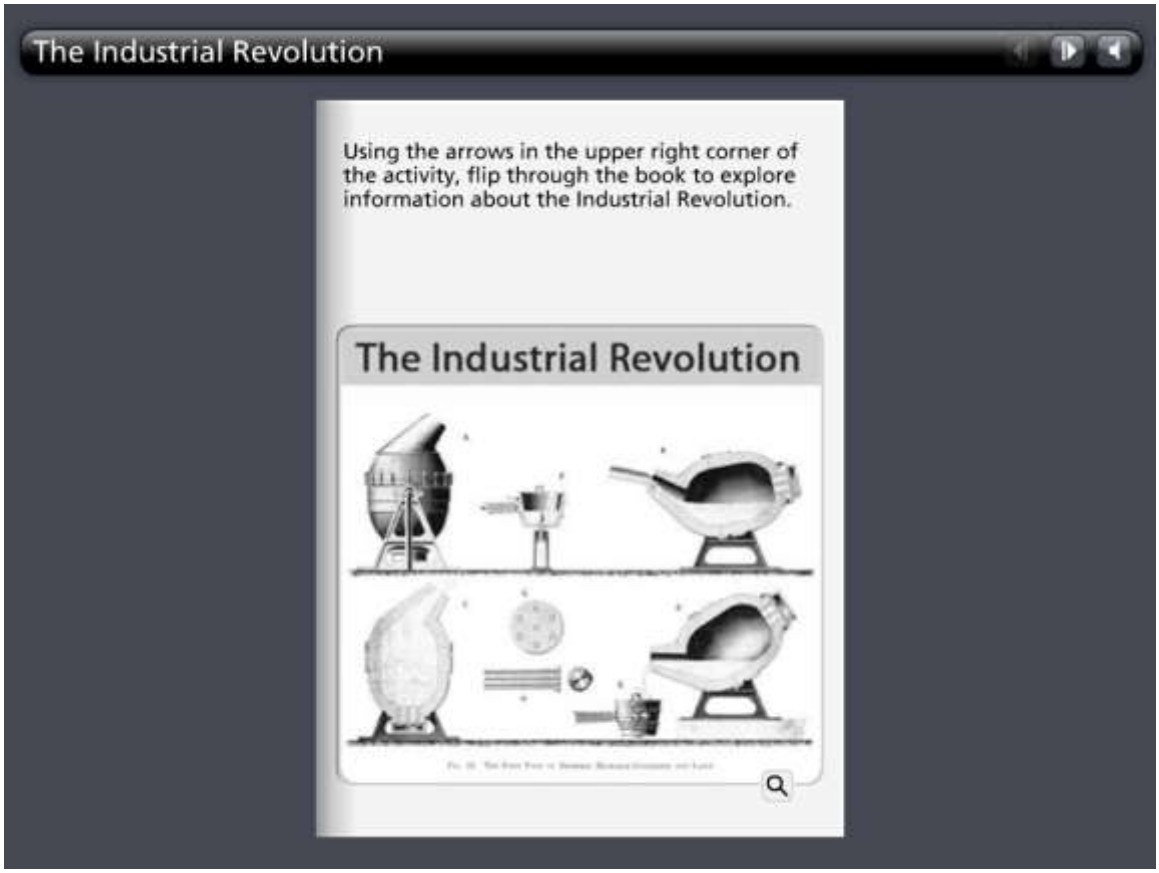
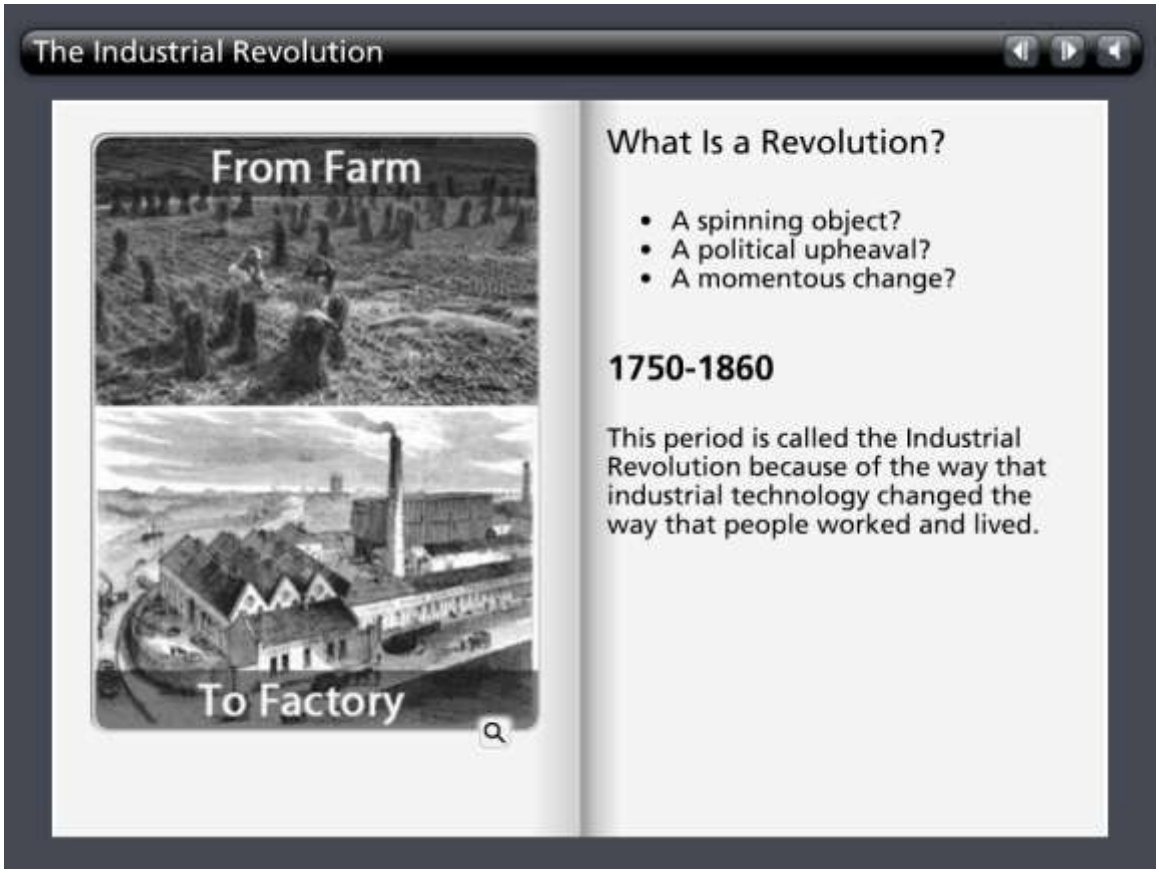
Module 7: Industrial Revolution and Its Impact
Topic 1 Content: The Industrial Revolution



