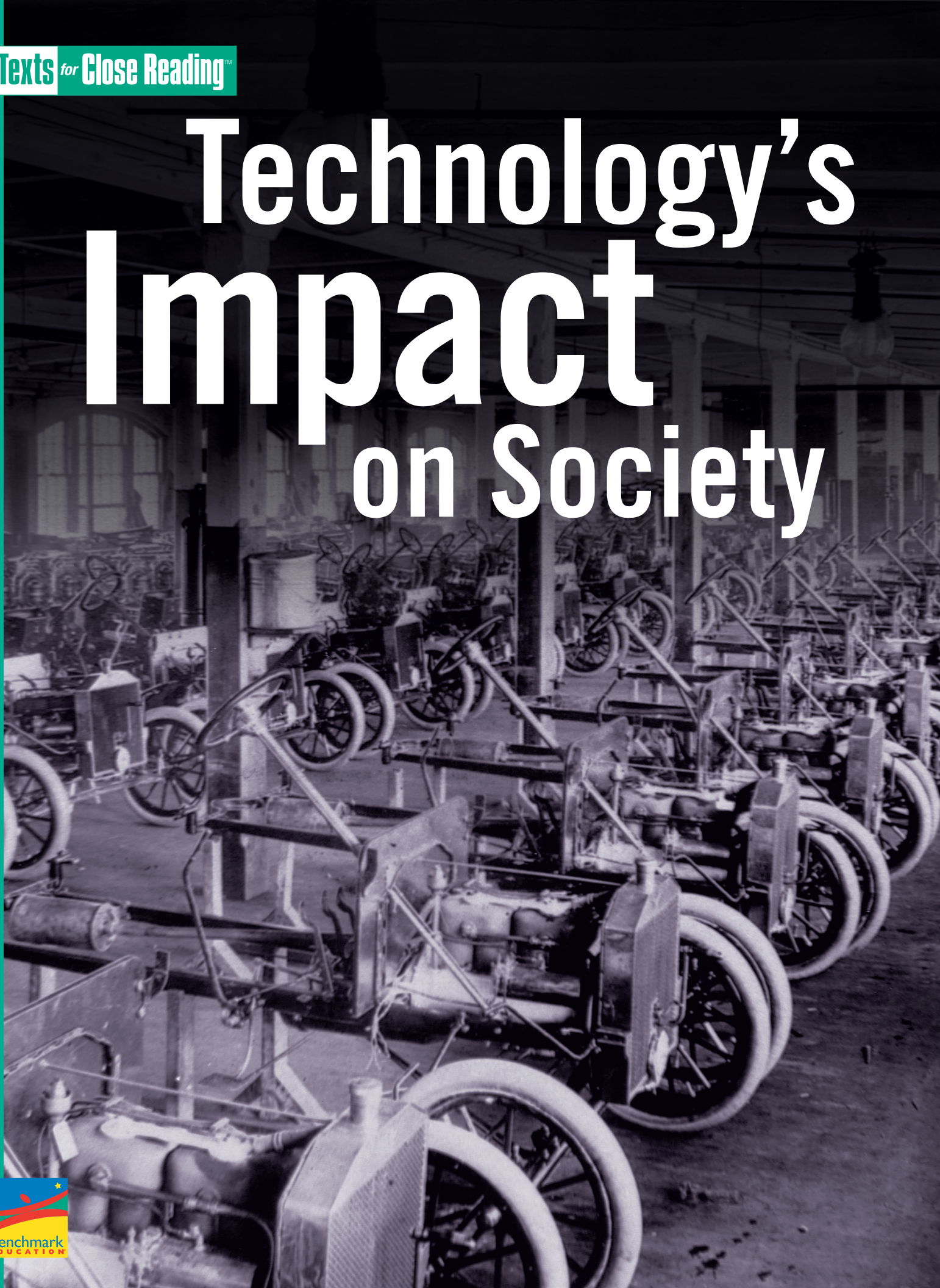
Texts for Close Reading™

Technology's Impact on Society



Benchmark EDUCATION

Technology's Impact on Society

Student Objectives

I will be able to:

- **Read and analyze poems and informational texts about industrialization.**
- **Share ideas with my peers.**
- **Build my vocabulary knowledge.**
- **Write informational, narrative, and opinion texts.**

Credits
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ISBN: 978-1-4900-9209-6

Tips for Text Annotation

As you read closely for different purposes, remember to annotate the text. Use the symbols below. Add new symbols in the spaces provided.

Symbol	Purpose
underline	Identify a key detail.
☆	Star an important idea in the margin.
1 2 3	Mark a sequence of events.
magma	Circle a key word or phrase.
?	Mark a question you have about information in the text. Write your question in the margin.
!	Indicate an idea in the text you find interesting. Comment on this idea in the margin.

Your annotations might look like this.

3 Madison argued for a strong central government. At (1) the time, the thirteen states had a lot of power (?) to govern themselves. This made it hard for a national government to collect taxes or create a military. (2) After months of discussion and debate, and many compromises, the delegates decided on a final document. They mostly followed Madison's Virginia Plan (!) and established a stronger federal government.

4 Madison also helped write a series of newspaper articles called the Federalist Papers. These articles helped persuade readers to accept the new Constitution.

5 (3) Soon after, Madison helped create the Bill of Rights. These are the first ten amendments, or additions, to the

Notes

What power did the sides have?

