

Economic Growth

Essential Question

What effects did the Industrial Revolution have on the U.S. economy?

Reading Guide

Content Vocabulary

cotton gin (p. 306)	capitalism (p. 307)
interchangeable parts (p. 306)	capital (p. 307)
patent (p. 306)	free enterprise (p. 307)
factory system (p. 306)	

Academic Vocabulary

contribute (p. 305)	element (p. 307)
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Key People and Events

Industrial Revolution (p. 305)

Eli Whitney (p. 306)

Reading Strategy

Taking Notes As you read, use a diagram like the one below to identify the major elements of the free enterprise system.



American Diary

Lucy Larcom started working in the textile mills of Lowell, Massachusetts, at 11 years of age. She later recalled her life in the factory. "I had learned to do a spinner's work, and I obtained permission to tend some frames that stood directly in front of the river-windows with only them and the wall behind me, extending half the length of the mill,—and one young woman beside me. . . . I was, when with strangers, rather a reserved girl; so I kept myself occupied with the river, my work, and my thoughts."

—from *A New England Girlhood*

Winslow Homer painted young women heading to work in the mills.

The Growth of Industry

Main Idea New technology changed the way things were made.

History and You Do you know someone who works in a factory? What is his or her job like? Read to learn how new technology spurred the Industrial Revolution in New England.

Lucy Larcom was one of the many young women who worked in the new industries that developed in the Northeast during the early 1800s. Since colonial times, most people lived and worked on farms. Thus, workers were in short supply for jobs outside of the home. To make up for this lack of workers, Americans developed tools that made their jobs easier and more efficient.

People working in their homes or in workshops made cloth and most other goods. Using hand tools, they made furniture, farm equipment, household items, and clothing.

In the mid-1700s, however, the way goods were made began to change. These changes appeared first in Great Britain. British inventors created machinery to perform some of the work involved in cloth making, such as

spinning. Because these machines ran on waterpower, British cloth makers built textile mills along rivers and installed the new machines in these mills. People left their homes and farms to work in the mills and earn wages. This historic development is so important that it is known as the **Industrial Revolution**.

Industrial Revolution in New England

The Industrial Revolution took root in the United States around 1800. The changes appeared first in New England. The region's geography **contributed**, or added, to the development of the Industrial Revolution.

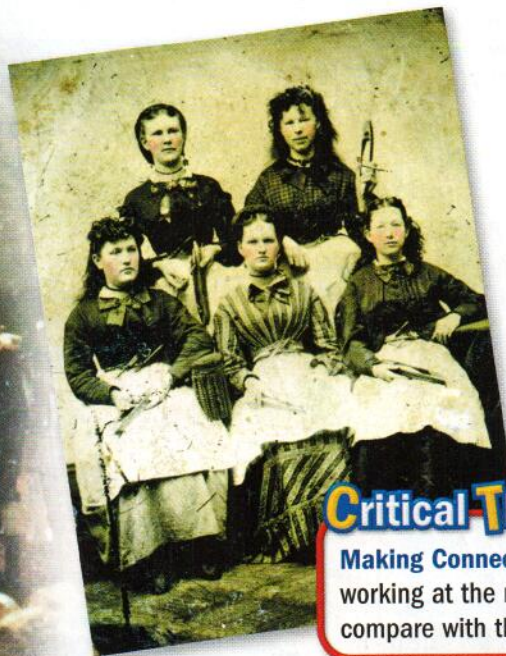
First, farming was difficult with New England's poor soil. Many people willingly gave up farming to find work elsewhere. Second, New England had rivers and streams to provide the waterpower needed to run the machines in the new factories. Third, New England was close to other resources, including coal and iron deposits in Pennsylvania. Fourth, the area had many ports. Raw materials like cotton, as well as finished goods like cloth, were shipped through these ports.

