THE INDUSTRIAL REVOLUTION

A Hand Loom, such as was used before 1785
Arkwright’s First Spinning Frame

THE FIRST INDUSTRIAL REVOLUTION
Historical Significance of the Industrial Revolution

- An ancient Greek or Roman would have been just as comfortable in Europe in 1700 because daily life was not much different – agriculture and technology were not much changed in 2000+ years.
- The Industrial Revolution changed human life drastically.
- More was created in the last 250+ years than in the previous 2500+ years of known human history.
What was the Industrial Revolution?

- The Industrial Revolution was a fundamental change in the way goods were produced, from human labor to machines.
The Industrial Revolution

- Machines were invented which replaced human labor
- New energy sources were developed to power the new machinery – water, steam, electricity, oil (gas, kerosene)
- Increased use of metals and minerals
  - Aluminum, coal, copper, iron, etc.
The Industrial Revolution

- Transportation improved
  - Ships
    - Wooden ships → Iron ships → Steel ships
    - Wind-powered sails → Steam-powered boilers
  - Trains
  - Automobiles

- Communication improved
  - Telegraph
  - Telephone
  - Radio
Developments

- Mass production of goods
  - Increased numbers of goods
  - Increased diversity of goods produced
- Development of factory system of production
- Rural-to-urban migration
  - People left farms to work in cities
- Development of capitalism
  - Financial capital for continued industrial growth
- Development and growth of new socio-economic classes
  - Working class, bourgeoisie, and wealthy industrial class
- Commitment to research and development
  - Investments in new technologies
  - Industrial and governmental interest in promoting invention, the sciences, and overall industrial growth
Background of the Industrial Revolution

- Commercial Revolution
  - 15th, 16th, and 17th centuries
  - Europeans expanded their power worldwide
  - Increased geographic knowledge
  - Colonies in the Americas and Asia
  - Increased trade and commerce
  - Guild system could not meet the demands of increasing numbers of goods
Background of the Industrial Revolution

- **Scientific Revolution**
  - 17\textsuperscript{th} and 18\textsuperscript{th} centuries
  - Discoveries of Boyle, Lavoisier, Newton, etc.

- **Intellectual Revolution**
  - 17\textsuperscript{th} and 18\textsuperscript{th} centuries
  - Writings of Locke, Voltaire, etc.

- **Atmosphere of discovery and free intellectual inquiry**
  - Greater knowledge of the world
  - Weakened superstition and tradition
  - Encouraged learning and the search for better and newer ways of doing things
Development of the Domestic System of Production

- Domestic system developed in England
- Late 1600s-late 1800s
- Domestic system of production – “putting out” system
  - Businesspeople delivered raw materials to workers’ homes
  - Workers manufactured goods from these raw materials in their homes (typically articles of clothing)
  - Businesspeople picked up finished goods and paid workers wages based on number of items
- Domestic system could not keep up with demand
Factory System

- Developed to replace the domestic system of production
- Faster method of production
- Workers concentrated in a set location
- Production anticipated demand
  - For example: Under the domestic system, a woman might select fabric and have a businessperson give it to a home-based worker to make into a dress. Under the factory system, the factory owner bought large lots of popular fabrics and had workers create multiple dresses in common sizes, anticipating that women would buy them.
<table>
<thead>
<tr>
<th></th>
<th>Domestic System</th>
<th>Factory System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methods</strong></td>
<td>• Hand tools</td>
<td>• Machines</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>• Home</td>
<td>• Factory</td>
</tr>
<tr>
<td><strong>Ownership and Kinds of Tools</strong></td>
<td>• Small hand tools owned by worker</td>
<td>• Large power-driven machines owned by the capitalist</td>
</tr>
<tr>
<td><strong>Production Output</strong></td>
<td>• Small level of production</td>
<td>• Large level of production</td>
</tr>
<tr>
<td></td>
<td>• Sold only to local market</td>
<td>• Sold to a worldwide market</td>
</tr>
<tr>
<td></td>
<td>• Manufactured on a per-order basis</td>
<td>• Manufactured in anticipation of demand</td>
</tr>
<tr>
<td><strong>Nature of Work Done by Worker</strong></td>
<td>• Worker manufactured entire item</td>
<td>• Worker typically made one part of the larger whole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Henry Ford’s assembly line (early 20th century) kept workers stationary</td>
</tr>
<tr>
<td><strong>Hours of Work</strong></td>
<td>• Worker worked as much as he/she would and could, according to demand</td>
<td>• Worker worked set daily hours</td>
</tr>
<tr>
<td><strong>Worker Dependence on Employer</strong></td>
<td>• Worker had multiple sources of sustenance—other employers, own garden or farm, and outside farm labor</td>
<td>• Worker relied entirely on capitalist for his/her income—urban living made personal farming and gardening impractical</td>
</tr>
</tbody>
</table>
England: Birthplace of the Industrial Revolution

- No concrete start date for the Industrial Revolution
- Marked by gradual, slow changes
- After 1750 – these changes were noticeable first in England
Why the Industrial Revolution Started in England

- Capital for investing in the means of production
- Colonies and Markets for manufactured goods
- Raw materials for production
- Workers
- Merchant marine
- Geography
England’s Resources: Capital

- The Commercial Revolution made many English merchants very wealthy.
- These merchants had the capital to invest in the factory system – money to buy buildings, machinery, and raw materials.
England’s Resources: Colonies and Markets