Find out more about the Virginia Plan

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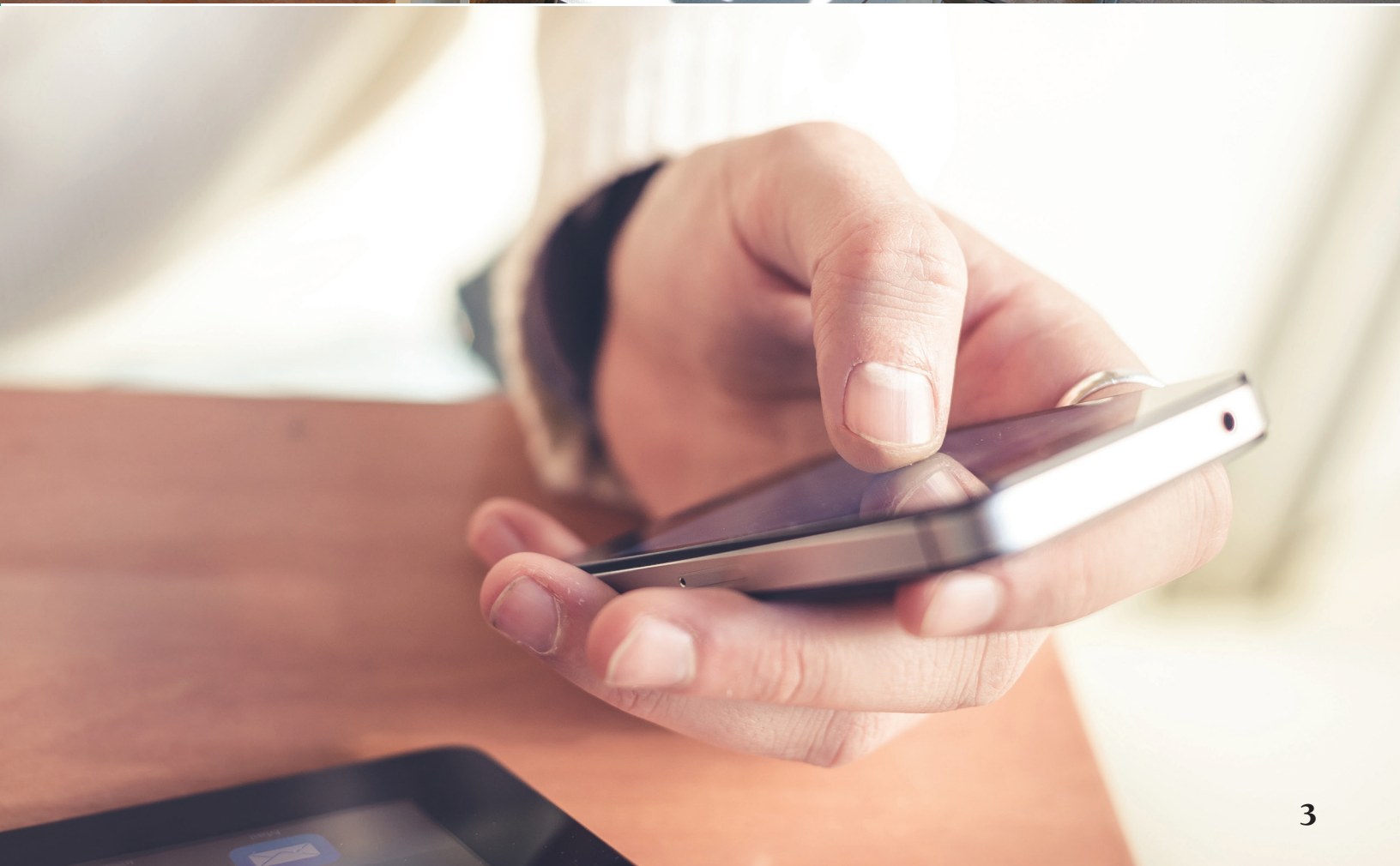
Essential Question

What value does technology bring to people's lives?



Short Read 1

Remember to annotate as you read.

Notes

Technology and the Lowell Mill Girls

In the late 1700s and early 1800s, the invention of new machines launched the first wave of the Industrial Revolution. New technology allowed for the mass production of goods such as textiles. Woven or knit fabrics that in the past had been made by hand could now be produced in large amounts by machines in factories.

By 1850, Lowell, Massachusetts, was the center, or heart, of the textile industry in the United States, with forty textile mills employing more than 10,000 workers. Many of the factory workers were single young women from the farming towns of northern New England or immigrants from Europe. These women were called the Lowell Mill Girls. New technology made the work easier, but did it make their lives better?

In the poem below, a Lowell Mill Girl writes about her longing for her former life.

When I set out for Lowell . . .

Anonymous

When I set out for Lowell,
    Some factory for to find,
I left my native country
    And all my friends behind.
But now I am in Lowell,
    And summon'd by the bell,
I think less of the factory
    Than of my native dell.

* * *

young woman spinning cotton in a factory, 1908

Notes

This next poem, from 1893, also reflects on the conflict facing workers who had left their pastoral life in the country and were now part of the industrial factory grind.

A Mill Picture

by Marshall Putnam Thompson

Her wrinkled face is gazing
Through the tangle of the looms,
Where the belts and twisted gearing
Make a net-work in the rooms.

Does she think of fair Killarney?
Does she dream some old love tune
Is singing through the shuttles
In the mill this afternoon?

Do the long white walls grow misty?
Do the years troop fast away?
Does she smell again the clover
As it dies among the hay?

Is there still a bit of glamour
Of her youth about her head?
Does she long for old companions
Who are numbered with the dead?

So the superintendent wonders,
As he sees her through the looms,
Where the belts and twisted gearings
Make a net-work in the rooms.

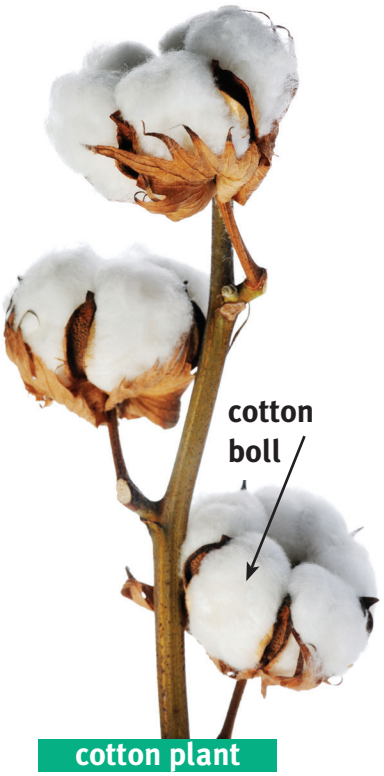
Short Read 2

Remember to annotate as you read.

Notes

Eli Whitney's Cotton Gin

by Judi Black

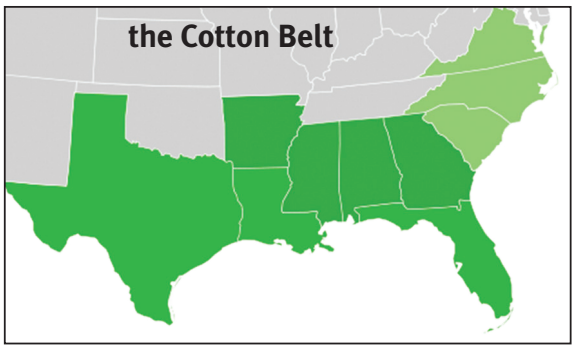


1 It is hot outside, the ground is dry, and plants are blooming. White, fluffy blossoms cover the vast fields. It is time to harvest the cotton that will be turned into cloth and worn by millions of people. Cotton material starts as a boll on a cotton plant. Once removed from the plant, the bolls are processed, sold, spun into yarn, and then woven into textiles, or fabric used to make clothing or other goods.

The Cotton Belt

2 Across the southeastern United States, in a region known as the Cotton Belt, cotton has been a cash crop for more than 200 years. Beginning in the 1700s, planters there grew and harvested cotton for sale on their large farming plantations. Cotton was picked, cleaned, and woven by hand. It took many thousands of hours to prepare the bales of cotton in order for it to be sold.