If You Were There

Lowell Mill Girls

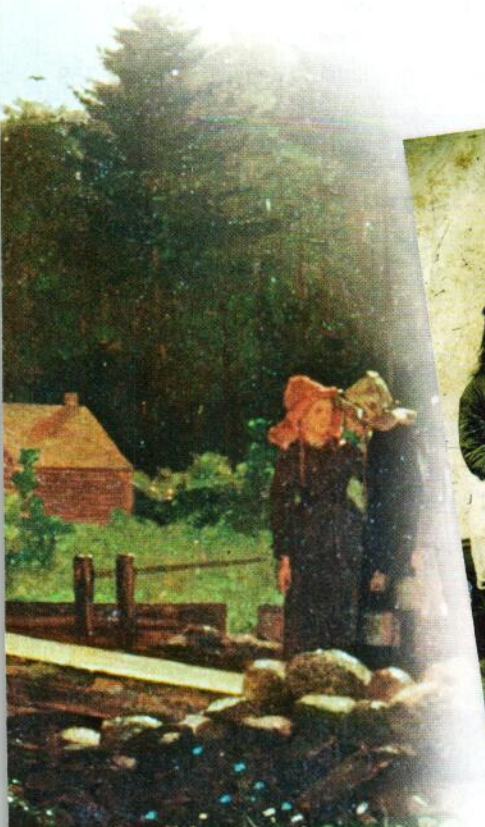
On the Job You work long hours—from sunrise to sunset. The work is boring, and you usually perform one task over and over again. You make about \$3 per week, and half of your pay is used to rent a room and to buy food. You live in a company-owned boardinghouse. You are required to be in bed by ten o'clock and to attend church on Sunday. You can read, write letters, and attend lectures, but you are not allowed to drink alcohol or play cards.

◀ Lowell Girls, 1840s



Critical Thinking

Making Connections What would you like or dislike about working at the mill? How do you think your job at Lowell would compare with the kinds of jobs young people have today?



New Technology

The invention of new machines and technology led to the Industrial Revolution. For example, the spinning jenny, the water frame—which spun thread—and the power loom—which wove the thread into cloth—allowed many steps in making cloth to be done by machine. These machines saved both time and money.

In 1793 **Eli Whitney** of Massachusetts invented the **cotton gin**. The cotton gin was a simple machine that quickly and efficiently removed the seeds from the cotton fiber.

Whitney also started using **interchangeable parts**. These were identical machine parts that could be put together quickly to make a complete product. These parts also made machine repair easier. Interchangeable parts allowed for the production of different kinds of goods on a large scale. This reduced the price of the goods.

Patents and Factories

In 1790 Congress passed a patent law to protect the rights of inventors. A **patent** gives

an inventor the sole legal right to the invention and its profits for a certain period of time.

Although the British tried to keep their new industrial technology a secret, a few British workers brought their knowledge to the United States. One such worker was Samuel Slater. He memorized the design of the machines used in the British factory in which he worked.

Once in the United States, Slater took over the management of a cotton mill in Pawtucket, Rhode Island. There he duplicated the British machines that made cotton thread. Women working in their homes then wove the thread into cloth. Slater's mill marked an important step in the Industrial Revolution in the United States.

Francis Cabot Lowell improved on Slater's process in 1814. In Lowell's textile plant in Massachusetts, all the stages of cloth making were performed under one roof. Lowell began the **factory system**, where all manufacturing steps are brought together in one place to increase efficiency.