- Wealth from the Commercial Revolution spread beyond the merchant class
- England had more colonies than any other nation
- Its colonies gave England access to enormous markets and vast amounts of raw materials
- Colonies had rich textile industries for centuries
  - Many of the natural cloths popular today, such as calico and gingham, were originally created in India
  - China had a silk industry
England’s Resources: Raw Materials

- England itself possessed the necessary raw materials to create the means of production

- Coal – vast coal reserves powered steam engines

- Iron – basic building block of large machines, railroad tracks, trains, and ships
England’s Resources: Workers

- Serfdom and guilds ended earlier in England than other countries
- English people could freely travel from the countryside to the cities
- Enclosure Acts – caused many small farmers to lose their lands, and these former farmers increased the labor supply
England’s Resources: Merchant Marine

- World’s largest merchant fleet
- Merchant marine built up from the Commercial Revolution
- Vast numbers of ships could bring raw materials and finished goods to and from England’s colonies and possessions, as well as to and from other countries
England’s Resources: Geography

- England is the political center of Great Britain, an island
- Great Britain (as the entire island was called beginning in 1707) did not suffer fighting on its land during the wars of the 18th century
- Island has excellent harbors and ports
- Damp climate benefited the textile industry (thread did not dry out)
- Government stable
- No internal trade barriers
“Necessity Is the Mother of Invention”

Spinning machine

Need to speed up weaving

Power loom created
“Necessity Is the Mother of Invention”

Power loom

Increased demand for raw cotton

Invention of the cotton gin
“Necessity Is the Mother of Invention”

- Cotton gin
- Demands for stronger iron
- Improvements in iron smelting and the development of steel (Bessemer process)
Using page 614, answer the following

1. Where did Britain get cotton cloth?
2. Describe the putting out system.
3. Describe the flying shuttle. Why was it important?
4. Who was Eli Whitney? What was the impact of his invention?
5. Why did manufacturers build factories?
6. Why did the Industrial Rev begin in the textile industry?
The Textile Industry

- Textiles – cloths or fabrics
- First industry to be industrialized
- Great Britain learned a lot about textiles from India and China
The Birth and Growth of the Textile Industry

<table>
<thead>
<tr>
<th>John Kay (English)</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Flying shuttle, 1733</td>
<td>Hand-operated machine which increased the speed of weaving</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>James Hargreaves (English)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinning jenny, 1765</td>
<td>Home-based machine that spun thread 8 times faster than when spun by hand</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Richard Arkwright (English)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water frame, 1769</td>
<td>Water-powered spinning machine that was too large for use in a home – led to the creation of factories</td>
</tr>
</tbody>
</table>
### The Birth and Growth of the Textile Industry

<table>
<thead>
<tr>
<th>Inventor</th>
<th>Invention</th>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samuel Crompton (English)</td>
<td>Spinning mule</td>
<td>1779</td>
<td>Combined the spinning jenny and the water frame into a single device, increasing the production of fine thread</td>
</tr>
<tr>
<td>Edward Cartwright (English)</td>
<td>Power loom</td>
<td>1785</td>
<td>Water-powered device that automatically and quickly wove thread into cloth</td>
</tr>
<tr>
<td>Eli Whitney (American)</td>
<td>Cotton gin</td>
<td>1793</td>
<td>Device separated raw cotton from cotton seeds, increasing the cotton supply while lowering the cost of raw cotton</td>
</tr>
<tr>
<td>Elias Howe (American)</td>
<td>Sewing machine</td>
<td>1846</td>
<td>Speed of sewing greatly increased</td>
</tr>
</tbody>
</table>
Development of Steam Engines

- Early water power involved mills built over fast-moving streams and rivers

- Early water power had problems
  - Not enough rivers to provide the power needed to meet growing demand
  - Rivers and streams might be far removed from raw materials, workers, and markets
  - Rivers are prone to flooding and drying
Steam Power

- Humans tried harnessing steam power for millennia
  - Hero of Alexandria, Egypt – created a steam-driven device in the 1st century B.C.E.
- Thomas Newcomen, England (1704)
  - Created a steam engine to pump water from mines
- James Watt, Scotland (1769)
  - Improved Newcomen’s engine to power machinery
Steam Engines

- By 1800, steam engines were replacing water wheels as sources of power for factories
- Factories relocated near raw materials, workers, and ports
- Cities grew around the factories built near central England’s coal and iron mines
  - Manchester, Liverpool
“Necessity Is the Mother of Invention”

As more steam-powered machines were built, factories needed more coal to create this steam.

Mining methods improved to meet the demand for more coal.

