never before been possible.

Yet, throughout the century, hospitals could be dangerous places. Surgery was performed with dirty instruments in dank rooms. Often, a patient would survive an operation, only to die days later of infection. For the poor, being admitted to a hospital was often a death sentence. Wealthy or middle-class patients insisted on treatment in their own homes.

“...no harm.” as an army nurse during the Crimean War, Nightingale insisted on better hygiene in field hospitals. After the war, she worked to introduce sanitary measures in British hospitals. She also founded the world's first school of nursing.

Florence Nightingale

When Florence Nightingale (1820–1910) arrived at a British military hospital in the Crimea in 1854, she was horrified by what she saw. The sick and wounded lay on bare ground. With no sanitation and a shortage of food, some 60 percent of all patients died. Nightingale was a fighter. Bullying the military and medical staff, she sent her own medical supplies, cleaned barracks, dug latrines, did laundry, and caring for the wounded. Six months later, the death rate had dropped to 2 percent. Back in England, Nightingale was hailed as a saint. Ballads were even written about her. She took advantage of her popularity and connections to pressure the government for reforms. How did Nightingale achieve reforms in British army hospitals?

WITNESS HISTORY VIDEO

Watch The Jungle: A View of Industrialization (Solutions for All Learners) video program to learn more about city life during the industrial age.

City Life Changes

As industrialization progressed, cities came to dominate the West. City life, as old as civilization itself, underwent dramatic changes in Europe and the United States.

City Landscapes Change Growing wealth and industrialization allowed the basic layout of European cities. City planners created spacious new squares and boulevards. These lined the avenues with government buildings, offices, department stores, and theaters.

The most extensive urban renewal, or rebuilding of the poor areas of a city, took place in Paris in the 1850s. Georges Haussmann, chief planner for Napoleon III, destroyed many tangled medieval streets full of tenement housing. In their place, he built wide boulevards and splendid public buildings. The project put many people to work, decreasing the threat of social
illuminated areas much more livable. First gas lamps, and then electric street lights New York described by Riis: working class in Britain (right) were similar to those in an effort to expose the horrible living conditions of the city "Despite efforts to improve cities, urban life remained Slum Conditions Despite efforts to improve cities, urban life remained harsh for the poor. Some working-class families could afford better clothing, newspapers, or tickets to a music hall. But they went home to small, cramped row houses or tenements in overcrowded neighborhoods. In the worst tenements, whole families were often crammed into a single room. Unemployment or disease meant lost wages that could ruin a family. High rates of crime and alcoholism were a constant curse. Conditions had improved somewhat from the early Industrial Revolution, but slums remained a fact of city life. City Life Changes Wash Your Hands 1848, physician Ignaz Semmelweis of Hungary noted that fewer in the short-term: Congress passed laws mandating the inspection of meat and banning the use of filth in meat products; long term: better conditions for workers) Have they also considered why Sinclair’s book remains relevant today? (Sample: It shows how a book can eventually lead to reform.) Independent Practice Viewpoints To help students better understand that some people found cities exciting while others found them frightening, have them read the selection Looking at London in the 1820s and complete the worksheet. Monitor Progress Point out the photos of the working class and the moviegoers in this section. To help students review the section, ask them to explain how the images illustrate the positive and negative aspects of city life.
The Working Class Advances

Instruct

■ Introduce Ask students to read the introductory sentences and two blank headings under The Working Class Advances. Have students predict what they will learn under each heading. Then have them read to find out whether their predictions were accurate.

■ Teach Ask Why did workers form unions? to improve working conditions, reduce long hours, and increase low pay? Have students rank the reform laws that are discussed in their text in order of their importance. Using the Idea Wave strategy (TE, p. T22) ask students to explain why they ranked the reforms in this particular order.

■ Analyzing the Visuals Refer students to the Cause-and-Effect chart on this page. Use the Think-Write-Pair-Share strategy (TE, p. T23) and ask students to list concrete ways that the Industrial Revolution continues to impact their daily lives.

Independent Practice

Primary Source

The People Who Determine the Look and Feel of Our Communities

Teaching Resources, Unit 3, p. 8

Monitor Progress

Checkpoint How did industrialization change the face of cities?

Answers

With industrialization came more jobs, urban renewal, better sanitation, and entertainment, but it also created slum conditions and higher crime rates.

Analyze Cause and Effect Sample: Social effects include the expansion of the middle class and public education. Economic effects include the growth of labor unions and the rise of big business.

