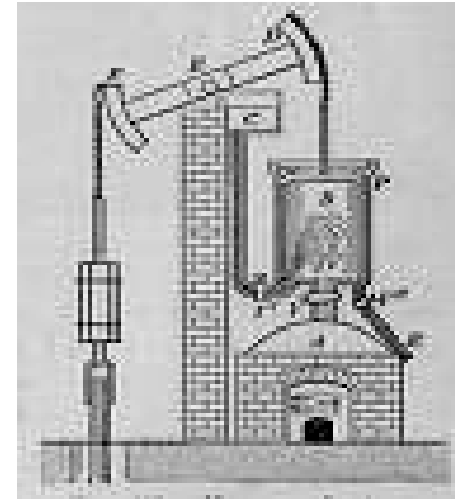


The Rise of Industrial Revolution

Innovations and Individuals that
Changed the World

How did it start?

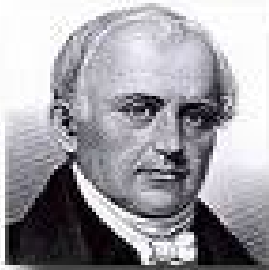


Spinning Jenny & Steam Engine

Allowed people to make goods more efficiently (faster and cheaper with less people involved)



Who was involved?



- Samuel Slater breaks the law! He builds a spinning jenny from plans he memorized while working in Britain. He comes to America, builds textile mills (*where cloth is made*) here, and factories begin to spring up in New England.



- Eli Whitney is an inventor who encouraged American manufacturers to use standardized interchangeable parts (all the same). This decreased the number of people and amount of time needed to produce an item. Interchangeable parts made assembly lines possible.



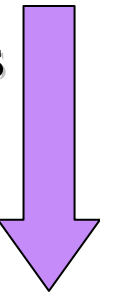
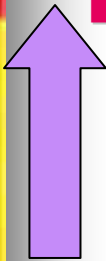
Interchangeable Parts

- In 1797, the U.S. government hired the inventor Eli Whitney to make 10,000 muskets (guns) for the army.
- Before this time muskets were made by hand; if a part broke, a new part had to be created to match the broken one
- Whitney sought a better way to make guns
- In 1801, he went to Washington with a box containing piles of musket parts. He took a part from each pile and assembled a musket in seconds.
- He had just demonstrated the use of interchangeable parts; parts that are exactly alike.



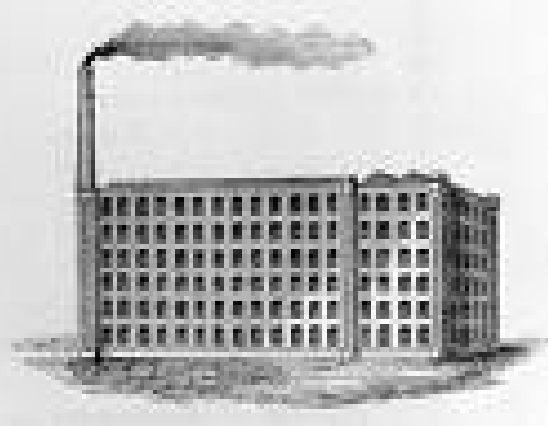
What was the effect?

- The supply of goods went up because fabrics (called textiles) and manufactured goods could be made more easily and more quickly than ever before.
- The cost of making a product went down (not as many people needed).
- The price went down because it was cheaper to make.
- Then the demand for the product went up (more people could afford to buy it).



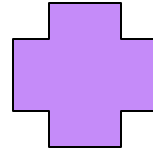
Main Features of Industrialization

- Industrialization occurred in the North
- Machines to do the work that people used to do
- Large factories were a part of industrialization; factories put workers under one roof
- Factory work replaced farm work as the most common type of jobs in the North
- Unskilled workers replace skilled workers; they produced manufactured goods more cheaply
- More people worked; women and children began to work in mills and factories

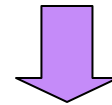


Which means...

Rise of the factory system



Use of steam power



Mass production of goods



Impact of Industrialization

Rise of national products

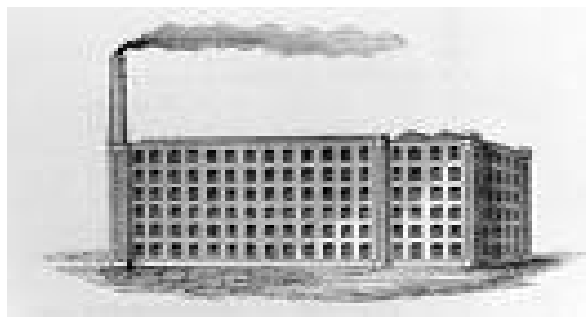
(MADE IN THE USA)