• The process of inventing never ends.
• One invention inevitably leads to improvements upon it and to more inventions.
Coal and Iron

- Vast amounts of fuel were required to smelt iron ore to burn out impurities
- Abraham Darby (1709)
  - Discovered that heating coal turned it into more efficient coke
- John Smeaton (1760)
  - Smelted iron by using water-powered air pumps to create steam blasts
- Henry Cort (1783)
  - Developed the puddling process which purified and strengthened molten iron
Increases in Coal and Iron Production, 1770-1800

- Coal production doubled
  - 6 million to 12 million tons

- Pig iron production increased 250%
  - 1800 – 130,000 tons

- Great Britain produced as much coal and iron as every other country combined
Bessemer Process and Steel

- Prior to the Industrial Revolution, steel was difficult to produce and expensive
- Henry Bessemer, 1856
  - Developed the Bessemer process
  - Brought on the “Age of Steel”
  - Steel is the most important metal used over the past 150+ years
- Other improvements in steel production
  - Open-hearth furnace
  - Electric furnace
  - Use of other metals to produce various types of steel
Transportation

Increased production

Search for more markets and raw materials

Better and faster means of transportation

Before the Industrial Revolution
• Canal barges pulled by mules
• Ships powered by sails
• Horse-drawn wagons, carts, and carriages

After the Industrial Revolution
• Trains
• Steamships
• Trolleys
• Automobiles
In groups of two:

1. Describe two other important uses of steam?
2. Look over this list of inventions. Decide as a group, which two inventions are the most important to the Industrial Revolution. Be prepared to defend your answer....
# Transportation Revolution

<table>
<thead>
<tr>
<th>Robert Fulton</th>
<th>Thomas Telford and John McAdam</th>
<th>George Stephenson</th>
</tr>
</thead>
<tbody>
<tr>
<td>(American)</td>
<td>(British)</td>
<td>(English)</td>
</tr>
<tr>
<td>• Steamboat (1807)</td>
<td>• Macadamized roads (1810-1830)</td>
<td>• Locomotive (1825)</td>
</tr>
<tr>
<td>• Sped water transportation</td>
<td>• Improved roads</td>
<td>• Fast land transport of people and goods</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Gottlieb Daimler</th>
<th>Rudolf Diesel</th>
<th>Orville and Wilbur Wright</th>
</tr>
</thead>
<tbody>
<tr>
<td>(German)</td>
<td>(German)</td>
<td>(American)</td>
</tr>
<tr>
<td>• Gasoline engine (1885)</td>
<td>• Diesel engine (1892)</td>
<td>• Airplane (1903)</td>
</tr>
<tr>
<td>• Led to the invention of the automobile</td>
<td>• Cheaper fuel</td>
<td>• Air transport</td>
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</tbody>
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Steamboats

- Robert Fulton invented the steamboat in 1807
- The *Clermont* operated the first regular steamboat route, running between Albany and New York City
- 1819 – the *Savannah* used a steam engine as auxiliary power for the first time when it sailed across the Atlantic Ocean
- 1836 – John Ericsson invented a screw propeller to replace paddle wheels
- 1838 – the *Great Western* first ship to sail across the Atlantic on steam power alone, completing the trip in 15 days
Macadamized Roads

- Strong, hard roads invented by Thomas Telford and John McAdam
- Improvement over dirt and gravel roads
- Macadamized roads have a smooth, hard surface that supports heavy loads without requiring a thick roadbed
- Modern roads are macadamized roads, with tar added to limit the creation of dust
Railroads

- 1830 – Stephenson’s “Rocket” train traveled the 40 miles between Liverpool and Manchester in 1 1/2 hours
- 1830-1870 – railroad tracks went from 49 miles to over 15,000 miles
- Steel rails replaced iron rails
- 1869 – Westinghouse’s air brake made train travel safer
- Greater train traveling comfort – heavier train cars, improved road beds, and sleeping cars
## Communications Revolution

<table>
<thead>
<tr>
<th>Inventor</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samuel F.B. Morse (American)</td>
<td>- Telegraph (1844) &lt;br&gt; - Rapid communication across continents</td>
</tr>
<tr>
<td>Alexander Graham Bell (American)</td>
<td>- Telephone (1876) &lt;br&gt; - Human speech heard across continents</td>
</tr>
<tr>
<td>Cyrus W. Field (American)</td>
<td>- Atlantic cable (1866) &lt;br&gt; - United States and Europe connected by cable</td>
</tr>
<tr>
<td>Guglielmo Marconi (Italian)</td>
<td>- Wireless telegraph, an early form of the radio (1895) &lt;br&gt; No wires needed for sending messages</td>
</tr>
<tr>
<td>Lee de Forest (American)</td>
<td>- Radio tube (1907) &lt;br&gt; - Radio broadcasts could be sent around the world</td>
</tr>
<tr>
<td>Vladimir Zworykin (American)</td>
<td>- Television (1925) &lt;br&gt; - Simultaneous audio and visual broadcast</td>
</tr>
</tbody>
</table>
Printing Revolution

- **Printing – 1800-1830**
  - Iron printing press
  - Steam-driven press

- **Rotary press – 1870**
  - Invented by Richard Hoe
  - Printed both sides of a page at once

- **Linotype machine – 1884**
  - Invented by Ottmar Mergenthaler
  - A machine operator could create a “line of type” all at once, rather than having to individually set each letter

- **Newspapers became much cheaper to produce**
  - Cost of a newspaper plummeted
  - Number of newspapers increased
Key things I need to know for the test...