What Is a Revolution?



What is a revolution and what are its characteristics? Are revolutions good or bad? The word revolution has many meanings. It can be the complete rotation of an object such as a planet, or it can be when the people of a country overthrow their government. It can also be a sudden or momentous change, such as the computer revolution that has transformed the modern-day world.

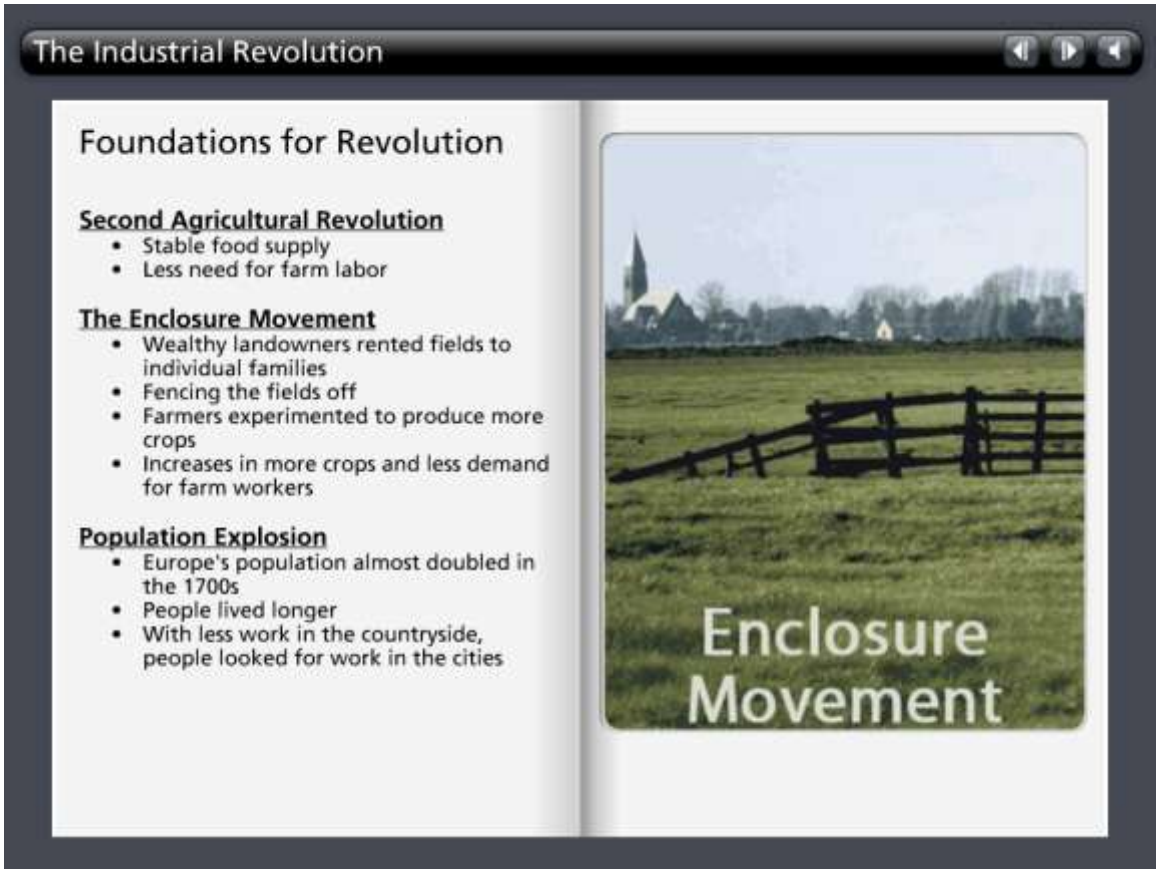
In 1750, at the dawn of the Industrial Revolution, most people grew their own food and made most of the things that they used at home. People didn't travel very far from where they lived; therefore, they knew very little about the world outside their villages.