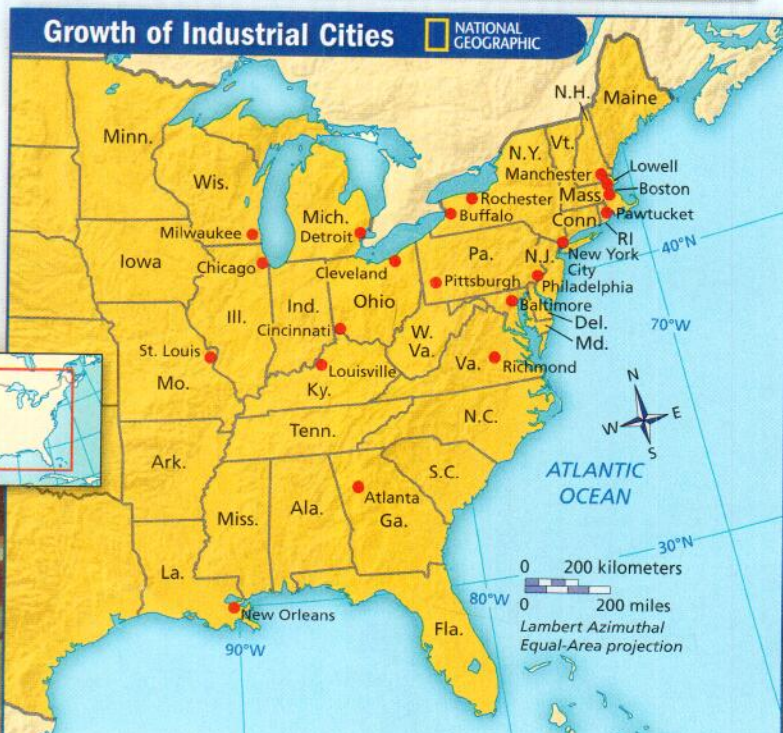
Primary Source Technology and Industry

Growth of Industry New England was the perfect location for the Industrial Revolution to begin in the United States because its rushing rivers provided power to run the machinery. The industrial growth that began in New England spread to other areas of the country. By 1870, the nation's industrial cities were growing.

Slater Mill in Pawtucket, Rhode Island Because Britain prohibited the export of textile machinery, Slater had to design his factory and build the machines from memory. It was an immediate success. ▼

"If thou canst do this thing, I invite thee to come to Rhode Island, and have the credit of introducing cotton-manufacture into America."

—Moses Brown, in a letter to Samuel Slater in 1789



Free Enterprise

Industrial growth requires an economic system that allows competition to flourish with little government interference.

Capitalism is the economic system of the United States. Under capitalism, individuals put their **capital**, or money, into a business, hoping that the business will be successful and make a profit.

Free enterprise is another term used to describe the American economy. In a free enterprise economy, people are free to buy, sell, and produce whatever they want. They can also work wherever they wish. The major **elements**, or parts, of free enterprise are competition, profit, private property, and economic freedom. Business owners have the freedom to produce the products that they think will sell the best and be the most profitable. In a free enterprise economy, buyers also compete to find the best products at the lowest prices.

Reading Check **Describing** How did New England's physical geography support the growth of industries?

Agriculture Expands

Main Idea Agriculture expanded and remained the leading occupation of most Americans in the 1800s.

History and You Do any of your relatives own and work on a farm? Read to learn how agriculture expanded in the 1800s.

Although many New Englanders went to work in factories during the first half of the 1800s, agriculture remained the country's leading economic activity. Most Americans still lived and worked on farms.

In the Northeast, farms were small and worked by families. Farmers in the Northeast usually marketed their produce locally. In the South, cotton production rose dramatically. The demand for cotton grew steadily with the development of the textile industries of New England and Europe.

History ONLINE

Student Web Activity Visit glencoe.com and complete the Chapter 10 Web Activity about the Industrial Revolution.