- Causes of the Industrial Rev
- Importance of Steam Engine
- Factories
- Tenements
- Labor Unions
- Child labor
- Spinning Jenny
- Great Britain
- Enclosure movement
- Effects of the industrial rev
- Karl Marx
- Conditions needed to industrialize (capital, coal iron)
- Railroad
- Urbanization
- Domestic System
- Mass production
Review Quiz Questions

1. What was the Industrial Revolution?

2. Describe at least three developments of the Industrial Revolution.

3. Compare and contrast the domestic and factory methods of production.

4. Why did the Industrial Revolution begin in England?

5. Explain why one invention or development leads to another.

6. Explain how developments in the textile industry sparked the Industrial Revolution.
Review Questions

6. Explain how developments in the textile industry sparked the Industrial Revolution.

7. Describe at least three developments in the area of transportation.

8. Describe at least three developments in the field of communications.

9. Considering the conditions necessary for industrialization to occur, how well equipped is the undeveloped world for becoming industrialized? Are modern undeveloped nations in a better or worse position than 18th- and 19th-century England?
Fig. 349. — Batteuse Damey à manège direct placé sous la batteuse.
The Agricultural Revolution

- Agricultural methods had not changed much since the Middle Ages
- Tools – hoe, sickle, wooden plow
- Three-field system – farmers left 1/3 of the land fallow each year to restore fertility to the soil
- Open-field system – unfenced farms with few improvements made to the land
- No significant surplus – only enough food was made to feed the population
Agriculture and Industry

- The Industrial Revolution brought machinery to farms
- The use of farm machinery meant that fewer farm workers were needed
- Displaced farm workers moved to the cities to find work in factories
  - This is called rural-to-urban migration
- Growing populations in urban cities required farmers to grow more crops
  - Food to eat
  - Raw materials (like cotton) for textile factories
# Agricultural Innovators

<table>
<thead>
<tr>
<th>Jethro Tull (English)</th>
<th>Lord Townshend (English)</th>
<th>Robert Bakewell (English)</th>
<th>Arthur Young (English)</th>
<th>Justus von Liebig (German)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seed drill:</strong> Planted seeds in straight rows as opposed to scattering them over a field</td>
<td><strong>Crop rotation:</strong> Ended the three-field system by illustrating how planting different crops in the same field each year kept the soil from becoming exhausted</td>
<td><strong>Stock breeding:</strong> First to scientifically breed farm animals for increased production of, and better quality, beef, milk, wool, etc.</td>
<td><strong>Agricultural writer:</strong> Popularized new farming methods and machinery</td>
<td><strong>Fertilizers:</strong> Invented fertilizers to enrich exhausted soil, which increased the amount of available farmland</td>
</tr>
</tbody>
</table>
Agricultural Machinery

Eli Whitney – Cotton gin (1793) – Increased cotton production

Cyrus McCormick – Mechanical reaper (1834) – Increased wheat production

Other important inventions: Horse-drawn hay rake, threshing machine, steel plow

Steam engines, gasoline and diesel engines, and electric motors were added to farm machinery as these types of engines were invented.

The Industrial and Agricultural Revolutions complemented one another. Developments and needs in one created developments and needs in the other.
Agricultural Science

- Agriculture became a science during the Agricultural Revolution
- Farmers and governments invested in agricultural research
  - Established agricultural schools, societies, and experimental stations
- Progress in agriculture
  - Pesticides, stock breeding, new foods, food preservation, new farming techniques and irrigation methods, frozen foods
- Result
  - Today, in the industrialized world, much more food is grown by far fewer farmers than was grown 200 years ago (or is grown today in the non-industrialized world)
Review Questions

1. Describe three features of agriculture before the Agricultural Revolution.

2. How did agricultural machinery change farm labor?

3. Describe the inventions or methods of at least three agricultural innovators.

4. Weigh the pros and cons of modern agriculture’s use of pesticides, preservation, and stock breeding.
THE SECOND INDUSTRIAL REVOLUTION
The First and Second Industrial Revolutions

- The first, or old, Industrial Revolution took place between about 1750 and 1870
  - Took place in England, the United States, Belgium, and France
  - Saw fundamental changes in agriculture, the development of factories, and rural-to-urban migration

- The second Industrial Revolution took place between about 1870 and 1960
  - Saw the spread of the Industrial Revolution to places such as Germany, Japan, and Russia
  - Electricity became the primary source of power for factories, farms, and homes
  - Mass production, particularly of consumer goods
  - Use of electrical power saw electronics enter the marketplace (electric lights, radios, fans, television sets)
The Spread of the Industrial Revolution

- **Mid-1800s** – Great Britain, the world leader in the Industrial Revolution, attempted to ban the export of its methods and technologies, but this soon failed.
- **1812** – United States industrialized after the War of 1812.
- **After 1825** – France joined the Industrial Revolution following the French Revolution and Napoleonic wars.
- **Circa 1870** – Germany industrialized at a rapid pace, while Belgium, Holland, Italy, Sweden, and Switzerland were slower to industrialize.
- **By 1890** – Russia and Japan began to industrialize.
Transportation

 Railroads
  • Industrialized nations first laid track in their own countries, then in their colonies and other areas under their political influence
  • Russia – Trans-Siberian railroad (1891-1905)
  • Germany – Berlin-to-Baghdad railroad across Europe to the Middle East
  • Great Britain – Cape-to-Cairo railroad vertically across Africa

 Canals
  • Suez Canal (1869) – provided access to the Indian Ocean from the Mediterranean Sea without the need to sail around Africa
  • Kiel Canal (1896) – North Sea connected to the Baltic Sea
  • Panama Canal (1914) – provided access from one side of the Americas to the other without the need to sail around the tip of South America
Transportation

- **Automobiles**
  - Charles Goodyear – vulcanized rubber, 1839
  - Gottlieb Daimler – gasoline engine, 1885
  - Henry Ford – assembly line, 1908-1915

