

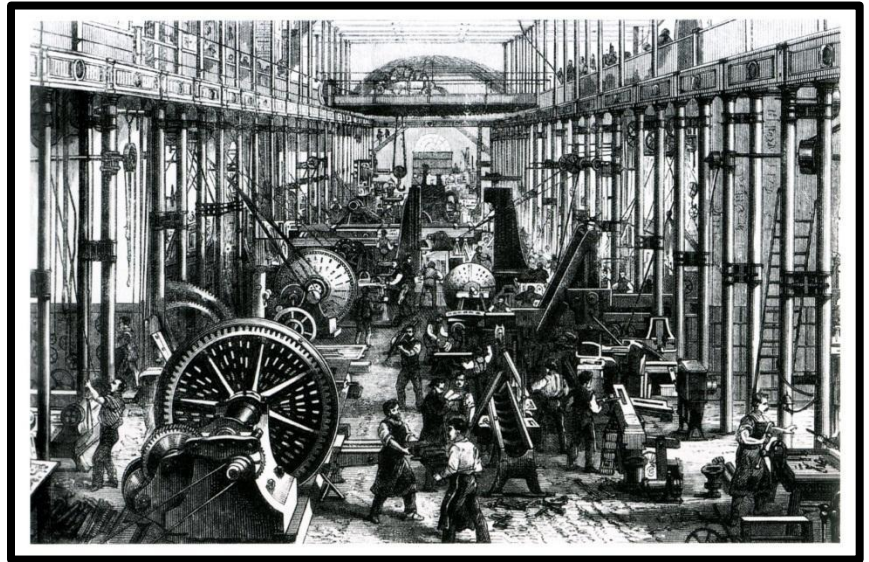
# The Industrial Revolution



**Enduring Understanding:** The global spread of democratic ideas and nationalist movement occurred during the nineteenth century. To understand the effects of nationalism, industrialism, and imperialism, you will explain how the Industrial Revolution caused economic, cultural, and political changes around the world.

The Industrial Revolution began in Great Britain in the late 1700s. It followed the Agricultural Revolution. **The Agricultural Revolution** is a time when new inventions and techniques, such as crop rotation, were created to make farming easier and faster. Because of this farming became more profitable and increased agricultural yields, leading to a population increase. When Parliament allowed landowners to purchase and fence off **common land**, which is public land that anyone could farm, peasant farmers could no longer farm on this land. This is known as the **enclosure movement**. These peasant farmers were forced to migrate from rural areas to urban areas (cities) in search of jobs. This is called **rural-to-urban migration** or **urbanization**.

Great Britain had the **factors of production** needed for industrialization, including natural resources, rivers and harbors, experienced entrepreneurs, rising population, political stability, increasing world trade, and economic prosperity and progress. Following its start in Great Britain, the Industrial Revolution spread to the United States and those countries of continental Europe in which factors of production were available such as Belgium and Germany. Later, in Japan, industrialization began as a response to growing imperialist threats against the nation.



### Section Review

- 1) What was the Agricultural Revolution?
- 2) What was the “enclosure movement”?
- 3) What are the factors of production?
- 4) Why did the Industrial Revolution spread to the United States?
- 5) What five major countries were able to industrialize? Why?

The Industrial Revolution caused major economic, cultural, and political changes around the world. The Industrial Revolution was an economic revolution, and therefore

economic changes were widespread and still continue to impact our world today. These economic changes led to cultural and political changes.



These economic changes began in the **textile** (cloth) industry with the invention of machines. New textile machines for spinning and weaving, chores that had previously been done by hand, increased the production of cloth goods. The modernization of textile technology revolutionized industrialization.

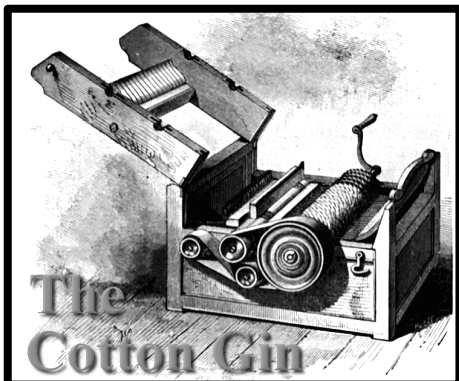
### Section Review

6) What are economics?

7) What is a textile?