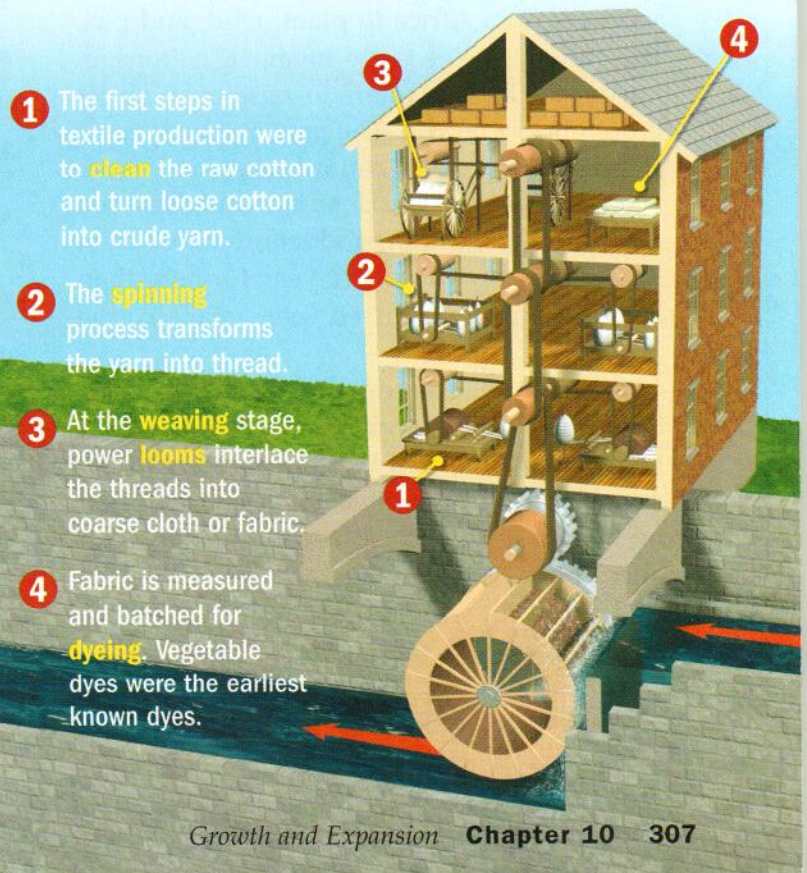
Textile Mill The Lowell factory system was designed to bring work and workers together. A typical Lowell textile mill in 1830 housed 4,500 spindles, 120 power looms, and more than 200 employees under one roof.



◀ A water frame was used to spin thread.

Critical Thinking

Determining Cause and Effect Did the increase of factories lead to better technology, or did better technology lead to more factories? Explain.

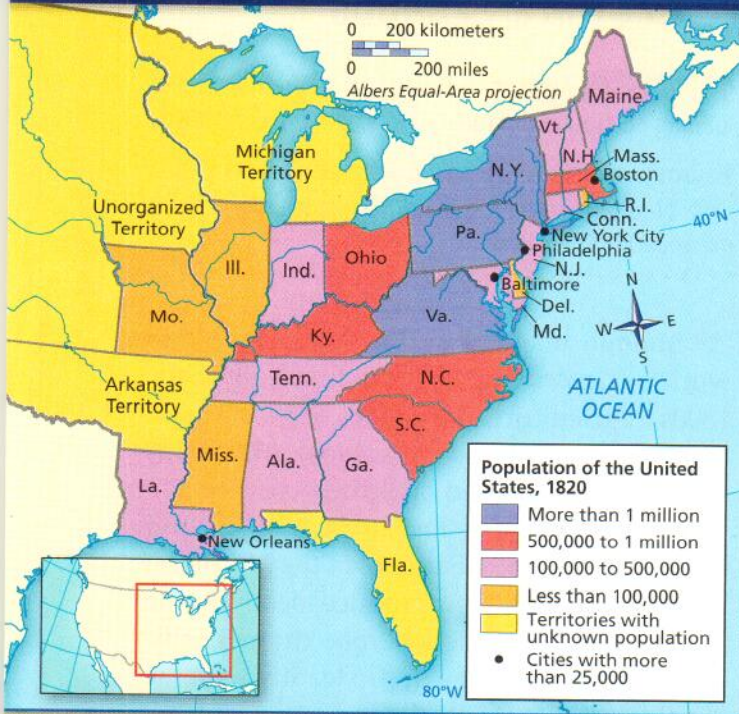


1 The first steps in textile production were to **clean** the raw cotton and turn loose cotton into crude yarn.

2 The **spinning** process transforms the yarn into thread.

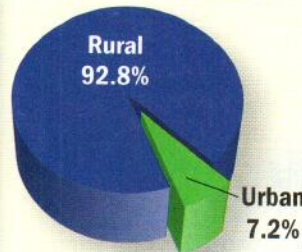
3 At the **weaving** stage, power **looms** interlace the threads into coarse cloth or fabric.