- Skilled craftsmen were replaced by unskilled laborers
- From 350,000 to over 2 million in 40 years

Change in living standards

(NEW & IMPROVED)

- Became easy to purchase ready made goods
- The size of middle class grew enormously
- So did the gap between RICH and POOR



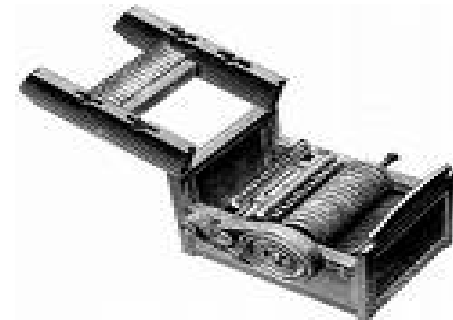
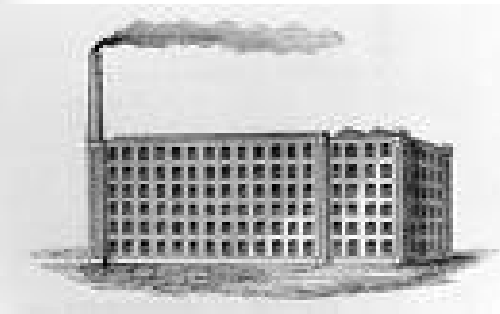
Impact of Industrialization cont...

Urbanization (CITY LIFE)

- Young people left farms
- Immigrants poured in
- Cheap labor source
- High cost of living
- 14 hour days reduced to 10
- Child labor
- pollution

Sectionalism (NORTH v. SOUTH)

- Eli Whitney developed cotton gin - one machine could do the work of fifty
- COTTON BECAME KING...
- Price of slaves more than doubled overnight
- The invention of the Cotton Gin increased slavery in the South



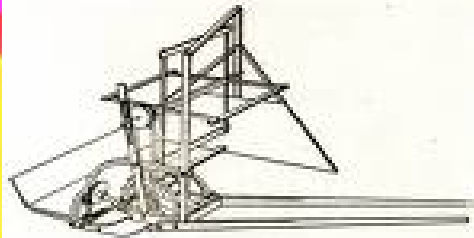
Lowell System

- The factory system in America began around 1789
- The call went out across the nation - Francis Cabot Lowell had jobs! Five new cotton mills in Waltham, Massachusetts would pay cash to men and women
- Farm girls excited for cash, packed their clothes in boxes as headed for Waltham, Massachusetts
- The Lowell Mills employed so many young women that they earned the name "*Lowell Girls*"



AGRICULTURAL INVENTIONS

- The McCormick Reaper - used to harvest wheat, rather than having to cut it down by hand.



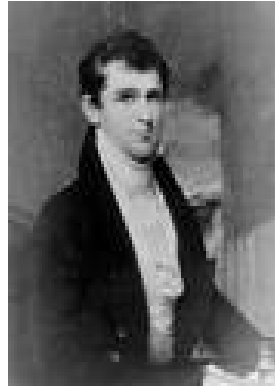
- The Cotton Gin - machine for quickly separating cotton fibers from seeds.



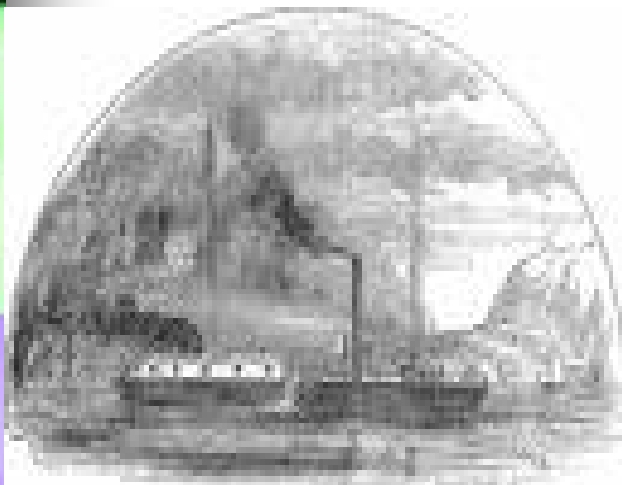
- The Steel Plow - invented by John Deere, could be pulled by a horse rather than oxen and could prepare a field for planting much faster



