Threads of Change

How resources, machines, and routes shaped Lowell

6-12.US1.49 "Evaluate how improved use of resources, new technology and inventions, and transportation networks influenced the growth of industrialization and urbanization."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline how river water and cotton helped the mills, circle the two types of cloth-making machines, and number three linked changes from faster shipping to a larger city.

How Lowell Grew

1. In the early 1800s, Lowell, Massachusetts, became a center of cloth making. The Merrimack River provided a steady flow of water. Builders dug channels to direct that water toward mill wheels, which powered machines inside large factories. Cotton from Southern farms supplied the raw fiber. Much of that cotton was grown by enslaved people, whose forced labor helped keep the mills supplied. River power and cotton served different purposes: one ran the equipment, while the other became cloth. With both resources available in one place, mill owners could gather many workers and machines under one roof.

2. Factory owners also used new technology to turn cotton into cloth more quickly. Spinning machines twisted cotton fibers into thread, and power looms wove the thread into fabric. A worker using these machines could help make more cloth than a worker spinning or weaving by hand. Greater output gave owners a reason to buy more cotton and hire more people. Young women, among others, moved to Lowell for paid mill jobs and often lived in boardinghouses. The machines increased production, but they also tied workers' days to long factory schedules instead of the pace of work at home.

3. Moving supplies and cloth mattered as much as making them. Ships carried Southern cotton to Boston, and the Middlesex Canal linked Boston with the Lowell area. Canal boats could bring cotton inland and take finished cloth toward markets. The Boston and Lowell Railroad opened in 1835, offering a faster route than canal boats. Faster trips helped mills receive supplies and send out cloth more quickly, making further factory growth easier. As mills expanded, more workers arrived, and Lowell grew into a busy city with stores and boardinghouses. Its growth depended on connected resources, machines, and routes, not on any one change alone.

2 ANSWER WITH EVIDENCE

Use the passage

1. How did the Merrimack River and Southern cotton each help Lowell's factories?

2. Why did spinning machines and power looms give mill owners a reason to hire more workers?

3. How did the railroad improve on the canal route, and how could that difference affect factory growth?

4. How did increased cloth production and faster shipping together help Lowell grow into a city?

3 YOUR TURN

Your own words

Imagine Lowell's railroad to Boston is delayed by 20 years, while its river power, cotton supply, and machines stay the same. In four or five sentences, predict how factory production and city growth might differ, explain why, and judge whether the canal could fully replace the railroad.

ANSWER KEY

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GRADES 6-12 · 6-12.US1.49

PART 1 · READ AND MARK

Underline how river water and cotton helped the mills, circle the two types of cloth-making machines, and number three linked changes from faster shipping to a larger city. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How did the Merrimack River and Southern cotton each help Lowell's factories?	**River water powered the mill machines, while cotton provided the fiber used to make cloth.**
2	Why did spinning machines and power looms give mill owners a reason to hire more workers?	**The machines increased cloth production, so owners bought more cotton and hired more people to keep the mills running.**
3	How did the railroad improve on the canal route, and how could that difference affect factory growth?	**The railroad offered faster trips, helping mills receive cotton and send out cloth more quickly. That made expansion easier.**
4	How did increased cloth production and faster shipping together help Lowell grow into a city?	**Machines increased output, and faster shipping helped mills get supplies and sell cloth. Expanding mills drew more workers, and stores and boardinghouses grew to serve them.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Without the railroad, Lowell's mills could still use river power and cotton to run spinning machines and power looms. Canal boats could carry cotton inland and cloth toward Boston, so production would not stop. But slower trips might delay supplies and sales, making it harder for owners to expand mills quickly. Fewer new jobs could mean fewer people moving to Lowell and slower growth of stores and boardinghouses. The canal could help, but it would not fully replace the railroad's faster service.

Accept predictions that recognize the canal would keep trade possible but that slower shipping could limit or delay mill expansion and city growth. Students should connect their judgment to evidence from the passage.