4 Fabric is measured and batched for **dyeing**. Vegetable dyes were the earliest-known dyes.



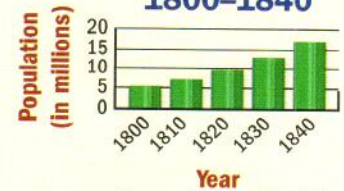
The tremendous growth in population helped spur the growth of industry.

Urban and Rural Population, 1820



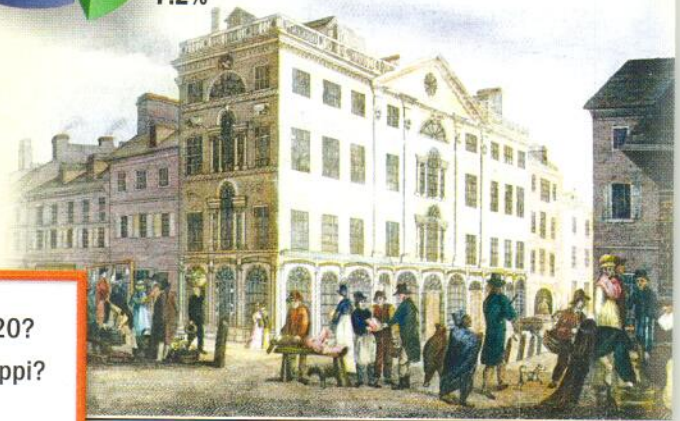
By the Numbers

Population Growth, 1800–1840



Source: Historical Statistics of the United States.

▼ Philadelphia, 1799



Map Skills

- Place** Which states had a population of more than 1 million in 1820?
- Regions** Which state had a larger population, Louisiana or Mississippi?

Maps in Motion See StudentWorks™ Plus or glencoe.com.

Southern plantation owners used enslaved workers from Africa to plant, tend, and pick the cotton. The recently invented cotton gin encouraged the planters to raise even larger amounts of the crop. The new machine made it possible to clean cotton faster and more cheaply than could be done by hand. Between 1790 and 1820, cotton production soared from 3,000 bales produced per year to more than 300,000 bales produced per year in the South.

Agriculture also expanded in the West. Southern farmers seeking new land moved west to plant cotton. Western farmers in the region north of the Ohio River concentrated on raising pork and cash crops such as corn and wheat.

Reading Check **Contrasting** How was agriculture different in the Northeast than in the South?

Economic Independence

Main Idea The growth of factories and trade led to the development of corporations and cities.

History and You If you had your choice, would you prefer living in the city or in the country? Why? Read to learn about the growth of cities in the 1800s.

Small investors, such as shopkeepers, merchants, and farmers, financed most new businesses. These people invested their money in hopes of earning profits if the new businesses succeeded. Low taxes, minimum government regulations, and competition encouraged people to invest in new industries.

Corporations Develop

Large businesses called corporations began to develop rapidly in the 1830s when legal obstacles to their formation were removed.

The rise of these new corporations made it easier to sell stock—shares of ownership in a company—to finance improvement and development.

Cities Come of Age

The growth of factories and trade led to the growth of towns and cities. Many cities developed along rivers because factories could take advantage of the water power and ship goods to markets more easily. Older cities such as New York, Boston, and Baltimore also grew as centers of commerce and trade.

Along New York City's South Street, shipping piers extended for 3 miles (4.8 km). The value of merchandise shipped from these piers rose from \$84 million in 1825 to \$146 million in 1836. An English traveler wrote of the busy New York City waterfront:

PRIMARY SOURCE

"Every thought, word, look, and action of the multitude seemed to be absorbed by commerce."

—quoted in *The Growing Years*, by Margaret L. Coit

Moving westward, towns such as Pittsburgh, Cincinnati, and Louisville profited

from their locations on major rivers. As farmers in the West shipped more of their products by water, these towns grew rapidly.

