NAME_____ DATE _____ CLASS _____

networks

North and South

Lesson 1 The Industrial North

ESSENTIAL QUESTION

How does technology change the way people live?

GUIDING QUESTIONS

1. ***How did technology and industry change during the 1800s?***
2. ***What changes made agriculture more profitable in the 1830s?***

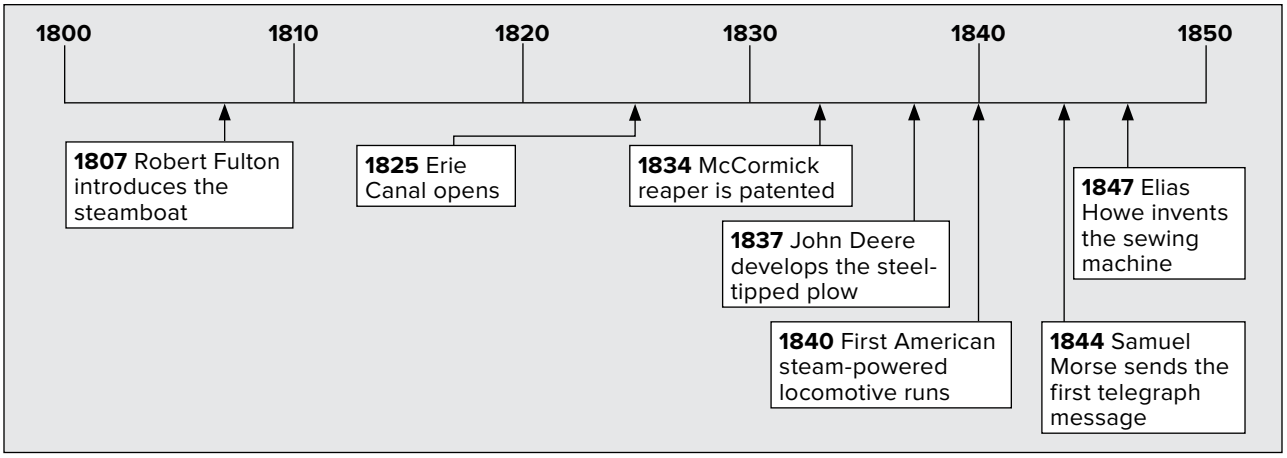
Terms to Know

clipper ship ship with sleek hulls and tall sails that "clipped" time from long journeys

Morse code a system of dots and dashes that represent the alphabet

telegraph a device that used electric signals to send messages

When did it happen?



What do you know?

In the first column, answer the questions based on what you know before you study. After this lesson, complete the last column.

Now...		Later...
	What was one change as a result of the Erie Canal?	
	In which part of the country was there more industry?	
	What was the telegraph?	

Lesson 1 The Industrial North, *Continued*

Technology and Industry

The early 1800s saw many **innovations** in industry, or the production of goods. Innovations are improved ways of doing things. There were new machines and new ways to use them. The ways in which Americans worked, traveled, and communicated with each other changed as well. Much of this took place in the North.

At the start of the 1800s, most products were made one at a time. A worker would make a product from start to finish. Innovations in industry changed that way of working.

Industrialization in the 1800s

Phase 1	Employers divided tasks among workers, who specialized in one step.
Phase 2	Employers built factories to bring specialized workers together.
Phase 3	Workers used machinery to do their work.

Mass production of cotton cloth began in New England in the early 1800s. Mass production means using machinery to make goods in large numbers. Elias Howe invented the sewing machine in 1846. These changes **transformed,** or changed, the clothing industry. Workers could now make more clothing faster. Other changes transformed other industries. By 1860, the Northeast's factories made at least two-thirds of the country's manufactured goods.

Transportation improved. Between 1800 and 1850, crews built thousands of miles of roads and canals. The canals connected lakes and rivers to make new shipping routes. In 1807, Robert Fulton introduced the steamboat. Steamboats carried goods and people cheaply and quickly.

By 1860 about 3,000 steamboats traveled major rivers and canals, as well as the Great Lakes. Cincinnati, Buffalo, and Chicago grew because they were on major shipping routes.