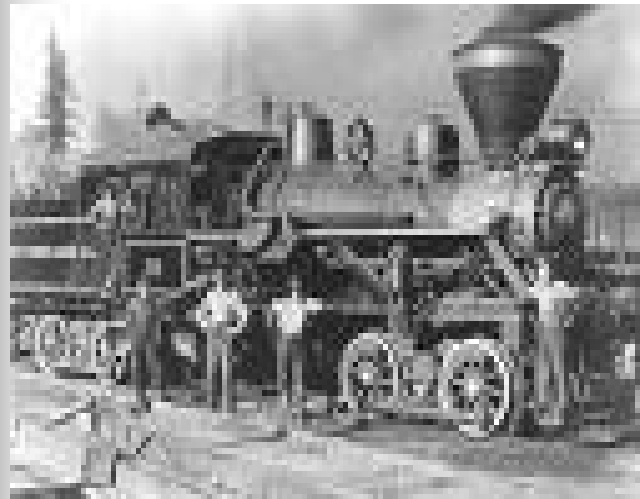
Transportation Revolution



- Robert Fulton - invented the first steamboat, *The Clermont*. Steamboats were more dependable than wind and could move boats upstream fast. Steamboats cut travel time and the cost of moving good and people.

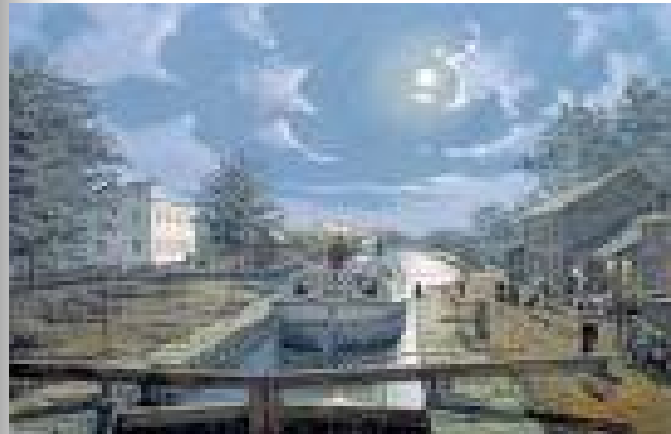


Transportation Revolution cont...



- The steam engine was applied to land transportation and a new form of travel was created - the railroad. Eventually the railroad connected cities and markets. It offered a smoother ride and more passengers than horse and wagons.
- Without railroads, the Industrial Revolution would not have had the impact it did, America might still be farming.

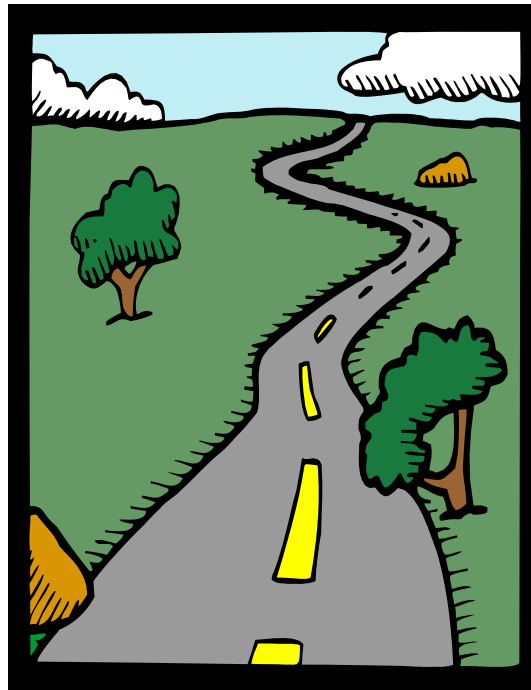
Transportation Revolution cont...



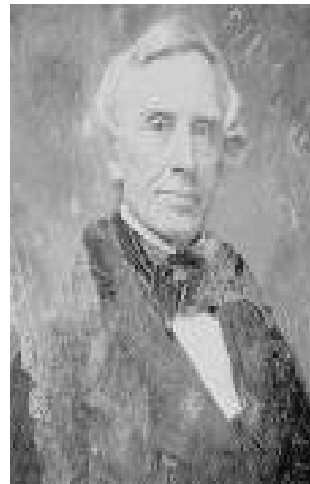
- Canals are built in the Northeast
- Easier to ship by water than land
- Since there were so many fast moving rivers and large lakes- the canals connected them
- The Erie Canal allowed goods to be sent from farms in the Midwest to the cities in and along the East Coast.

Improvements in Transportation cont...

- Federal roads are built; such as the Cumberland Road
- Made it easier for more people to move west
- With tax money from protective tariffs
- Henry Clay's *American System* - a plan that would ensure the country prosper and grow by itself, without foreign products of foreign markets. (1. Establish a protective tariff; 2. Establish a national bank; 3. Improve the country's transportation system).



Communication Revolution



- In 1844, Samuel Morse, the inventor of the first telegraph, sent the first message, called a telegram to Baltimore, Maryland.
- The invention of the telegraph made communication instant
- To be effective, telegraph wires had to be strung throughout the country, which was done by running wires along railroad tracks.