Cities and towns looked quite different from modern urban areas. Buildings were made of wood or brick. Streets and sidewalks were unpaved, and barnyard animals often roamed freely. There were no sewers to carry away waste and dirty water, so the danger of diseases such as cholera and yellow fever was very real. In 1793, for example, a yellow fever epidemic in Philadelphia killed thousands.

Fire posed another threat to cities. Sparks from a fireplace or chimney could easily ignite a wooden building and spread to others. Few towns or cities had organized fire companies, thus fires could be disastrous.

Cities and towns offered many opportunities, such as a variety of jobs to choose from and steady wages. As cities grew, libraries, museums, and shops were built, providing people with places to enjoy during their leisure time. For many, the jobs and attractions of city life outweighed any of the dangers.

 **Reading Check** **Analyzing** Why were rivers important for the growth of cities?

Section 1 Review

History ONLINE
Study Central™ To review this section, go to glencoe.com.

Vocabulary

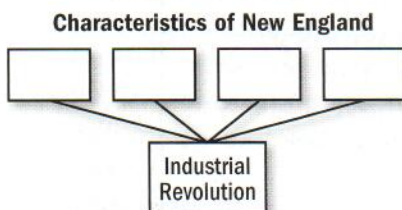
1. Define each term in a sentence:
contribute, cotton gin, interchangeable parts, patent, factory system, capitalism, capital, free enterprise, element.

Main Ideas

2. **Summarizing** How did inventions like the cotton gin and interchangeable parts revolutionize the textile industry?
3. **Explaining** Why were Southern plantations able to increase their cotton production between 1790 and 1821?
4. **Specifying** What conditions encouraged people to invest in the new businesses?

Critical Thinking

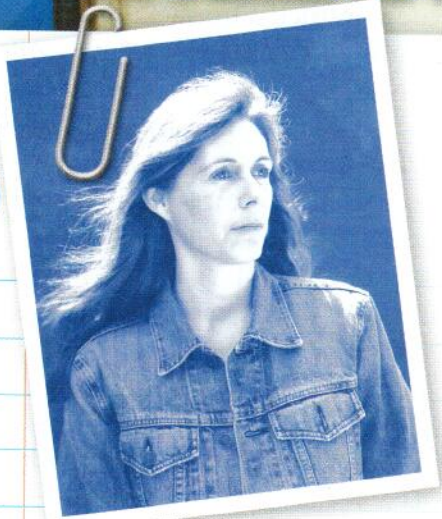
5. **Determining Cause and Effect** Use a diagram like the one below to identify why the Industrial Revolution first began in New England.



6. **Personal Writing** It is 1830, and you have just moved to New York City. Write a letter to your friends back on the farm describing what your new life is like.

7. **Answer the Essential Question**
Essential Question What effects did the Industrial Revolution have on the U.S. economy?

America's LITERATURE



Meet the Author

Laurie Halse Anderson (1961–) began researching *Fever 1793* after reading a newspaper article about an epidemic that killed 10 percent of the population of Federalist-era Philadelphia. During her studies, she examined the politics, food, religion, and medicine of the period. This information helped her create realistic details in the life of Mattie, the main character in the story.

Building Background

In *Fever 1793*, Laurie Halse Anderson tells the story of Mattie, a young girl living through the horrors of a yellow fever outbreak in Philadelphia. At the time, Philadelphia was the young country's largest city and capital. During the epidemic, the American government, along with many residents, fled the city. Throughout the novel, Anderson weaves historical facts with the fictional story. In the following scene, Mattie wanders the city alone after the death of her grandfather. While reading, pay attention to the actions that depict Mattie's personal strength and maturity.