Sailing was still an important way to travel. A new, faster ship was developed in the 1840s. Called **clipper ships,** they could sail as fast as most steamships at that time.

The railroad was developed. The first steam-powered railroad engine began running in Britain in 1829.

Explaining

1. List three changes in the way goods were made during the early 1800s.

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Determining Cause and Effect

2. What caused the growth of cities between 1840 and 1860?

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Lesson 1 The Industrial North, *Continued*

Determining Cause and Effect

3. What were some effects of the railroad on the country?

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Reading Check

4. What effect did canals and railways have on transportation from the East to the Midwest?

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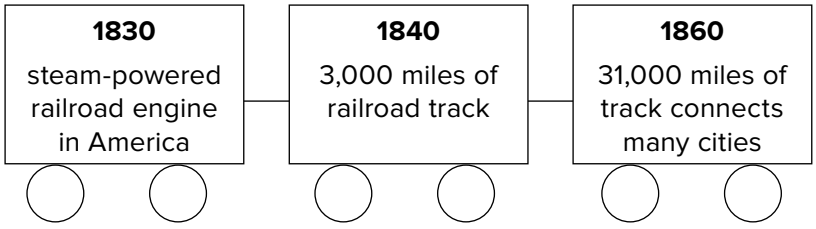
Peter Cooper built the first American steam-powered railroad engine in 1830. By 1860, there were about 31,000 miles (19,220 km) of track. These tracks were mostly in the North and Midwest. Rail lines connected many cities. They united the Midwest and the East.

Growth of Railroads in 1800s



The Erie Canal opened in 1825. With the railroads and the canal, farm products could be moved directly from the Midwest to the East. Farmers and manufacturers could move goods faster and more cheaply. As a result, people could buy them at lower prices than in the past.

The railroads also played an important role in the settlement of the Midwest and the growth of business there. People moved to Ohio, Indiana, and Illinois. New cities and industries developed in the area.

The growth of industry and the speed of travel created a need for faster ways to send messages great distances. Samuel Morse invented the **telegraph**—a machine that uses electric signals to send messages. In 1844 Morse sent his first message.

Telegraph companies formed. Their operators used **Morse code** to send messages. Telegraph lines were put up across the country. By 1852, there were about 23,000 miles (37,015 km) of telegraph lines in the United States.

Farming Innovations

In the early 1800s, few farmers were willing to settle in the West. They were worried that they would not be able to plow on the Great Plains or the prairie. They worried that the soil would not be good enough to grow crops.

Lesson 1 The Industrial North, *Continued*

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Three inventions of the 1830s helped farmers overcome these difficulties in farming the land. Because of this, more people moved to the Midwest.

One of these inventions was the steel-tipped plow developed by John Deere in 1837. This plow easily cut through the hard prairie ground. Also important were the reaper and the thresher, invented by Cyrus McCormick. The reaper sped up the harvesting, or gathering, of wheat. The thresher quickly separated the grain from the stalk, or stem, of the wheat.

McCormick's reaper greatly increased the amount of grain a farmer could harvest. Because farmers could harvest more, they could plant more. Growing wheat brought more money than before. Raising wheat became the main economic activity on the Midwestern prairie.

Because of the new machines and the railroads, farmers could plant more crops. Midwestern farmers grew wheat and shipped it east by train and canal barge. Northeast and Middle Atlantic farmers grew more fruits and vegetables.

Despite improvements in farming, the North turned away from farming and toward industry. The number of people working in factories continued to rise.

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Check for Understanding

List two inventions that transformed the way goods and people were moved in the 1800s.

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What are two reasons that farmers were able to make more money growing wheat?

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FOLDABLES®

5. Place a three-tab Foldable along the dotted line. Title the anchor tab *Three Inventions*. Label tabs: *Steel-tipped Plow*, *Mechanical Reaper*, *Thresher*. On the tabs, describe how the inventions helped farmers.

Reading Check

6. What sped up the harvest of wheat?

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FOLDABLES®

7. Place a one-tab Foldable along the dotted line. Create a memory map. Write *Technology Changed Lives in the 1800s* in the middle. Draw four arrows around the titles. Write words or phrases about the changes industrialization brought. Use this Foldable to help you complete the Check for Understanding.