- **Airplanes**
  - Orville and Wilbur Wright – airplane, 1903
  - Charles Lindbergh – first non-stop flight across the Atlantic, 1927
  - 20th-century – growth of commercial aviation
Review Questions

1. Compare and contrast the First and Second Industrial Revolutions.

2. When did the United States begin to industrialize?

3. Explain how trains and canals aided transportation, citing at least one example for each.

4. What contributions did Charles Goodyear, Gottlieb Daimler, and Henry Ford make to automobile production?
THE RESULTS OF THE INDUSTRIAL REVOLUTION
Results of the Industrial Revolution

**Economic Changes**
- Expansion of world trade
- Factory system
- Mass production of goods
- Industrial capitalism
- Increased standard of living
- Unemployment

**Political Changes**
- Decline of landed aristocracy
- Growth and expansion of democracy
- Increased government involvement in society
- Increased power of industrialized nations
- Nationalism and imperialism stimulated
- Rise to power of businesspeople

**Social Changes**
- Development and growth of cities
- Improved status and earning power of women
- Increase in leisure time
- Population increases
- Problems – economic insecurity, increased deadliness of war, urban slums, etc.
- Science and research stimulated
Economic Changes: Expansion of World Trade

- Increased production meant that industrialized nations produced more than could be consumed internally
- Sought new foreign markets
- Bought many raw materials from foreign markets
- New iron, steam-powered ships, along with other technological advances, made international trade (and travel) cheaper, safer, and more efficient
Economic Changes: Expansion of World Trade – Free Trade and Tariffs

- **Free trade** – trade without barriers or tariffs – was initially used

- As nations competed for markets, **protective tariffs** were put in place to limit foreign competition within an industrialized nation and its colonies.

- Motivation was to protect businesses in the home country and colonies, but this often meant people in the home country or colonies paid inflated prices for goods.
Economic Changes: Factory System Possible Due to Standardized Parts

- Eli Whitney is popularly credited with the invention of interchangeable parts in the late 1700s
  - But interchangeable parts had already been used in Europe
- Before the late 1700s, each part of an item (like a musket) was made individually by a single person, with each part made to fit the whole
- Standardized, or interchangeable, parts were created *en masse* to make a lot of duplicate products (such as hundreds of muskets)
- Manufacturers decided upon standard sizes for their goods and created large quantities of components
  - Such as deciding that a musket barrel should be two feet long and making 100 duplicate musket barrels, then deciding that triggers for these muskets should be two inches tall and making 100 2-inch triggers
- Standardized parts could be kept in a set location in a factory
  - As a worker assembled an article, he or she would take whatever parts were needed from a bin of standardized (interchangeable) parts
Economic Changes: Factory System Perfected with the Assembly Line

- Developed by Henry Ford between 1908 and 1915
- Brought the work to the worker instead of the worker to the work
- Product moves along a conveyor belt, with each worker contributing labor along the way to create the finished product
Economic Changes: Factory System – Assembly Line Brings Division of Labor

- Assembly lines bring the work to the worker, saving time
- Each worker specializes in one part
- An automobile worker may spend 30 years in a factory only ever putting passenger-side doors on motor vehicles
- Focusing on one aspect of production can be repetitive but can also make a worker an expert at that particular aspect
Economic Changes: Factory System

- *Manufacture* comes from the Latin *manu* and *facere*, meaning to make by hand
  - But during the Industrial Revolution, the meaning of *manufacturer* switched from the person who made an article by hand to the capitalist who hired workers to make articles

- Workers no longer owned the means of production (simple hand tools)
  - Instead, the newer means of production (expensive machinery) were owned by the capitalist
Economic Changes: Mass Production of Goods

- Motor vehicle production in the United States
  - 1895 – 33,000 motor vehicles
  - 1910 – 181,000 motor vehicles
  - 2000 – 5,542,000 passenger cars alone

- Factors contributing to mass production
  - Standardized (or interchangeable) parts
  - Assembly line
  - Labor division and specialization

- Mass production meant more items were produced at lower costs
  - More people could afford to buy manufactured goods, which in turn spurred demand
Economic Changes: Industrial Capitalism and the Working Class

- Pre-Industrial Revolution rural families did not rely solely on wages for sustenance
  - Owned their own farms or gardens where they raised most of their own food
  - Made their own clothing
  - Unemployment was rare
- Industrialization destroyed workers’ independence
  - Workers in cities did not have the means to grow their own food or make their own clothing
  - Workers relied entirely upon their employers for wages with which they bought everything they needed
Economic Changes: Industrial Capitalism’s Risks

- Workers came to rely entirely on their employers for their livelihoods
  - No more small family farms or gardens to provide extra food
  - No more day-laboring for a neighboring farmer to earn extra money
  - When the factory slowed down, the worker had nowhere to go for sustenance

- Entrepreneurs assumed enormous risk in establishing new enterprises
  - No more workers working from home – capitalists had to supply a factory
  - No more custom orders – capitalists had to anticipate demand
  - No more at-will laborers – workers relied on capitalists for steady labor
Economic Changes: Industrial Capitalism

- The financial investments required to run large industries brought about modern capitalism
- **Capital** – wealth that is used to produce more wealth
- **Entrepreneur** – person who starts a business to make a profit
- **Capitalist** – person who invests his or her money in a business to make a profit
- **Corporation** – company owned by **stockholders** who have purchased shares of stock
  - Actual running of the company left to hired managers rather than to the stockholders
  - As industries grew and small business operations faded into obscurity, the relationship between workers and business owners disintegrated
Economic Changes: Industrial Capitalism’s Problems

- Small manufacturers cannot compete with large corporations
- Consumers must buy from large corporations
- Workers have had to fight for decent wages and working conditions
- Large corporations can influence the government
Economic Changes: Increased Standard of Living

- Mass production made manufactured goods less expensive, so more people could afford them.