3 When machines to process cotton were invented during the first Industrial Revolution, larger amounts of cotton could be producted in a harvesting season. Technology radically changed the cotton industry.



Notes

The Invention of the Cotton Gin

4 Eli Whitney was an inventor. As a youth, he made and sold many objects, including nails and hat pins. After completing his studies at Yale College, Whitney went to work on a southern cotton plantation. There Whitney would invent a machine that would transform the nation.

5 At that time, enslaved laborers of African descent planted, harvested, and processed almost all cotton crops. Whitney quickly observed the challenges of processing cotton. Separating the cotton fibers from its seeds was tedious and labor-intensive work. This task took the most time to complete. So Whitney developed a machine that separated the seeds from the fibers. He called it a cotton "gin"—short for engine.

6 Whitney's cotton gin had a simple design. Two rotating brushes, mounted in a box, pulled the cotton fibers, or lint, through small slots, separating the fiber from the seeds. The brushes were turned by a hand crank. Before the cotton gin, it could take an enslaved laborer a whole day to clean one pound of cotton lint by hand. Using Whitney's cotton gin, that person could clean as much as fifty pounds of lint per day.

7 On March 14, 1794, Eli Whitney received a patent for his cotton gin design. The patent meant that he owned the rights to the intellectual property, or idea, for the gin.

Eli Whitney Time Line

1765
Eli Whitney is born.

1792
Whitney graduates from Yale.

1793
Whitney designs cotton gin.

1794
Whitney files patent for cotton gin.

1825
Whitney dies at age 59.

Notes

How the Cotton Gin Impacted the South

8 The invention of the cotton gin led to other developments and changes. The main effect, or impact, was the increase in cotton production. The demand for cotton grew. Planters realized that, with this efficient machine, they could process more cotton in a harvest and meet the demand. They could then make more money, too.

9 Planters began to replace other, less lucrative crops with more cotton. Soon the Cotton Belt was producing more cotton than any other place in the world. People called cotton "white gold." The South became the "cotton king."

10 The rise in cotton crops led to an increased demand for enslaved laborers to plant and pick the cotton. As a result, slavery spread across the Deep South. Prior to the cotton gin, there were about 700,000 enslaved men, women, and children in the South. Most were forced to work on tobacco plantations in Virginia and rice plantations in South Carolina and Georgia. By 1820, slavery had spread westward across the South. By 1860, the population of enslaved people was close to four million.

An enslaved laborer could clean cotton fifty times faster using a cotton gin.

cotton grown in South ▶

shipped to North ▶

woven into fabric in North ▶

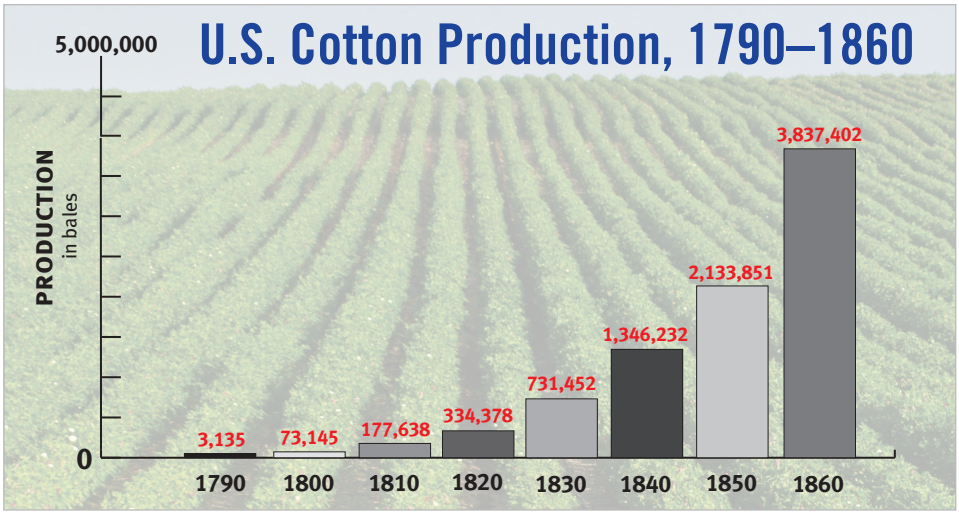
shipped to other countries

11 The cotton gin was just one piece of a larger industrial network that changed the nation. Large mechanical looms used to weave the cotton into fabric now allowed textiles to be mass-produced in factories. The invention of the steam engine affected the cotton industry, too. Steamboats traveled quickly, which meant the supply of goods could be shipped to market faster in order to meet the rising demand.

12 The increase of production provided America with an overabundance, or surplus, of cotton to sell to other countries. In 1790, before cotton processing machines, cotton farmers in the United States produced a total of 3,135 bales of cotton. Within fifty years, cotton production had increased to more than one million bales per year.

13 One man's idea for a small machine greatly affected America—and the world. It helped pave the way for widespread industrialization. Eli Whitney's cotton gin reshaped the economy and daily life, but also had the terrible effect of perpetuating and expanding slavery in the United States.

Notes



With the invention of the cotton gin, production of cotton in the United States began its dramatic climb. Today the United States produces an average of thirteen million bales of cotton per year.

Word Study Read

Remember to annotate as you read.

Notes

Lucy Larcom's New England Girlhood

1 In 1835, when Lucy Larcom was eleven years old, her widowed mother moved her eight children to Lowell, Massachusetts. There she opened a boardinghouse. Most of her tenants were mill workers. Lucy began working at Lowell Mills, too. At the time, it was legal and, therefore, not uncommon for children to work in factories.

2 Years later, Larcom became an educator and author. In 1889, she published her autobiography, *A New England Girlhood*. The work reveals the thoughts and feelings of an observant child about being a mill laborer. It also tells us something about the technology of the time.

3 "So I went to my first day's work in the mill with a light heart. . . . And for a little while it was only a new amusement. . . . But it was not, and could not be, the right sort of life for a child. . . .

4 "One great advantage which came to these many stranger girls through being brought together, away from their own homes, was that it taught them to go out of themselves, and enter into the lives of others. . . .

5 "I never cared much for machinery. The buzzing and hissing and whizzing of pulleys and rollers and spindles and flyers around me often grew tiresome. I could not see into their complications, or feel interested in them. But in a room below us we were sometimes allowed to peer in through a sort of blind door at the great waterwheel that carried the works of the whole mill. It was so huge that we could only watch a few of its spokes at a time . . . moving with a slow, measured strength through the darkness that shut it in."