By the 1850s, in much of Western Europe, many small towns had become large industrial cities. People bought food and clothing in stores with money that they had earned at their jobs, and most goods were made in factories by machines.

The period between 1750 and 1860 is known as the Industrial Revolution because industrial technology changed the way people worked and lived. This revolution did not happen quickly. It was a series of events over a number of years that radically reshaped the world.

What were some of these changes, and where did the revolution start?

Foundations for Revolution

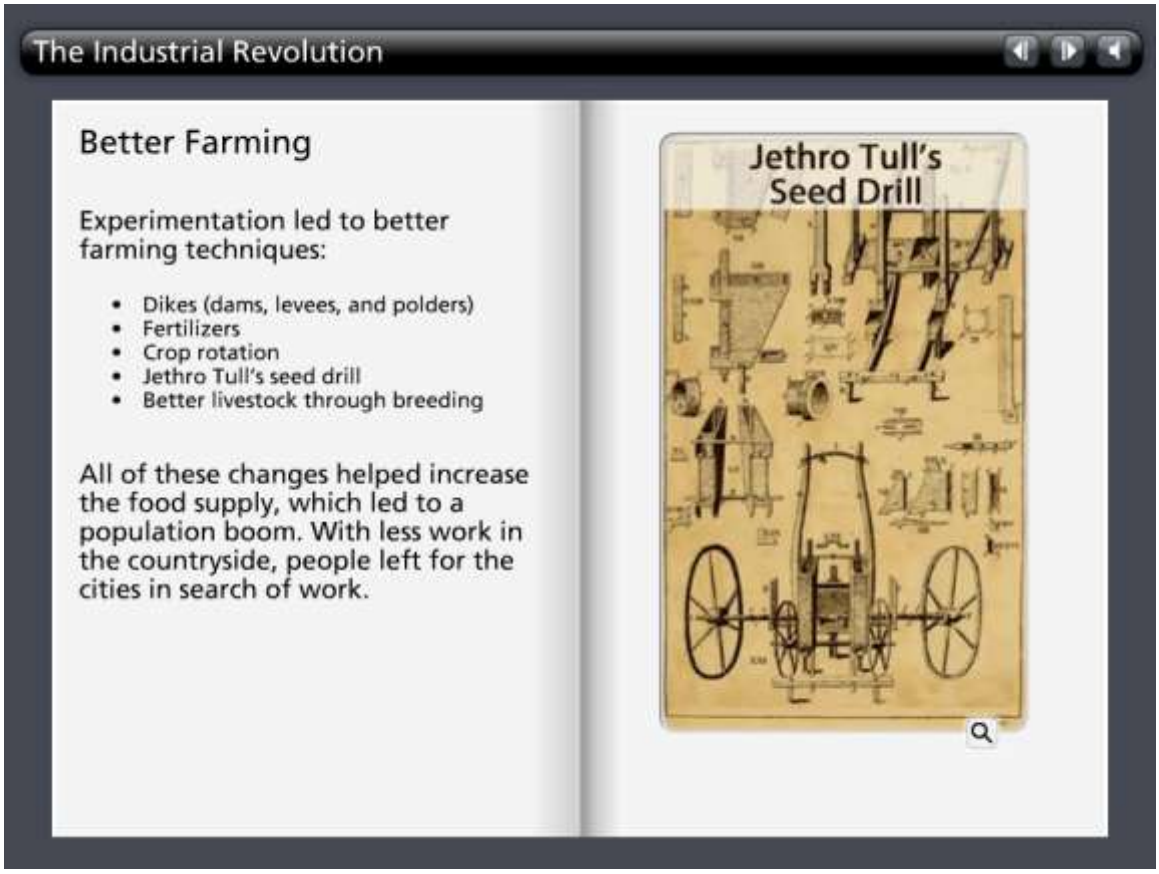


The first Agricultural Revolution occurred almost eleven thousand years ago when people began to domesticate animals and began to farm. Around 300 years ago, a second Agricultural Revolution took place that resulted in better and more plentiful crops. This revolution started in England in the 1600s when wealthy landowners began to enclose land, or take common land that was once shared in the community, and fence it off to make larger farms. With better agricultural techniques and larger farms, these wealthy landowners made the land more productive and pushed the smaller farmers off the land.

Although many farmers gave up agriculture, the Enclosure Movement resulted in more food crops and less famine. Many of those people who left farming ended up moving to cities for jobs. As a result, small towns shrank while big cities grew, a process known as urbanization.

These changes provided part of the foundation for England's industrialization. This Industrial Revolution began in England, spreading to the rest of Western Europe and to the United States. The availability of food and a smaller demand for farm workers resulted in a supply of excess labor in the countryside. Former farm workers looked for work in the new factories built in the cities during industrialization.