- Standard of living wasn’t raised for everyone – factories paid low wages, and many immigrants and rural-to-urban migrants lived poorer lives than their parents and grandparents had lived.
Economic Changes: Unemployment

- **Overproduction**
  - Also called *under-consumption*
  - Mass production anticipates demand – if goods don’t sell, a manufacturer produces less and lays off workers

- **Recession**
  - Overproduction across many industries with widespread lay-offs

- **Depression**
  - Long-lasting recession
Political Changes: Decline of Landed Aristocracy

- Before the Industrial Revolution – power was in the hands of the landed aristocracy and monarchs
  - *Landed aristocracy* refers to lords, dukes, etc., who owned the land
  - Although vassalage was gone by the 18th century, the working relationship between lords and peasants remained the same
    - Peasants either worked the land for lords or rented land from them
  - Wealth was based on agriculture, which meant that those who owned the most land were the wealthiest
    - Landed aristocracy owned and controlled the most land, making this the wealthiest and highest-ranking socio-economic group
- Industrial Revolution – factories became more valuable than land
  - Wealth of the aristocracy dwindled
  - Growing middle class, with wealth based in industry, wanted more political power
Political Changes: Decline of Landed Aristocracy

Case Study: The Corn Laws

**Problem:** British landowners and agriculturalists (lords and farmers) wanted high prices for their corn.
- **Solution:** Tariffs known as the Corn Laws established in 1815.

**Problem:** The growing working class could not afford corn.
- **Solution:** Repeal of the Corn Laws in 1846.

**Problem:** The price of corn declined following the repeal of the Corn Laws, decreasing the wealth, power, and prestige of the landed aristocracy in Great Britain.
- **Solution:** There was no solution. The landed aristocracy began its fall from economic and political power. Economic and political power shifted to the wealthy capitalist, middle, and working classes.
Political Changes: Growth and Expansion of Democracy

- The middle class grew during the Industrial Revolution
  - Gained more rights
- The working class effectively began with the Industrial Revolution
  - The working class fought for rights in the workplace
  - The working class demanded and earned a voice in government
Political Changes: Increased Government Involvement in Society

- Government actions to help workers
  - Legalization of unions
  - Established minimum wage
  - Standards for working conditions
  - Forms of social security
- Government actions to help consumers
  - Regulation and inspection of goods and foodstuffs
- Government actions to help businesses
  - Laws to stop or limit monopolies
  - Some governments took control of vital industries
Political Changes: Increased Power of Industrialized Nations

- With wealth came power
- Imperialism expanded
- Imperialistic, industrialized nations built up their navies to gain and protect assets
Political Changes: Nationalism and Imperialism Stimulated

- Increased production meant an increased need for raw materials
- Industrialized nations expanded their colonial empires and spheres of influence in their search for more raw materials
  - Worldwide scramble for colonies
  - Fought the peoples in the lands they controlled
  - Fought one another for colonies and spheres of influence
- Governments saw imperialist expansion as the key to continued industrial growth and wealth
Political Changes: Rise to Power of Businesspeople

- Along with the working classes, businesspeople gained political rights.

- “Captains of industry” or “robber barons” – along with financiers:
  - Wealth brought political influence.
Social Changes: Development and Growth of Cities

<table>
<thead>
<tr>
<th>Paris</th>
<th>London</th>
</tr>
</thead>
<tbody>
<tr>
<td>18th century - 600,000 people</td>
<td>18th century – 500,000 people</td>
</tr>
<tr>
<td>Circa 1900 – over 2,714,000 in the Paris urban area</td>
<td>Circa 1900 – over 6,200,000 in the London urban area</td>
</tr>
<tr>
<td>Circa 2000 – over 11,000,000 in the Paris urban area</td>
<td>Circa 2000 - over 7,100,000 in the London urban area</td>
</tr>
</tbody>
</table>

- Rural-to-urban migrants – people who left the countryside to live in cities
- A sign of an industrialized nation is that a large proportion of the population lives and works in urban areas
Social Change: Development and Growth of Cities

*Case Studies: Liverpool and Manchester*

<table>
<thead>
<tr>
<th>Liverpool</th>
<th>Manchester</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 1800 – population under 100,000</td>
<td>• 1800 – population circa 328,000</td>
</tr>
<tr>
<td>• 1850 – population over 300,000 (part of the increase due to Irish fleeing the potato famine)</td>
<td>• 1850 – population circa 1,037,000</td>
</tr>
<tr>
<td>• 1900 – population over 700,000</td>
<td>• 1900 – population circa 2,357,000</td>
</tr>
<tr>
<td>• Major British port city which grew during the Industrial Revolution</td>
<td>• Nicknamed “Cottonopolis” in the mid-to-late 19th century because of its textile factories</td>
</tr>
<tr>
<td>• Population peaked in the 1930s and has been declining ever since due to the decline in manufacturing and imperialism</td>
<td>• Began to decline after the Industrial Revolution but has stabilized due to new industries and greater business diversification</td>
</tr>
</tbody>
</table>
Social Changes: Improved Status and Earning Power of Women