6 Today, Lucy Larcom's autobiography is often used to study childhood in early America.

BuildReflectWrite

Build Knowledge

What three questions would you ask the narrators of "When I set out for Lowell . . . " (a factory worker) and "A Mill Picture" (a factory superintendent)?

When I set out for Lowell . . .	A Mill Picture

Reflect

What value does technology bring to people's lives?

Based on this week's texts, write down new ideas and questions you have about the essential question.

Writing to Sources

Informative/Explanatory

How did technologies developed in the 1700s and 1800s affect the lives of workers? Write an informational essay in which you answer this question. Support your answer with details and evidence from "Technology and the Lowell Mill Girls" and "Eli Whitney's Cotton Gin."

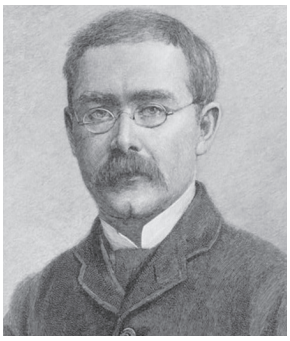
Extended Read 1

Remember to annotate as you read.

Notes

Poems of the Industrial Age

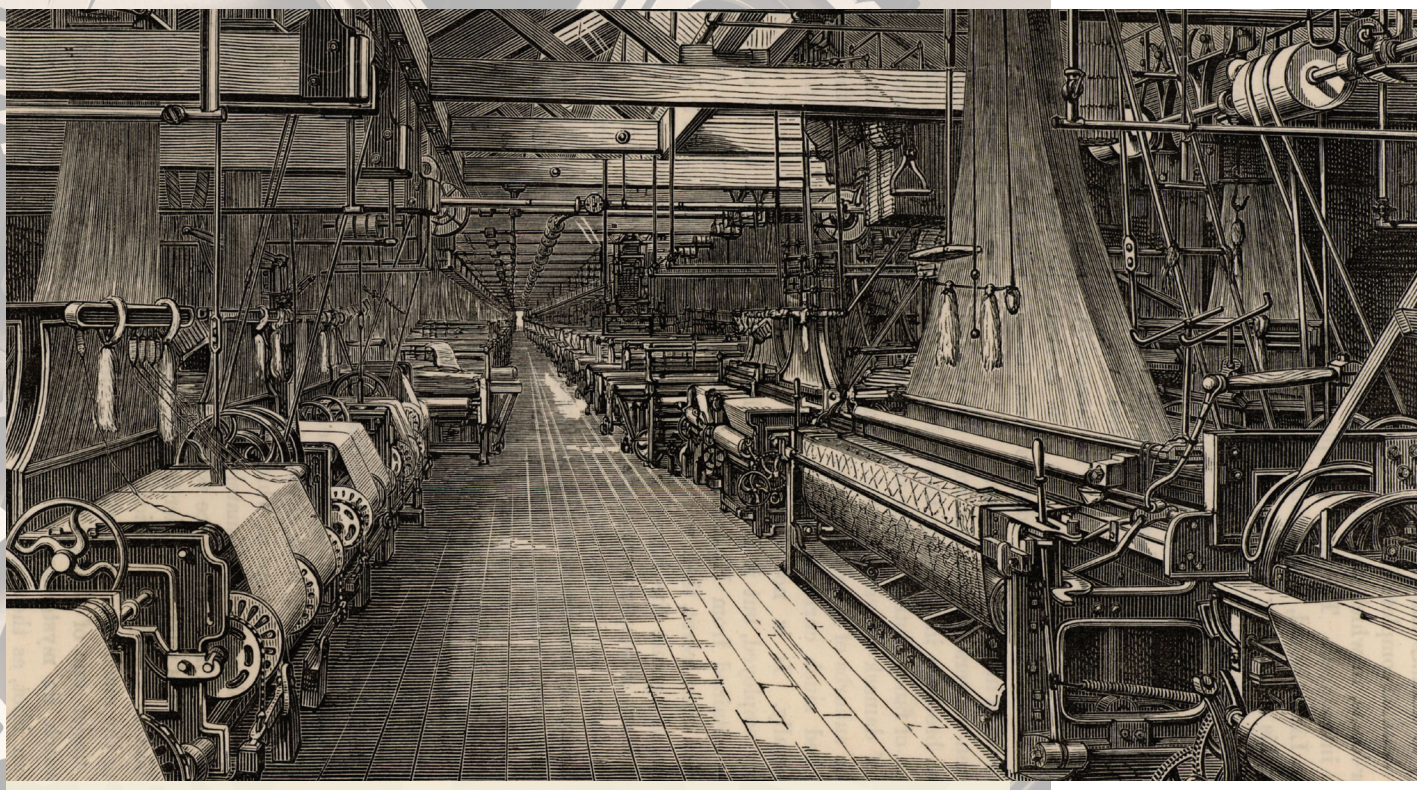
During the Industrial Revolution, many writers reflected on the sea change in technology that was happening around them. Major poets Rudyard Kipling and Carl Sandburg were greatly influenced by the inventions of the Industrial Age they lived in.



Rudyard Kipling

Rudyard Kipling (1865–1936) was a British poet and storyteller who won the Nobel Prize for Literature in 1907. He often wrote about life in India, the place of his birth. He also authored many children's books. Science and technology is a recurring theme in Kipling's work.

Kipling's poem "The Secret of the Machines," published in 1911, is about technology and its pitfalls. Told from the perspective of the machines themselves, it explains how machines can serve humanity, and warns the reader against the dangers of misuse. The poem is divided into four sets of two stanzas. The first stanza of each set has eight lines, and the second has four lines. The structure of the poem is simple, with an ABAB rhyme scheme throughout.



power looms at a weaving factory, Great Britain, around 1880

The Secret of the Machines

by Rudyard Kipling

(MODERN MACHINERY)

We were taken from the ore-bed and the mine,
We were melted in the furnace and the pit—
We were cast and wrought and hammered to design,
We were cut and filed and tooled and gauged to fit.
Some water, coal, and oil is all we ask,
And a thousandth of an inch to give us play:
And now, if you will set us to our task,
We will serve you four and twenty hours a day!

We can pull and haul and push and lift and drive,
We can print and plough and weave and heat and light,
We can run and race and swim and fly and dive,
We can see and hear and count and read and write!

Notes

Notes

Would you call a friend from half across the world?
If you'll let us have his name and town and state,
You shall see and hear your crackling question hurled
Across the arch of heaven while you wait.
Has he answered? Does he need you at his side?
You can start this very evening if you choose,
And take the Western Ocean in the stride
Of seventy thousand horses and some screws!

The boat-express is waiting your command!
You will find the *Mauretania*[1] at the quay,
Till her captain turns the lever 'neath his hand,
And the monstrous nine-decked city goes to sea.