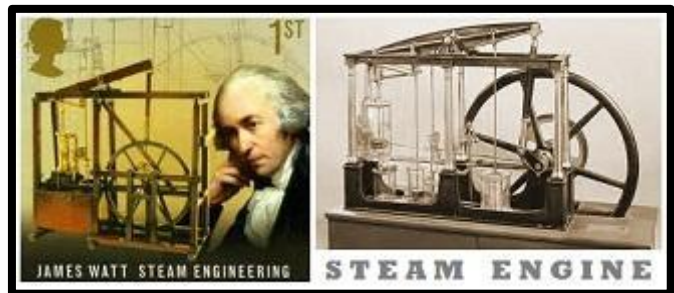
The **flying shuttle** advanced textile production by doubling the amount of weaving a worker could do in one day. This machine was soon joined by the more advanced **spinning jenny**, which allowed one spinner to spin eight threads at a time. At first operated by hand, these machines were soon powered by the **water frame**. In 1779, the **spinning mule** was invented as a combination of the spinning jenny and water frame. The mule produced a stronger product than its predecessors. In 1787, the water-powered **power loom**

increased the speed of weaving yet again.



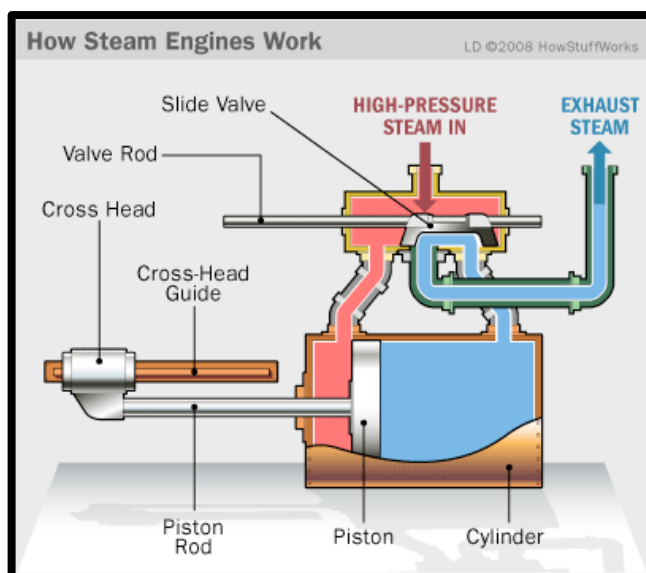
The **cotton gin**, invented by Eli Whitney, significantly increased cotton production following its invention in 1793. **Factories** were built to house the machines replacing the "**cottage industries**" of handwork previously done at home. Therefore, jobs were moved to factories. Due to the increasing demand for waterpower to drive machines, factories were built near

rivers or streams. These factories were built in existing cities or established towns near water sources. After the development of the **steam engine**, which was invented by James Watt, factories began being built away from water sources because the steam engine became the new power source for machines. Coal and iron were the main resources used to power and build these engines and machines. The second wave of the Industrial Revolution began in the 1870s. Electricity, chemicals, and steel were the main sources for industries during the second wave.



### Section Review

- 8) How did the textile industry change over time?
- 9) Why was the cotton gin important?
- 10) What is the cottage industry?
- 11) How were factories first powered?
- 12) Where were factories first located? Why?



Transportation improved with the development of the steam engine as well. The steam engine was soon used to power **steamboats** and **locomotives** (trains), leading to the building of canals and railways for trade and transportation. The railroad boom created new jobs for railroad workers and miners. They were needed to obtain coal to power the new engines. With less expensive means of trade and transport of goods, industries developed and trade over longer distances grew. Travel for humans was easier as well.

The development of the factory system led

to the **division of labor**. Individuals were assigned specific tasks, which increased worker productivity and increased output of manufactured goods. **Interchangeable parts**, identical parts rather than unique items made by hand, made it possible to mass produce and repair many goods with the aid of machines. **Mass production** allowed goods to be produced for a cheaper price, making them more accessible to an increasing portion of the population.