Better Farming

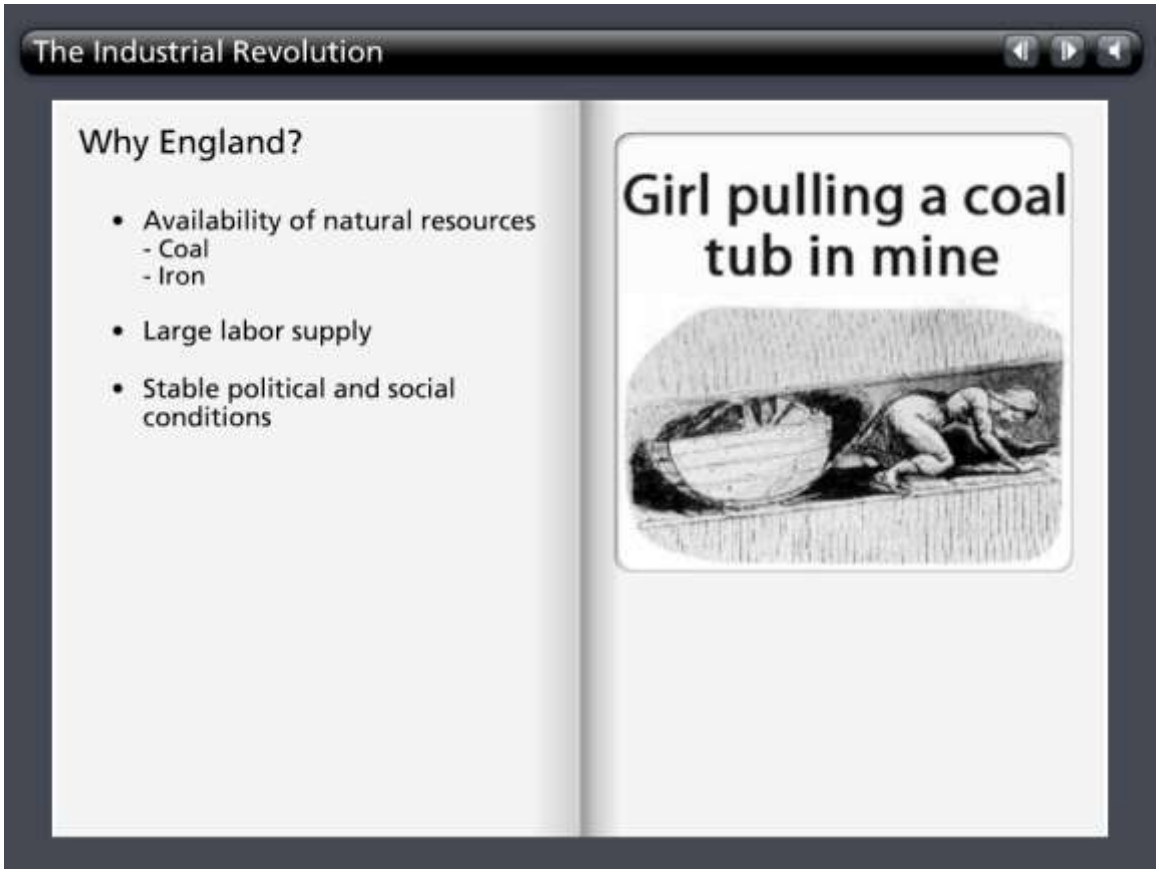


During the second Agricultural Revolution, a number of innovations increased crop production on farms. The Dutch developed a number of techniques to create dikes, or earthen dams, in order to reclaim land from the sea. They used much of this land for agriculture. Today, nearly fifty percent of the Netherlands is land reclaimed from the sea. The Dutch were pioneers in combining smaller plots into larger fields to make better use of land. They also used fertilizer from animals to replenish nutrients in the soil.

In the 1700s, the British expanded on Dutch innovations by combining different types of soils to improve the land's productivity. The British began rotating crops among different fields. This made the soil more fertile, as each crop replaced the nutrients used by the others. One year they would grow a certain crop in a field, and the next year a different crop. Each crop used specific nutrients and replaced others, so that by changing crops on a yearly basis, the soil remained more productive.

A British inventor by the name of Jethro Tull developed the seed drill, which proved to be a better method than scattering and wasting seeds. The seed drill placed the seeds into the soil in even rows at the same soil depth. Even King George III, nicknamed Farmer George, published farming journals with information about how to increase farm productivity. One of the primary reasons that the Industrial Revolution took place in England first was that the country was quick to adopt new agricultural techniques that increased food production with fewer workers. The country ended up with a surplus of food and a ready supply of workers that could no longer support themselves through farming.

Why England?