Do you wish to make the mountains bare their head
And lay their new-cut forests at your feet?
Do you want to turn a river in its bed,
Or plant a barren wilderness with wheat?
Shall we pipe aloft and bring you water down
From the never-failing cisterns of the snows,
To work the mills and tramways in your town,
And irrigate your orchards as it flows?

It is easy! Give us dynamite and drills!
Watch the iron-shouldered rocks lie down and quake
As the thirsty desert-level floods and fills,
And the valley we have dammed becomes a lake.

1 *Mauretania*—the biggest ocean liner of its day in the early 1900s

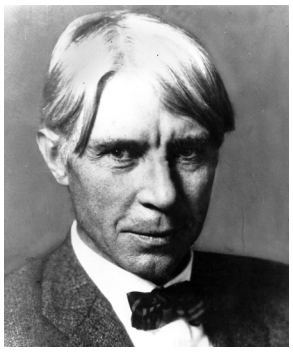
Notes

But remember, please, the Law by which we live,
We are not built to comprehend a lie,
We can neither love nor pity nor forgive.
If you make a slip in handling us you die!
We are greater than the Peoples or the Kings—
Be humble, as you crawl beneath our rods!-
Our touch can alter all created things,
We are everything on earth—except The Gods!

Though our smoke may hide the Heavens from your eyes,
It will vanish and the stars will shine again,
Because, for all our power and weight and size,
We are nothing more than children of your brain!

cotton mills in the English countryside, 1830

Notes



Carl Sandburg

Carl Sandburg (1878–1967) was a Pulitzer Prize–winning American poet and writer. Born and raised in Galesburg, Illinois, Sandburg moved to Chicago and worked as a newspaper columnist while establishing himself as a poet. With the publication of his poetry collections titled Chicago Poems *(1916),* Cornhuskers *(1918), and* Smoke and Steel *(1920), Sandburg became known for his free-verse poems about industrial America.*

Sandburg's poem "Skyscraper," published in 1916, is a look at the city, its people, and its high-rise buildings, which began soaring toward the sky in the early twentieth century. The poem suggests that the people who inhabit the building, working by day and night, give the structure its soul and its meaning. The poem is written in Sandburg's signature free verse, without a set rhyme.

Michigan Avenue, Chicago, 1923

This postcard from 1928 shows Chicago's Wacker Drive with Lake Michigan in the background.

Notes

Skyscraper (excerpts)

by Carl Sandburg

By day the skyscraper looms in the smoke and sun and has a soul.
Prairie and valley, streets of the city, pour people into it and they mingle among its twenty floors and are poured out again back to the streets, prairies and valleys.
It is the men and women, boys and girls so poured in and out all day that give the building a soul of dreams and thoughts and memories.
(Dumped in the sea or fixed in a desert, who would care for the building or speak its name or ask a policeman the way to it?)

Notes

Elevators slide on their cables and tubes catch letters and parcels and iron pipes carry gas and water in and sewage out.

Wires climb with secrets, carry light and carry words, and tell terrors and profits and loves—curses of men grappling plans of business and questions of women in plots of love.

• • •

Hands of clocks turn to noon hours and each floor empties its men and women who go away and eat and come back to work.

Toward the end of the afternoon all work slackens and all jobs go slower as the people feel day closing on them.

One by one the floors are emptied. . . The uniformed elevator men are gone. Pails clang. . . Scrubbers work, talking in foreign tongues. Broom and water and mop clean from the floors human dust and spit, and machine grime of the day.

Spelled in electric fire on the roof are words telling miles of houses and people where to buy a thing for money. The sign speaks till midnight.

Darkness on the hallways. Voices echo. Silence holds. . . Watchmen walk slow from floor to floor and try the doors. Revolvers bulge from their hip pockets. . . Steel safes stand in corners. Money is stacked in them.

Notes

A young watchman leans at a window and sees the lights
of barges butting their way across a harbor, nets of
red and white lanterns in a railroad yard, and a span
of glooms splashed with lines of white and blurs of
crosses and clusters over the sleeping city.
By night the skyscraper looms in the smoke and the stars
and has a soul.

Chicago's Tribune Tower at night, 1941

Word Study Read

Remember to annotate as you read.

Notes

An Adventure to Remember

1 Last summer, I visited my uncle who lives in New York City. Uncle Harry has always been very literary, so when he left Ohio and moved to New York, it wasn't unexpected. Now he works as an editor for a major publishing company. I respect him a lot.

2 He took me to the main observation deck of the Empire State Building, the world's tallest skyscraper. I'd been looking forward to seeing this incredible structure since its completion four years ago. We rode the elevator up to the eighty-sixth floor (that would have been 1,576 steps). Amazingly, it took less than a minute, but Uncle Harry used the time to entertain me with interesting information about the building's construction. He said about 3,400 men worked on the building, and it was finished in just one year and forty-five days! The very last rivet was made of gold.

3 Soon we were on the main deck 1,050 feet above the city streets, peering through high-powered telescopes at spectacular views. Uncle Harry was instructing me about specific landmarks, and we were so engrossed that we didn't notice it was getting dark, and we were alone. When we went to the elevator and pressed the down button, nothing happened. The elevator wasn't running because the deck was closed!

4 I panicked, but my uncle remained calm, reassuring me that someone would eventually find us. However, he suspected we might have to spend the night. "It will be an extraordinary adventure!" he said.

5 We watched the lights come on all over the city, and then I even managed to doze. At dawn, when the cleaning crew got off the elevator, were they surprised to see us! I'll always remember that adventure in the summer of 1935.

BuildReflectWrite

Build Knowledge

Answer these questions to help interpret and critique the poems: What is each poem about? What is the poet's view of industrialization? Choose one stanza from each poem and then explain why you liked or disliked it.

The Secret of the Machines	Skyscraper

Reflect

What value does technology bring to people's lives?

Based on this week's texts, write down new ideas and questions you have about the essential question.

Writing to Sources

Narrative

Imagine that you are a skyscraper. Write a narrative about one day in your life. What do you see, hear, think, and feel? Use your imagination as well as inspiration from "The Secret of the Machines" and "Skyscraper" to help you write your narrative.