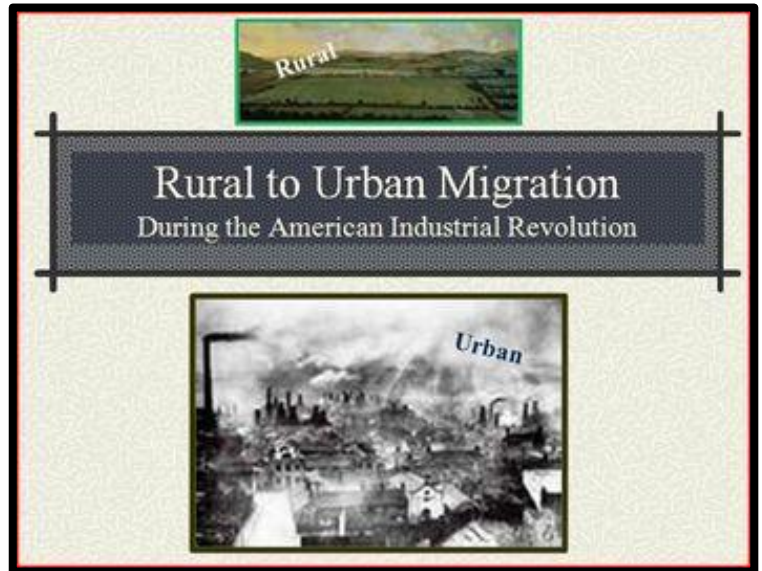
Workers spent long hours in the factories. Often they worked fourteen hours a day, six days a week. The working conditions were dangerous and often resulted in injury, but there was no recourse or support for such injuries.



### Section Review

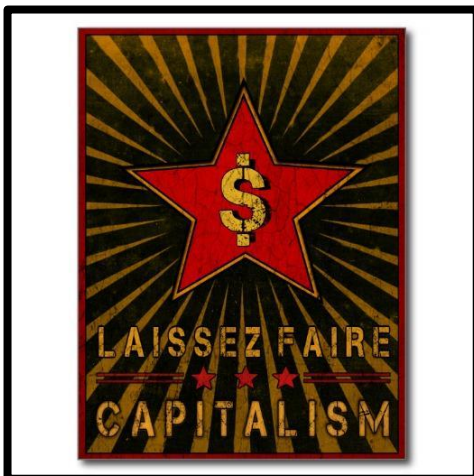
- 13) How did the steam engine lead to more industrialization?
- 14) How did division of labor increase productivity?
- 15) What is mass production?
- 16) How were workers affected by industrialization?

Rural-to-urban migration led to many social changes. Unfortunately, the division of labor also made clear the division between the worker and owner classes. Many European cities doubled in population during this period of history. Because of the low pay for workers and because the living conditions in cities were unregulated or not monitored by the government, housing conditions were often very poor. The working class lived in crowded areas often without basic utilities such as running water. Conditions were often unsanitary due to these circumstances. Pollution from the factories increased, crime increased due to poverty, and police protection was often inadequate. The middle and upper classes, usually business owners or other professionals, typically moved to nicer homes in the suburbs, which was a tangible reflection of the growing class divisions.



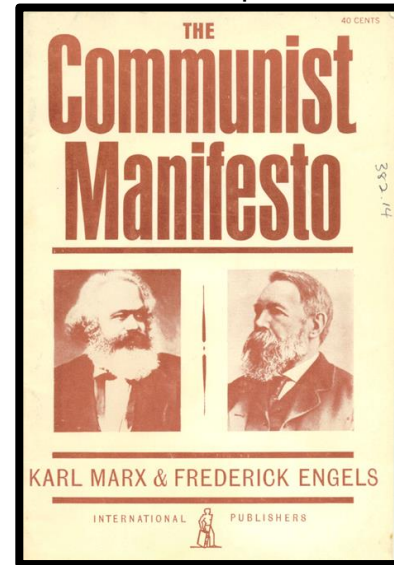
### Section Review

- 17) How did rural-to-urban migration impact society?
- 18) How did city structures change during industrialization?



Because working conditions were so dangerous and because of the growing class divisions, further economic changes began along with political changes. **Laissez-faire capitalism** was the foundation of the Industrial Revolution, as this was the economic system in which all factors of production were privately owned and there was no government interference. But capitalism, based on laws of competition, supply and demand, and self-interest, also allowed for great disparity in wealth, which means that there was a large gap between rich and poor. Supporters of capitalism opposed the creation of minimum wage laws and better working conditions, believing that it would upset the free-market system and weaken the production of wealth.

The working class was increasingly oppressed by the middle and upper classes. Support of **socialism** began to rise. People believed that socialism would provide greater welfare of the masses of working class people and allow the government to plan the economy in order to promote equality and end poverty. Socialism at that time offered workers more protection than capitalism and it also promised that it would better distribute wealth according to need. **Karl Marx** and **Friedrich Engels**, writing in ***The Communist Manifesto***, proposed a radical socialism, stating that society was dividing into warring classes. It was proposed that the **proletariats**, the “have-nots” or the factory workers, who were oppressed in their current conditions, would overthrow the **bourgeoisie**, the “haves”, or the factory owners, and create a “dictatorship of the proletariat.” Although this proletariat revolution did not occur during the Industrial Revolution, Marx provided the fuel for future reforms and revolutions.