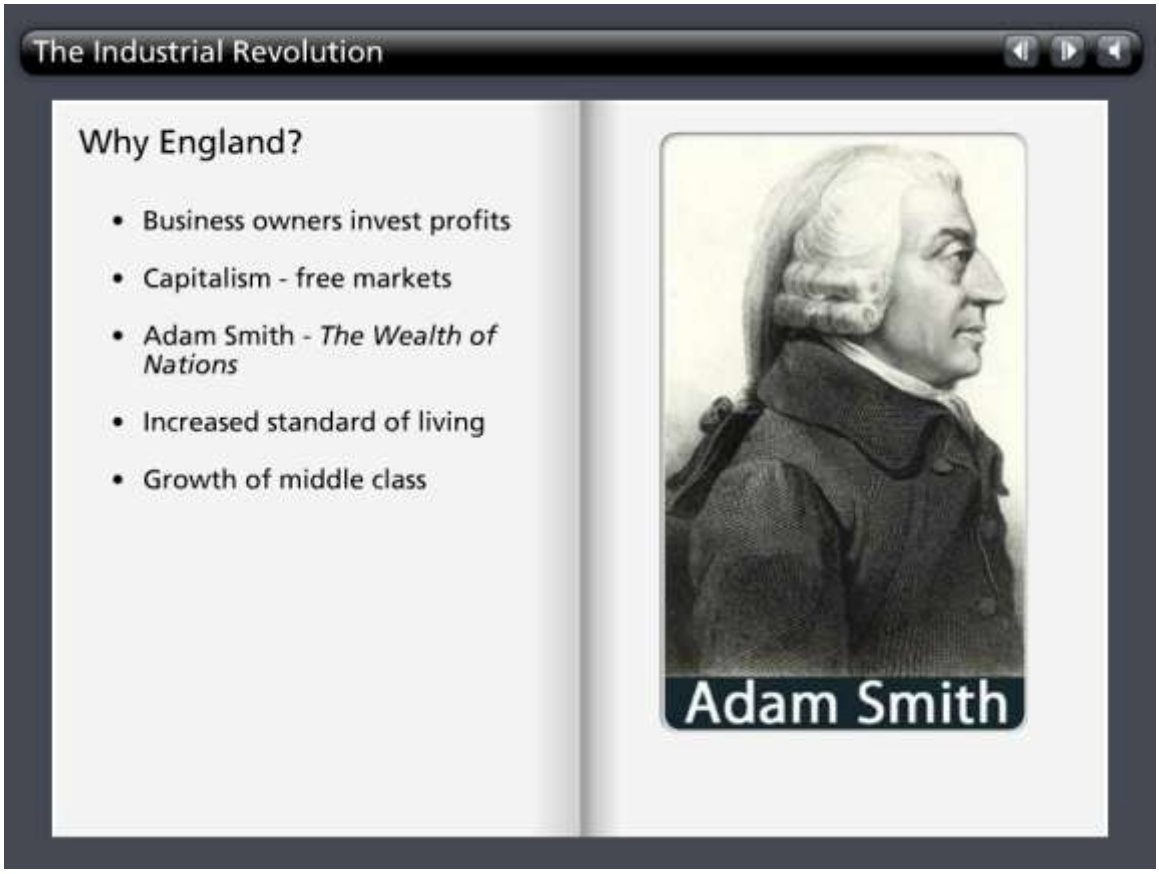


England also had a large supply of natural resources important to industry. England's coal could power steam engines, and its iron ore was important in the production of steel.

It took a lot of workers to mine these resources and run the machines. These workers also bought many of the products they produced, which helped businesses grow.

Remember how many countries in Europe experienced revolutions and war in the 1700s and 1800s? Not England. During this period, they had a relatively stable government. The British also had a strong navy that they used to control access to raw materials and markets around the world.

Why England?