Extended Read 2

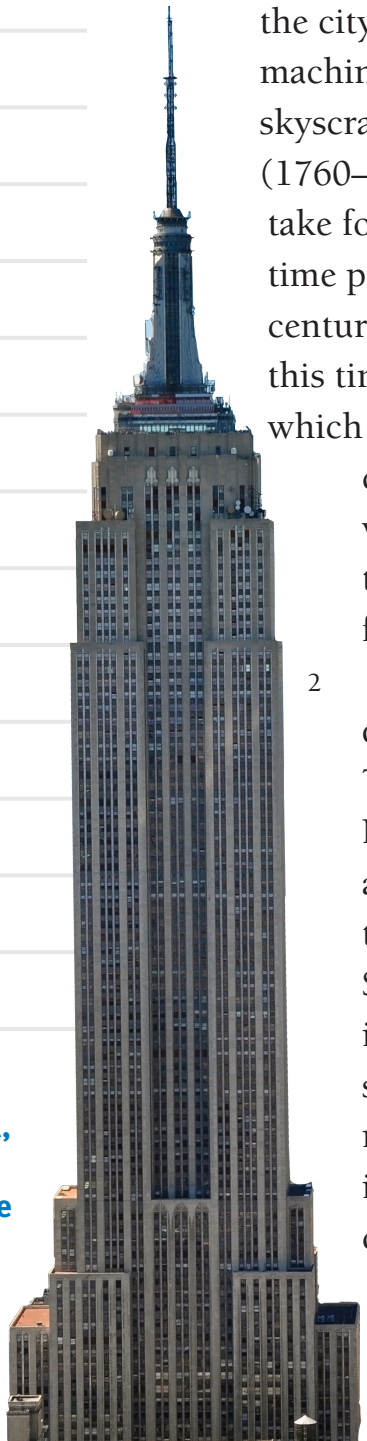
Remember to annotate as you read.

The Making of the Industrial Age

by Kathy Furgang

Notes

1 The towering steel and glass building rises from the city street, lighting up the night sky. The steel, machinery, electricity, and architectural design of the skyscraper are the result of the Industrial Revolution (1760–1914). Many engineering technologies we take for granted today are products of the 150-year time period that spanned from the late eighteenth century to the early twentieth century. Historians call this time period a revolution because it was an era in which civilization made dramatic and far-reaching changes. Most of the changes originated with the way goods were manufactured and transported. However, the ripple effects were felt everywhere.



Without the mass production of steel, skyscrapers such as the Empire State Building could not have been built.

2 The new inventions affected every aspect of daily life. They changed the way people lived. They also changed the way people worked. Many people left their farms in rural areas and moved to cities, or urban areas. In cities, they would work in factories that made goods. Skilled workers that had made things by hand in the past now had to learn different skills, such as how to run new machines. These machines produced the same goods faster, and in greater numbers, than could a single artisan or craftsperson.

Notes

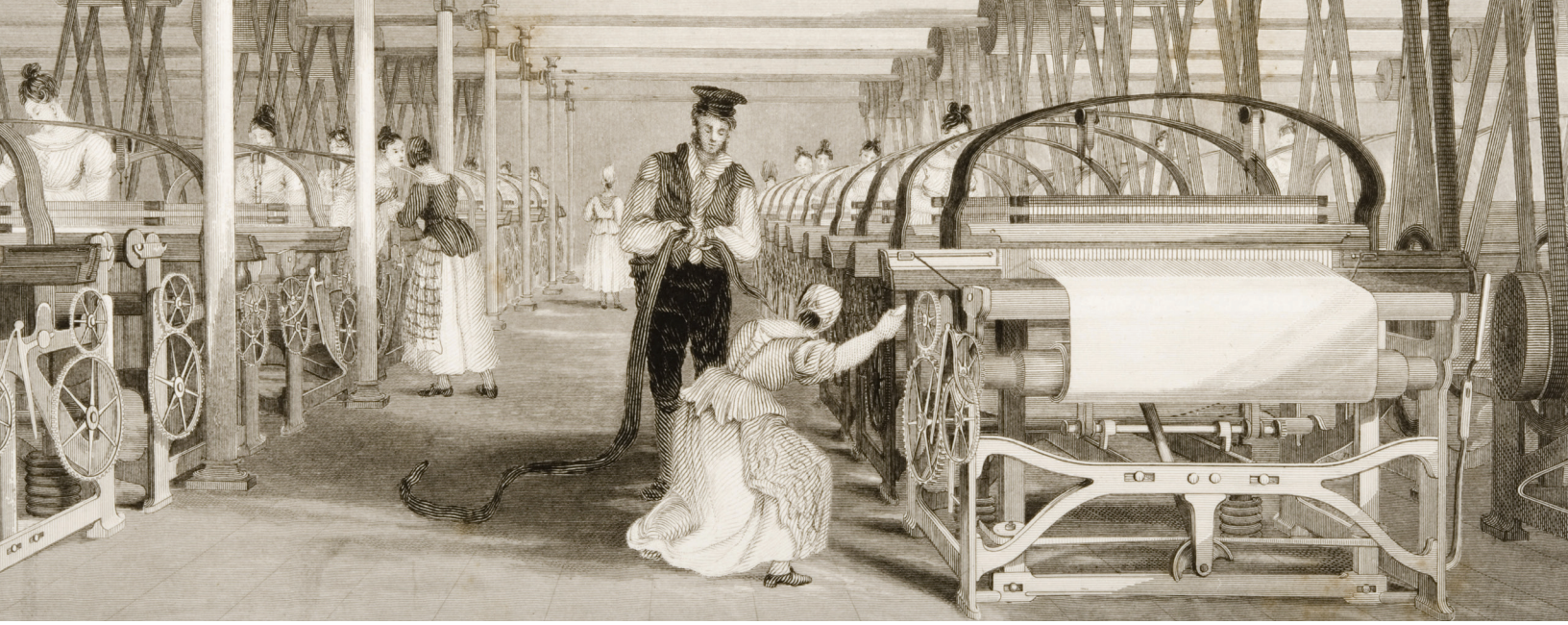
The textile industry helped kick-start the Industrial Revolution in the United States.

Making Textiles

3 During the industrial era, new technology allowed different industries to explode. New advancements made some businesses more cost-effective and efficient. Businesses could now produce more goods in less time, and for less money. This increase in production and decrease in costs meant that businesses could make higher profits, and use that money to grow.

4 Turning raw material such as cotton fiber into fabric for clothes is a long and difficult process. People had been working on quicker and easier ways to process cotton, spin it into thread, and weave it into textiles since the 1500s. Before the Industrial Revolution, weaving was a family activity or a small business. Women and children would remove the seeds, then card (clean) the fiber from cotton by hand. Next, they would spin the fiber into yarn or thread. Then, usually a male weaver would work at a manual loom, weaving the thread into cloth by hand. Finally, the fabric would be used by the family or sold. Most women sewed their own clothes and made linens for their families.

5 In 1764, James Hargreaves invented the spinning jenny (*jenny* was short for "engine"). This hand-powered machine spun yarn ten times as quickly as a regular spindle. This invention was followed by Richard Arkwright's water frame, powered by a water wheel.



Machines such as power looms helped spin cotton into thread, and then weave the thread into large sheets of fabric, or textiles.