- Initially, factory owners hired women and children because they worked for lower wages
  - This brought many women, otherwise impoverished, to cities to work in factories
  - Governments limited the work of children and, at times, of women

- Women gained economic power and independence
  - Before industrialization, it was almost impossible for a woman to remain single and live on her own
  - Factories and urban centers attracted women in large numbers
  - Women fought for and eventually gained political rights
Social Changes: Increase in Leisure Time

- Labor-saving devices invented and produced
  - Vacuum cleaners
  - Washing machines
  - Refrigerators
- Entrepreneurs and inventors developed new forms of entertainment
  - Moving pictures
  - Amusement parks
- Birth of the weekend
  - Traditionally, Western nations had Sunday (the Christian day of rest) as the only day off from work
  - Saturday was added (after the struggles of Jewish labor unionists) to accommodate the religious observances of Jewish factory workers (whose Sabbath, or Shabbat, runs from Friday at sundown to Saturday at sundown)
Agricultural Revolution

Increased food production

Lower food prices

People ate more

More healthy babies were born

Population skyrocketed

**Europe**

- 1750 – 144,000,000
- 1900 – 325,000,000

**England**

- 1750 - 11,000,000
- 1900 - 30,000,000

- Many people immigrated to industrialized countries
- Numerous nationalities to the United States
- Irish to Manchester and Liverpool in England
- Population growth in industrialized nations required growing even more food
Social Changes: Problems

- Monotony of assembly lines and factory life
- Loss of craftsmanship in manufactured goods
- War became more deadly as weapons became more technologically advanced and were mass produced
- Economic insecurity – workers relied entirely on their jobs for sustenance
Social Changes: Science and Research Stimulated

- Scientific and technological discoveries became profitable instead of simply beneficial
- Companies and governments were willing to invest in research and development
- Patent law
  - Came into its modern form under England’s Queen Anne (reigned 1702-1714)
  - Inventors have the exclusive right to produce their new inventions for a period of time
Copy the following chart into your notebook!

Make rows big enough to write answers into your chart.

This chart can be completed in groups of two......
<table>
<thead>
<tr>
<th>Effects of the Industrial Rev</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laissez Faire Economics</td>
<td>• .</td>
</tr>
<tr>
<td></td>
<td>• Adam Smith wrote</td>
</tr>
<tr>
<td>Urbanization</td>
<td>• .</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>• .</td>
</tr>
<tr>
<td>Improved Transportation</td>
<td>• .</td>
</tr>
<tr>
<td></td>
<td>• The steam locomotive was invented railroads grew</td>
</tr>
<tr>
<td>Marxist Socialism</td>
<td>• Karl Marx wrote the Communist Manifesto</td>
</tr>
<tr>
<td></td>
<td>• The proletariat (workers) society would-</td>
</tr>
<tr>
<td>Labor Unions</td>
<td>• These unions engaged in-</td>
</tr>
<tr>
<td>Reform Legislation</td>
<td>• Factors Regulations act of 1833-</td>
</tr>
</tbody>
</table>
Review Questions

1. Describe the economic, political, and social changes which resulted from the Industrial Revolution.

2. What risks did workers face from the factory system of production?

3. How did women benefit from the Industrial Revolution?

4. Imagine that you are a government official in a developing nation. What lessons for your country might you take away from a study of the Industrial Revolution? What pitfalls might you want to avoid?
Life in the Tenements
Read pages 110-111 answer the following:

1. Define Urbanization
2. Describe how the Industrial Rev was both a blessing and a curse?
3. Answer question 1 on the bottom of page 110.
4. Define socialism & utilitarianism
5. Who was Karl Marx?
6. Answer questions 1 and 2 on the bottom of page 111.
Changing Employee-Employer Relationships

- **Domestic system**
  - Workers and employers knew each other personally
  - Workers could aspire to become employers

- **Factory system**
  - Workers no longer owned the means of production (machinery)
  - Employers no longer knew workers personally
    - Factories often run by managers paid by the corporation
  - Relationships between employers and employees grew strained
Problems of the Factory System

- Factories were crowded, dark, and dirty
- Workers worked from dawn to dusk
- Young children worked with dangerous machinery
- Employment of women and children put men out of work
  - Women and children were paid less for the same work
- Technological unemployment – workers lost their jobs as their labor was replaced by machines
Poor Living Conditions

- Factories driven solely by profit
  - Businesses largely immune to problems of workers
- Factory (also company or mill) towns
  - Towns built by employers around factories to house workers
  - Workers charged higher prices than normal for rent, groceries, etc.
    - Workers often became indebted to their employers
    - Created a type of forced servitude as workers had to stay on at their jobs to pay their debts
  - Considered paternalistic by workers
    - Some employers had workers’ interests at heart
    - But workers wanted to control their own lives
Children working in dangerous factory conditions
All family members would work....
Overcrowded Conditions
Slum Living Conditions

- Factory towns – often built and owned by factories
  - Not a strange concept to rural-to-urban migrants who were used to living on a lord’s estate or property
  - Full of crowded tenements
  - Few amenities
- Tenements – buildings with rented multiple dwellings
  - Apartment buildings with a more negative connotation
  - Overcrowded and unsanitary
- Workers were unsatisfied both inside and outside the factories
Rise of Labor Unions