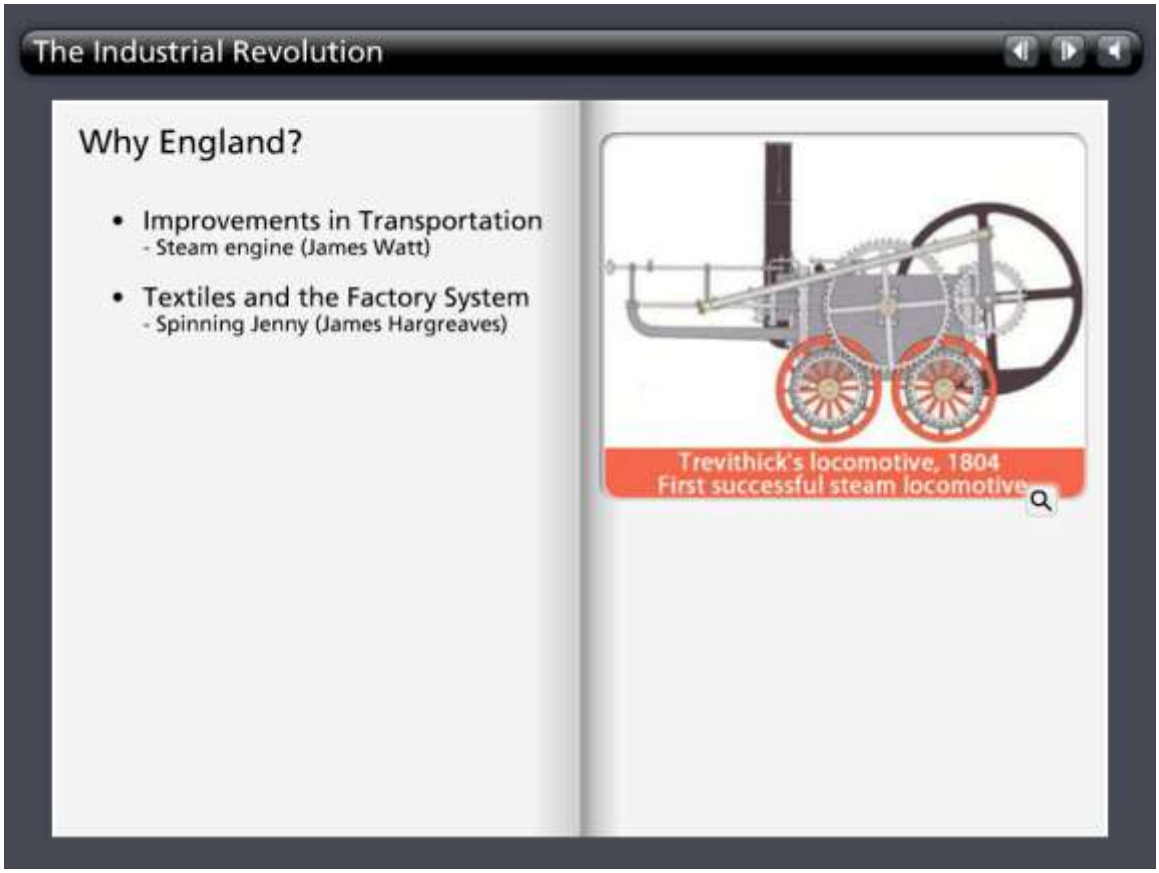


England became a wealthy country as a result of its colonial empire and large trading network. Many of the businessmen invested the money they made in new technologies, such as shipping, mines, railroads, and factories. The economic ideals of capitalism were important to England's economic success and were based in the belief that the economy does best when the government interferes as little as possible in the economic actions of individuals and businesses.

Adam Smith, one of the leading proponents of capitalism, lived in England. He is most famous for his book *The Wealth of Nations*, which lays out many of the basic principles of capitalism. His most important theory stated that businesses should be able to compete in a free-market system against one another without any interference from the government. He argued that free markets benefit everyone, not only the business owners, because they keep prices lower and encourage innovation. Also, he believed in the importance of private ownership because it encouraged people to become entrepreneurs, or people who start businesses based on new ideas.

England wasn't the only country with a capitalist economy, but it was the most advanced. As businesses grew under these new economic ideas, the standard of living went up for many people, and the middle class grew in England and Europe. Many of the factory workers were not part of this middle class, and they often lived in poverty in the cities.

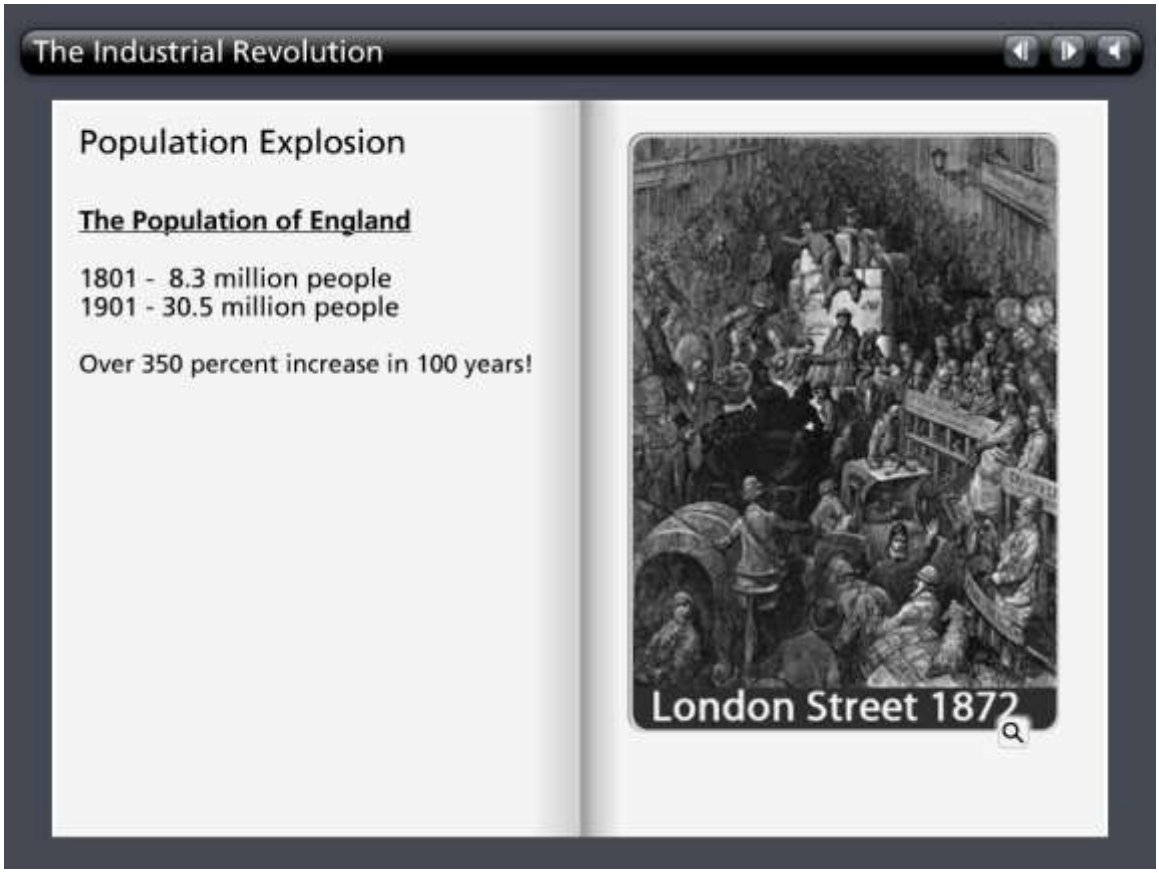
Why England?