Notes

6 In 1775, Samuel Crompton improved the process with the spinning mule—a cross between the spinning jenny and water frame. This hydropowered machine spun thread 1,000 times faster than by hand. Then in 1784, Edmund Cartwright invented the first power loom, which wove the thread into fabric at forty times the rate of a hand loom. The demand for raw cotton increased.

7 In 1790, English textile worker Samuel Slater immigrated to the United States. He opened the first textile mill in the United States in 1793, along the river in Pawtucket, Rhode Island. At the factory, machines were powered by moving water, and later by steam. The machines spun cotton, then stretched, twisted, and wound it into yarn or thread. This thread was then woven into fabric. The demand for cotton increased again.

8 At about the same time, in 1793, Eli Whitney invented the cotton gin (*gin* was another nickname for "engine"). The hand-powered machine allowed cotton growers to increase the cotton supply and begin meeting the textile industry's growing demand.

9 By the 1850s, cotton was the number one crop in the South, and cotton textile mills had sprung up all over the Northeast. The Industrial Age had begun.

Notes

Making Steam

10 Many of the machines built during the industrial revolution were powered by a new technology, the steam engine. In 1781, James Watt patented a steam-powered engine. The steam engine gave rise to John Fitch's steamboat in 1787 and Richard Trevithick's steam railway locomotive in 1804. These inventions revolutionized transportation. They allowed raw materials and goods to be transported faster and farther than ever before.

11 Steam engines for factories, steamboats, and steam locomotives could run anywhere that water and wood or coal fuel was available. By burning the wood or coal fuel, the water could be heated and converted to steam, which powered the gears of the engine. As the 1800s wore on, forests across the Northeast were cleared for lumber and wood fuel. By 1870, wood fuel became scarce. Coal soon became the major fuel source for steam power. Compared with wood, coal yielded more energy, making it more efficient. Coal mining efforts increased.

12 By the 1950s, the use of coal in industry and transportation had declined. For producing electricity, however, coal is still the primary fuel today. According to the Department of Energy (DOE), 90 percent of electricity in the U.S. is produced using steam turbines, and almost 45 percent of those steam turbines are powered by coal.

The coal-fueled steam engine (bottom left) "powered" the manufacturing and transportation of the Industrial Revolution (steamboat, center; steam locomotive, right)

Notes

Mining Coal

13 Coal is a nonrenewable resource that is mined, or dug from the ground. Prior to the Industrial Revolution, the methods used to mine coal were slow and extremely hazardous. Mining involved digging underground tunnels with pickaxes. Dynamite was often used to blast large areas of coal into smaller pieces. Then miners loaded the dirty, black rock into tubs and hauled the tubs out of the mines. Breathing in the black dust each day could make miners very sick. Mines often flooded or collapsed. Other times the digging released poisonous and explosive gases from beneath Earth's surface.

14 In the 1880s, coal-cutting machines were invented. A series of rotating picks, or a spinning disk, would automatically tear away at thick walls of coal. A piece would then fall onto a conveyor belt, which would move the coal out of the mines and to the surface. The machine was called a continuous miner because it kept the process moving continuously, doing the job of many miners and mules all in one. Other technology, such as the mechanical coal loader, also helped automate coal mining to make it easier and less dangerous.

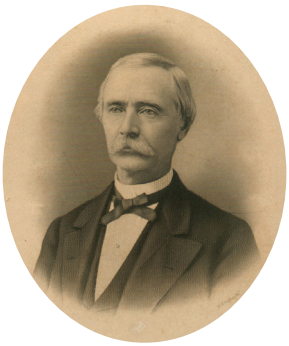
◀ **Until the late 1800s, there were few machines to help miners.**

▼ **Coal-mining machines made mining faster, safer, and more productive.**

Notes

Making Steel

William Kelly



Henry Bessemer

Both men helped make steel an affordable material.

15 Some technology came in the form of new machines. Other technology came from new ways of doing things. Steel is an example of how innovative new methods changed an industry. Steel is an extremely strong and ductile metal made from iron and carbon. Prior to the 1850s, iron ore was smelted into pig iron in a blast furnace using charcoal. Then the pig iron was "fined" into wrought iron, which was then forged into steel. The multistep process was slow and costly. Few furnaces could get hot enough to melt wrought iron into steel. As a result, steel was expensive and was used in only a few products, such as knives or swords.

16 Then in the 1850s, an American named William Kelly and an Englishman named Henry Bessemer both patented processes for mass-producing steel. The Bessemer method of steel-making, as it came to be known, forged steel from pig iron. Shortening the process allowed steel to be forged faster at a lesser cost. An increase in steel productivity made steel less expensive.

17 Steel was now more affordable and could be used in many different products. The affordability of steel allowed more machines to be manufactured. The mass production of steel also helped launch other industries. Railroads could be constructed across the nation to carry goods and materials from coast to coast. Skyscraping towers more than a thousand feet high could be erected. Eventually, even cars could be built. All of these used steel.

Notes

Making Cars

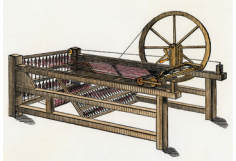
18 At the turn of the twentieth century, the automobile was a fancy new contraption enjoyed only by the rich. Cars were difficult to make and were built by hand. Most people could not afford one. Then in 1913, Henry Ford and his Ford Motor Company developed a new method for manufacturing. He used an innovative system called an assembly line to mass-produce a car called the Model T.

19 Ford's assembly line worked this way: The frame of the car sat on a large belt, which moved slowly across 150 feet of factory floor with help from a system of pulleys and moving chains. Instead of one or two workers building each car one at a time from start to finish, Ford broke down the job of building a car into eighty-four separate steps. Using this method, a worker would be responsible for doing just one of those jobs as the car moved slowly along the long belt. One person might screw on doors. Another might put on wheels. Still another could place the engine into the car. Other workers would supply pieces for the line.

Henry Ford in a Model T that he drove to the White House

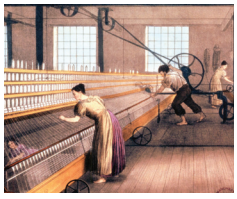
Inventions of the Industrial Age

1760s–1830s: First Industrial Revolution



1764: spinning jenny

1769: water frame



1775: spinning mule

Notes

The assembly line helped make work in factories more efficient.

20 Ford also developed machines that could stamp out car parts from steel and other metals. The machines did the work faster and more accurately than humans could. Instead of taking twelve hours to assemble a single car, a car could be put together in just two and a half hours. All of these improvements allowed Ford to make more cars more efficiently. Since he could make more cars cheaper and faster, Ford was able to charge less. Cars became affordable to more people. That made the demand for new cars even higher. By the mid-1920s, there were over ten million Model T cars on the road.