Vocabulary

acquainted familiar

shift dress

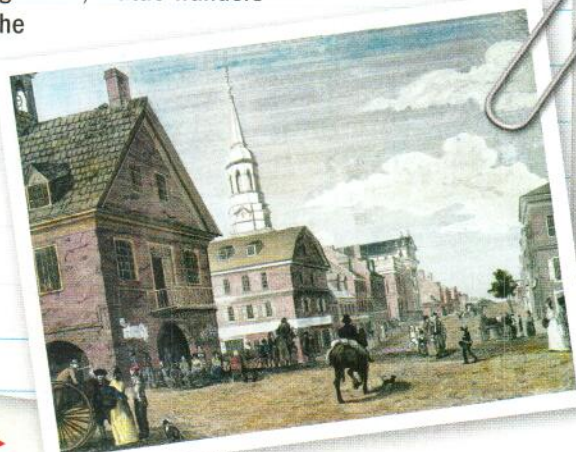
tethered tied

exorbitant very high

thrive gain in health

quill feather shaft

pestilence contagious disease



Second Street in Philadelphia, 1790s ▶

FEVER 1793

Laurie Halse Anderson

My feet moved, taking me up one street and down the next. I didn't see another person for blocks, not even a grave digger or a physician. The sound of my shoes tapping across the cobblestones echoed down the street like a latecomer sneaking into church. I walked past the homes of people **acquainted**

with my family. They were all deserted. My **shift** darkened with sweat. Surely I wasn't the only person left in Philadelphia?

When I came upon the open windows of the *Federal Gazette* office, it was a shock. A horse was **tethered** by the door. I stumbled through the door, eager for a friendly face.

"Can I help you?"

"It's me, Mr. Brown. William Cook's granddaughter."

The printer looked up from his desk. The dark circles under his eyes and lines of worry across his brow made him look as if he had aged years in the course of a month.

"What do you need, Matilda? I've no time for social calls today."

I hesitated. What could Mr. Brown do? I couldn't work a press; he couldn't bring Grandfather back from the grave.

"Please, Sir," I said. "I would like to place an advertisement in your newspaper. I'm searching for my mother. She's gone."

Mr. Brown pulled a stained kerchief out of his trouser pocket and rubbed it over his face and neck.

"Matilda, there is nothing I'd rather do than run an advertisement for your mother. But look about you." He spread his arms to take in the shop. "There is hardly any paper to be had for a hundred miles. The *Gazette* is the last paper being printed in the city, and I have to print on half-sheets. Five other newspapers have closed down. I wish I could flee myself."

He paused and looked out the window. I thought he had forgotten me.

"But I must stay. This paper is the only method of communication left in the city. I must print physicians' notices, orders from the mayor . . ."

"Mr. Brown? Sir?"

He took a deep breath and looked up.

"In the beginning of August, this was the largest city in the United States. Forty thousand people lived here. Near as I can

tell," he pointed to the jumble of notes and letters on the desk before him, "more than half the city has fled, twenty thousand people."

"How many dead, Sir?"

"More than three thousand, enough to fill house after house, street after street."

*I'm searching for my mother.
She's gone.*

"I went to the market, but found no food," I said.

"Few farmers dare come into town. They charge **exorbitant** prices for their wares, and get whatever they ask," he said bitterly. "Those who don't die of the fever are beginning to starve. You've seen the rats?"

I nodded.

"The rats **thrive**. I should write that." He dipped a **quill** into the ink pot and scribbled a note. "The only creatures to benefit from this **pestilence** are the rats. Go home, Matilda, take my regards to your grandfather, but tell him he must lock all the doors and pray for frost."

I started to tell him what had happened, but a man burst through the door waving a letter and shouting. Mr. Brown shooed me from his shop with a wave of his hand. No matter. Telling him wouldn't bring Grandfather back, and it was clear he couldn't help me.

Analyzing Literature

1. Respond and Connect

- How might Mattie feel at the beginning of the passage as she walks the streets alone?
- How does Mattie feel as she encounters Mr. Brown?

2. Recall and Interpret

- What is Mr. Brown's occupation?
- Why is a newspaper important during this plague?

3. Evaluate

What actions show Mattie's maturity during this crisis?