### Section Review

- 19) What is Laissez-Faire Capitalism?
- 20) What did supporters of capitalism oppose?
- 21) What is socialism?
- 22) Who wrote the *Communist Manifesto*?
- 23) Who are the proletariat? Who are the bourgeoisie?



In addition to the rise of socialism, labor unions and reform laws came about in the 1800s as a means to correct the disparities between social classes. **Labor unions** negotiated for better working conditions, higher pay, and shorter hours for factory workers.

Unions would **strike**, or refuse to work, if demands were not met. These unions were restricted at first, but over time achieved little success. In the 1830s, the British Parliament began regulating mine and factory conditions for women and children, bringing much needed reform.

While individual gaps in wealth were problematic at this time, a global wealth gap also was occurring. As industrialized nations gained power over non-industrialized nations, these industrial powers began looking to exploit or take advantage of the weaker nations for resources and markets. Thus, **imperialism** was born out of the industrial era.

### Section Review

24) What are labor unions?

25) What reforms did Parliament create beginning in the 1830s?

26) What worldwide changes took place because of industrialism?



## Sources:

Image 1: "The Industrial Revolution Changes the World." : *Process*. N.p., n.d. Web. 19 June 2014. <<http://questgarden.com/111/40/6/101026140543/process.htm>>.

Image 2: "Hartmann Maschinenhalle 1868."  
*Http://commons.wikimedia.org/wiki/File:Hartmann\_Maschinenhalle\_1868*. Wikimedia Commons, n.d. Web. 19 June 2014.  
<[http://commons.wikimedia.org/wiki/File:Hartmann\\_Maschinenhalle\\_1868\\_%2801%29.jpg](http://commons.wikimedia.org/wiki/File:Hartmann_Maschinenhalle_1868_%2801%29.jpg)>.

Image 3: "The Radium Girls' Story." *The Feminist EZine*. N.p., n.d. Web. 19 June 2014.  
<<http://www.feministezine.com/feminist/modern/Radium-Girls.html>>.

Image 4: "Lisa M. Lane's History of England: Industrialization." *Lisa M. Lane's History of England: Industrialization*. N.p., n.d. Web. 19 June 2014.  
<<http://lisahistory.net/hist105/pw/lectures/industry/industry.htm>>.

Image 5: "Guide to the Cotton Gin." *K-12 TLC Guide to the Cotton Gin*. University of South Florida, n.d. Web. 19 June 2014. <<http://www.k12tlc.net/content/cottongi.htm>>.

Image 6: "Inventors." *Bengalstudents.com*. Bengal Students, n.d. Web. 19 June 2014.  
<<http://bengalstudents.com/content/article-tags/inventors>>.

Image 7: Brain, Marshall. "How Steam Engines Work." *HowStuffWorks*. HowStuffWorks.com, 01 Apr. 2000. Web. 18 June 2014.  
<<http://science.howstuffworks.com/transport/engines-equipment/steam1.htm>>.

Image 8: "Portal 2, Un Análisis a Fondo a Nivel Intelectual." *Taringa!* N.p., n.d. Web. 19 June 2014. <<http://www.taringa.net/posts/info/16406318/Portal-2-un-analisis-a-fondo-a-nivel-intelectual.html>>.

Image 9: "Rural to Urban Migration - American Industrial Revolution Lecture." *Teachers Pay Teachers*. N.p., n.d. Web. 19 June 2014.  
<<http://www.teacherspayteachers.com/Product/Rural-to-Urban-Migration-American-Industrial-Revolution-Lecture-282486>>.

Image 10: "Http://www.zazzle.com/laissez+faire+capitalism+gifts." *Zazzle.com*. N.p., n.d. Web. 19 June 2014.  
<<http://www.zazzle.com/laissez+faire+capitalism+gifts>>.

Image 11: Nolen, Larry. "The OF Blog: Karl Marx and Friedrich Engels, The Communist Manifesto." *The OF Blog: Karl Marx and Friedrich Engels, The Communist Manifesto*. N.p., n.d. Web. 19 June 2014. <<http://ofblog.blogspot.com/2014/03/karl-marx-and-friedrich-engels.html>>.

Image 12: "U.S. History - Unit I Labor Unions." *YouTube*. YouTube, n.d. Web. 19 June 2014. <[http://www.youtube.com/watch?v=3X\\_hEAjHnf0](http://www.youtube.com/watch?v=3X_hEAjHnf0)>.