James Watt's new and improved steam engine led to the growth of the railroads that began to cover most of England. As the railroads grew, people and goods could move long distances in a short time. The steam engine also became the main power source for many of the new machines in the factories, thus it was key to the growth of England's businesses.

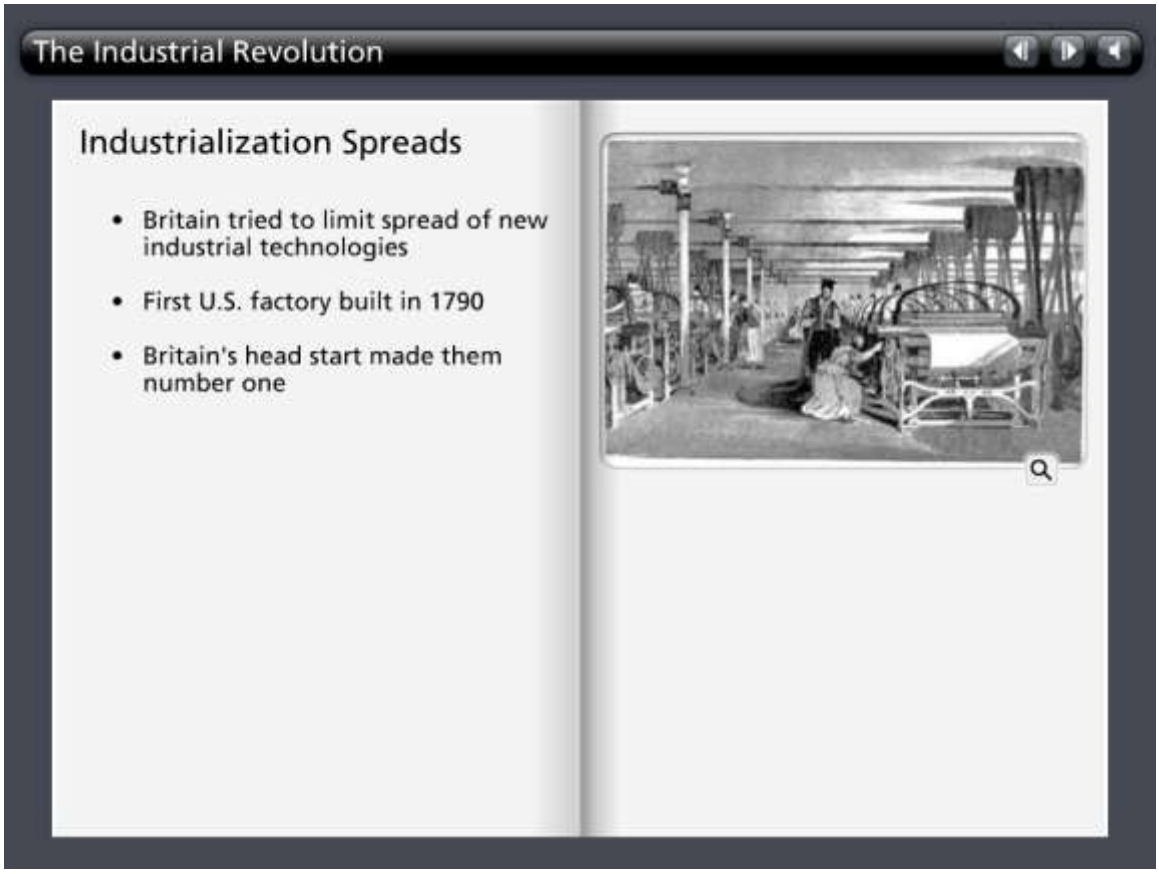
England had been the leading producer of textiles for a long time. During the Industrial Revolution, businesses looked for new, faster ways to create cloth in order to meet the demand of the growing population. A series of inventions, such as James Hargreaves' spinning jenny, were developed so that machines could spin and weave cloth. Previously, textile production was a cottage industry. Workers wove the cloth at home to make additional money. Since these new machines for weaving cloth were expensive and difficult to operate, several of the machines were placed in one building and operated by factory workers, leading to the rise of the factory system. As businesses became more mechanized, the factory system became the norm for most industries.