Connections to Today

The Lure of the City Despite its drawbacks, cities attracted millions. New residents were drawn as much by the excitement as by the promise of work. For instance, too, cities were centers of action. Music halls, opera houses, and theaters provided entertainment for every taste. Museums and libraries offered educational opportunities. Sports, from tennis to horseshoe boxing, drew citizen of all classes. Few of those enjoyment were available in country villages.

The Working Class Advances

Workers tried to improve the harsh conditions of industrial life. They protested low wages, long hours, unsanitary conditions, and the constant threat of unemployment. At first, business owners and governments tried to silence protesters. By mid-century, however, workers began to make progress.

Labor Unions Begin to Grow Workers formed mutual-aid societies, self-help groups to aid sick or injured workers. Men and women joined socialist parties or organized unions. The revolutions of 1830 and 1848 left vivid images of worker discontent, which governments could not ignore.

By the late 1860s, most Western countries had granted all men the vote. Workers also won the right to organize unions to bargain on their behalf. Germany legalized labor unions in 1869. Britain, Austria, and France followed. By 1890, Britain had about three million union members, and Germany had about two million. In France, membership grew from 140,000 in 1840 to over a million in 1912.

The main tactic of unions was the strike, or work stoppage. Workers used strikes to demand better working conditions, wage increases, or other benefits from their employers. Violence was often a result of strikes, particularly if employers tried to continue operating their businesses without the striking workers.

Pressured by unions, reformers, and working-class voters, governments passed laws to regulate working conditions. Early laws forbade employers to hire children under the age of ten. Later, laws were passed outlawing child labor entirely and banning the employment of women in mines. Other laws limited work hours and improved safety. By 1900, British coal miners had won an eight-hour day, setting a standard for workers in other countries. In Germany, and then elsewhere, Western governments established old-age pensions, as well as disability assurance for workers who were hurt or became ill. These programs protected workers from poverty once they were no longer able to work.
and helped boost union membership. Peaks of unemployment brought desperate hardships to industrial workers who barely scraped by during the economic slump of the late 1800s. Women received less than half the pay of men doing the same work. Farm laborers lived in poverty, with unskilled laborers earning less than skilled workers. Women were paid less than men, and the working conditions were much worse.

Wages varied throughout the industrialized world, with unskilled laborers earning less than skilled workers. Women received less than half the pay of men doing the same work. Farm laborers lived in poverty, with unskilled laborers earning less than skilled workers. Women were paid less than men, and the working conditions were much worse.

Standards of Living Rise
Wages varied throughout the industrialized world, with unskilled laborers earning less than skilled workers. Women received less than half the pay of men doing the same work. Farm laborers lived in poverty, with unskilled laborers earning less than skilled workers. Women were paid less than men, and the working conditions were much worse.

Overall, though, standards of living for workers did rise. The standard of living measures the quantity and availability of necessities and comforts in society. Families ate more varied diets, lived in better homes, and dressed in inexpensive, mass-produced clothing. Advances in medicine improved health. Some workers moved to the suburbs, traveling to work on subways and trolleys. Still, the gap between workers and the middle class widened.

Checkpoint: How did workers try to improve their living and working conditions?

Family Life and Leisure
With standards of living rising, families could pursue activities such as going to the movies. This 1906 French poster (left) advertising the Cinematographe Lumière (from right), the most successful motion-picture camera and projector of its day. What does the clothing of the people in the poster suggest about their social rank?

Assess and Reteach

Assess Progress

- Have students complete the Section Assessment.
- Administer the Section Quiz.

Teaching Resources, Unit 3, p. 3

- To further assess student understanding, use
- Progress Monitoring Transparencies, p. 87

Reteach

If students need more instruction, have them read the section summary.

- Reading and Note Taking Study Guide, p. 107
- Adapted Reading and Note Taking Study Guide, p. 107
- Spanish Reading and Note Taking Study Guide, p. 107

Extend

Have students scan newspaper headlines for present-day examples of the pros and cons of city life, the effect of technologies on daily life, or the role of labor unions.

Answers

Caption: They were middle-class people who could afford nice clothes and leisure activities.

Through protest and pressure on the government, workers demanded better transportation, street lights, new sewer systems, and reduced working hours. What laws allowed workers to unionize, expanded the right to vote, regulated working conditions, limited child labor, and set up pensions and disability insurance?

For additional assessment, have students access Progress Monitoring Online at Web Code nba-2121.

Progress Monitoring Online

Year 2012 with vocabulary practice

Web Code nba-2121

2. Reading Skill: Identify Supporting Details

- Use your completed outline to answer the Focus Question: How did the Industrial Revolution change life in the cities?

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