21 The assembly line soon changed the way that most goods were manufactured. Factories adapted the concept to produce many different goods, such as shoes, household goods, and early electronics.

• • •

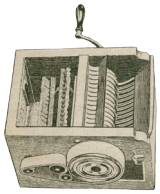
22 The effects of the Industrial Revolution were widespread. From Samuel Slater's first textile mills to the Ford assembly line, from the water-powered looms to the steam-powered turbines, the Industrial Revolution helped change America and the way Americans lived.

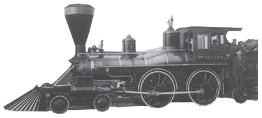
1781: steam engine

1784: power loom

1787: steamboat

1793: cotton gin





1804: steam railway locomotive

Remember to annotate as you read.

Notes

Samuel Morse: Inventor and Artist

1 Samuel Morse is credited with inventing the electric telegraph and its code of dots and dashes. That alone is an amazing feat! However, before becoming an inventor, Morse was an accomplished artist.

2 While attending college, Morse became interested in drawing and made extra money by doing portraits of his classmates. After graduation, he went to Europe and studied art for three years. When he returned home to Boston, he traveled from town to town, painting portraits of anyone who would hire him.

3 It was difficult for Morse to earn a decent living. Later, when he married and had children, he continued to struggle. However, over time, his reputation grew. In 1819, he painted portraits of presidents James Monroe and John Adams. Later, he did a portrait of the members of the House of Representatives, as well. Of course, Morse continued traveling for his work and, as a result, missed his family dearly.

4 In 1825, while working in Washington, D.C., Morse received a letter from his father. The letter, which had taken weeks to arrive, stated that his wife was ill. Morse rushed home, but when he arrived, his wife had already died. Many believe that her death inspired him to create an invention that could send messages quickly and without delay.

5 In 1832, Morse conceived of the idea of an electric telegraph. However, it wasn't until 1844 that the first official demonstration of the telegraph took place with a message sent from Washington, D.C. to Baltimore. Soon, telegraph wires were built across America and then in countries across the world. Thanks to Samuel Morse, important messages could be sent in seconds, instead of weeks or months.

BuildReflectWrite

Build Knowledge

What were the major events of the Industrial Revolution? Use the sequence-of-events chart below to show how the events are related.

Reflect

What value does technology bring to people's lives?

Based on this week's texts, write down new ideas and questions you have about the essential question.

Writing to Sources

Opinion

In this unit, you have read about a number of important technological advancements that took place during the Industrial Revolution. Which do you think is the most important one? In an essay, state and defend your opinion using facts and details from two readings in the unit. Use at least one quotation from a source.

Support for Collaborative Conversation

Discussion Prompts

Express ideas or opinions . . .

When I read _____, it made me think that _____.

Based on the information in _____, my [opinion/idea] is _____.

As I [listened to/read/watched] _____, it occurred to me that _____.

It was important that _____.

Gain the floor . . .

I would like to add a comment. _____.

Excuse me for interrupting, but _____.

That made me think of _____.

Build on a peer's idea or opinion . . .

That's an interesting point. It makes me think _____.

If _____, then maybe _____.

[Name] said _____. That could mean that _____.

Express agreement with a peer's idea . . .

I agree that _____ because _____.

I also feel that _____ because _____.

[Name] made the comment that _____, and I think that is important because _____.

Respectfully express disagreement . . .

I understand your point of view that _____, but in my opinion _____ because _____.

That is an interesting idea, but did you consider the fact that _____?

I do not agree that _____. I think that _____ because _____.

Ask a clarifying question . . .

You said _____. Could you explain what you mean by that?

I don't understand how your evidence supports that inference. Can you say more?

I'm not sure I understand. Are you saying that _____?

Clarify for others . . .

When I said _____, what I meant was that _____.

I reached my conclusion because _____.

Group Roles

Discussion Director:
Your role is to guide the group's discussion and be sure that everyone has a chance to express his or her ideas.

Notetaker:
Your job is to record the group's ideas and important points of discussion.

Summarizer:
In this role, you will restate the group's comments and conclusions.

Presenter:
Your role is to provide an overview of the group's discussion to the class.

Timekeeper:
You will track the time and help keep your peers on task.

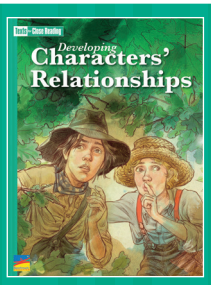
Making Meaning with Words

Word	My Definition	My Sentence
affordable (p. 27)		
alter (p. 15)		
available (p. 25)		
lucrative (p. 8)		
manual (p. 23)		
mingle (p. 17)		
network (p. 9)		
radically (p. 6)		
task (p. 13)		
urban (p. 22)		

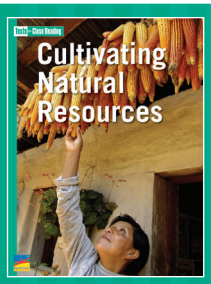
Build Knowledge Across 10 Topic Strands

Government and Citizenship

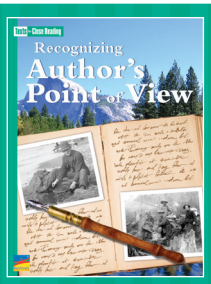
Character



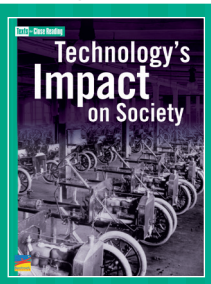
Life Science



Point of View

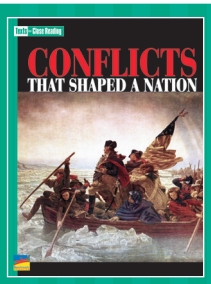


Technology and Society

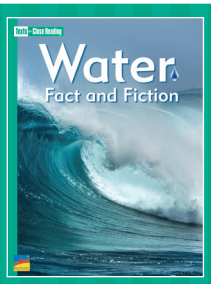


Theme

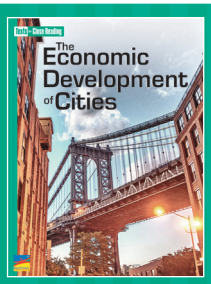
History and Culture



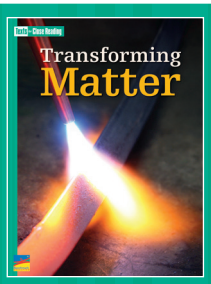
Earth Science



Economics



Physical Science



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Lexile 900L–1010L

Grade 5 • Unit 5

ISBN 978-1-4900-9209-6