Population Explosion



The Agricultural Revolution led to an increase in the food supply. At the same time, advances in medicine extended the average person's life expectancy. As a result, England's population exploded during the 1800s. In 1801, England's population was 8.3 million people. Just one hundred years later, it grew to 30.5 million - an increase of more than 350 percent! Obviously, this had a dramatic impact on the average person, as well as the country as a whole.

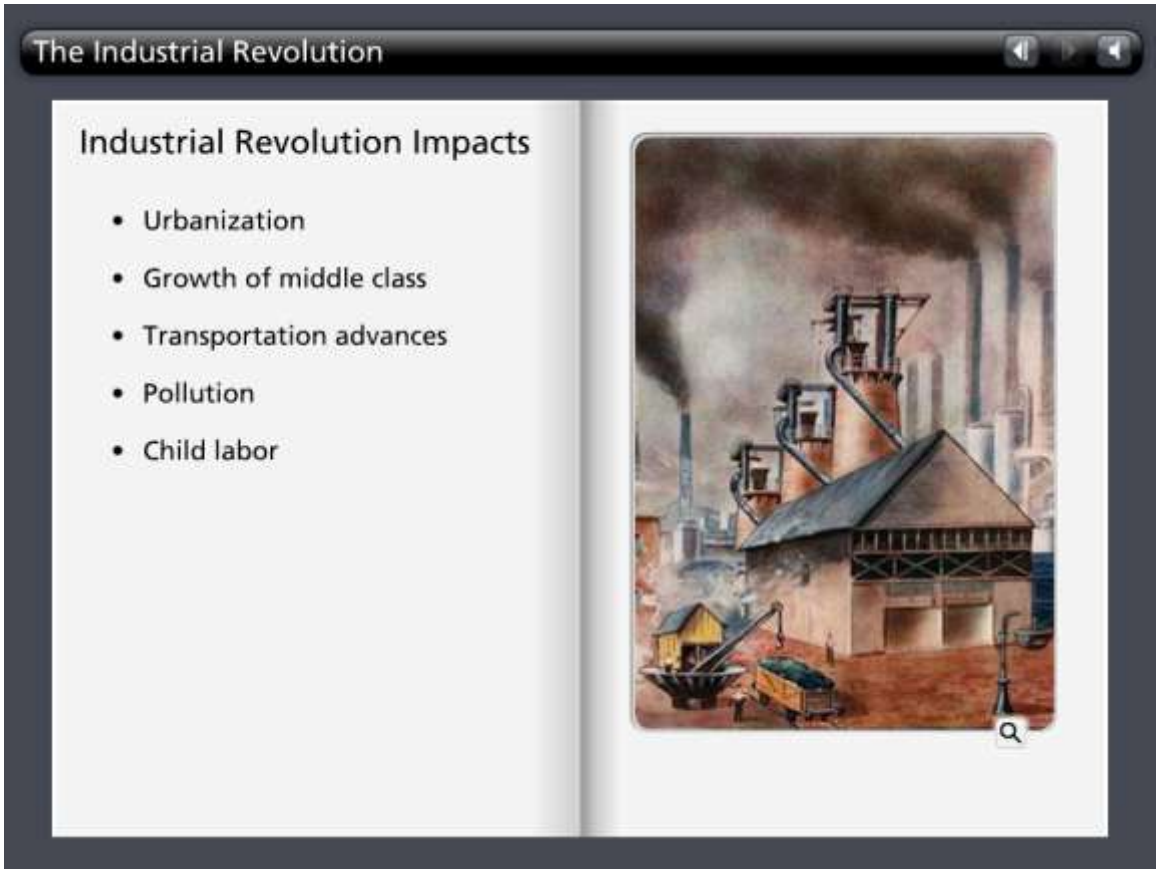
Industrialization Spreads



Britain tried to maintain its economic advantage over other countries by limiting the spread of these new industrial technologies; however, the Industrial Revolution could not be contained.

The first factory in the United States was built in 1790. Shortly after 1800, the rest of Europe began to industrialize, despite the political unrest occurring at the time. Still, Britain's head start made them the most powerful and wealthiest country.

Industrial Revolution Impacts



As the Industrial Revolution spread, it transformed the world. Increases in food production and medical advances led to a population boom in Europe and North America. People moved to cities in search of work in the new factories. Many people joined the growing middle class and enjoyed a higher standard of living.

Transportation increased as turnpikes were built. These were privately built roads that people had to pay money to use. The first steam-powered locomotive to run on a railway was invented by George Stephenson in 1814, and the first major railroad was built in 1830. The steamboat, invented by American Robert Fulton, moved goods at record speeds. By the late 1800s, coal-powered freighters with iron hulls were hauling ten to twenty times the cargo that wooden ships could carry.

Not all of the effects of the Industrial Revolution were positive. Pollution became a major problem. European cities were very dirty and produced waste that was released into the environment. Coal-burning factories created a large amount of air pollution.

Some factory owners abused the children working in their factories, so new laws were created that regulated child labor. In some areas, elementary school became mandatory in order to ensure that children received an education and were not placed into factories to work at an early age. Although life improved for many people during this period, poor working conditions and low wages in the factories led some workers to challenge the existing laws. This led to cultural and social changes throughout Europe.