- Before labor unions, workers bargained individually – “individual bargaining”
  - Before factories, a worker could bargain for better wages and working conditions by arguing his or her particular skills
  - But in factories, work is routine and one worker can easily replace another
- With labor unions, workers bargained together as a group, or collective – “collective bargaining”
  - Organized groups of workers elected leaders to bargain on their behalf
  - Used tools (such as strikes) to gain rights
# Weapons Used by Unions and Employers

## Weapons Used by Employers
- At-will employment
- Blacklists
- Company unions
- Individual bargaining
- Injunctions
- Laws that limit union activities
- Lockouts
- Open shops
- Outsourcing
- Relocation
- Right-to-work laws
- Threat of foreign competition
- Welfare capitalism
- Yellow-dog contracts

## Weapons Used by Unions
- Boycotts
- Check-offs
- Closed shops
- Collective bargaining
- Direct political action
- Favorable labor legislation
- Feather-bedding
- Lobbying
- Picketing
- Sabotage
- Strikes
- Union label
- Union shops
<table>
<thead>
<tr>
<th>Year(s)</th>
<th>Event(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1799-1800</td>
<td><strong>Combination Laws</strong>: Outlawed unions and strikes.</td>
</tr>
<tr>
<td>1867</td>
<td><strong>Disraeli Reform Act</strong>: Suffrage for workers.</td>
</tr>
<tr>
<td>1875</td>
<td>Repeal of the Combination laws; unions and strikes legalized. Union membership grew as a result.</td>
</tr>
<tr>
<td>1900</td>
<td><strong>Labour Party</strong>: Founded by bringing together different groups representing trade unions, etc.</td>
</tr>
<tr>
<td>1901</td>
<td><strong>Taft Vale Decision</strong>: House of Lords ruled that unions would have to pay financial damages caused by strikes (such as loss of income to employers), which threatened to end Britain’s unions.</td>
</tr>
<tr>
<td>After 1901</td>
<td><strong>Labour Party</strong>: Worked for workers’ rights. (Other major British political parties were Liberals [Whigs] and Conservatives [Tories].)</td>
</tr>
<tr>
<td>1906</td>
<td><strong>Trade Disputes Act</strong>: Protected union funds from the <em>Taft Vale</em> court decision. Achieved by Liberal and Labour parties working together.</td>
</tr>
<tr>
<td>1909</td>
<td><strong>Osborne Judgment</strong>: Banned trade unions from donating funds to political parties. Hurt the Labour party because poorer, working class party members could not provide salaries to party’s elected representatives.</td>
</tr>
<tr>
<td>1911</td>
<td><strong>Parliament Act</strong>: Stopped the House of Lords from vetoing laws passed by the House of Commons. Paid members of parliament an annual salary.</td>
</tr>
<tr>
<td>1920s</td>
<td><strong>Labour Party</strong>: Surpassed the Liberal party in power.</td>
</tr>
<tr>
<td>1940s-1950s</td>
<td><strong>Social security</strong>: Labour party government brought increased social programs, including socialized medicine, along with government control of several industries (electricity, steel, television).</td>
</tr>
</tbody>
</table>
Legal Protections for Workers

- Limited hours for women
  - Later – equal pay for equal work
- Eventual end to child labor
  - Schools and requirements for school attendance grew as children were removed from the workforce
- Health and safety codes
- Minimum wage
- Legalization of unions
Rights of Female and Child Workers

- Women and children could legally be paid less than men for the same work
  - Factory owners were more willing to hire them
  - Male workers grew resentful

- English child laborers
  - England had a history (going back to the 17th century) of training pauper children (even those younger than five years old) in a trade
  - Poor children followed their mothers into factories

- Early male-dominated unions fought to banish women and children from the workplace
  - Eventually this strategy was abandoned
  - Women eventually won right to equal pay for equal work
    - Though women today, in reality, still earn less than men at the same types of work
# Social Insurance/Security

<table>
<thead>
<tr>
<th>Type of Security</th>
<th>France</th>
<th>Germany</th>
<th>Great Britain</th>
<th>Italy</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident</td>
<td>1928</td>
<td>1884</td>
<td>1906</td>
<td>1898</td>
<td>By various state laws</td>
</tr>
<tr>
<td>Sickness</td>
<td>1928</td>
<td>1883</td>
<td>1912</td>
<td>1898</td>
<td>By various laws in some states</td>
</tr>
<tr>
<td>Old Age</td>
<td>1910</td>
<td>1889</td>
<td>1908</td>
<td>1898</td>
<td>1935</td>
</tr>
<tr>
<td>Unemployment</td>
<td>1928</td>
<td>1911</td>
<td>1912</td>
<td>1947</td>
<td>1935</td>
</tr>
<tr>
<td>Socialized Medicine (Universal Health Care)</td>
<td>1948</td>
<td>1884</td>
<td>1948</td>
<td>1948</td>
<td>Medicaid for the poorest citizens in the 1960s; under Pres. Obama, conservative reforms set for all in 2014</td>
</tr>
</tbody>
</table>
Review Questions

1. How and why did employer-employee relationships change during the Industrial Revolution?

2. Describe living conditions in factory towns.

3. Describe the weapons used by employers and unions.

4. Why was the establishment of yearly wages for members of parliament important to the British Labour party?

5. What are the advantages and disadvantages of unions for workers and consumers?
THE COOPERATIVE MOVEMENT AND SOCIALISM
Cooperatives

- First cooperative – 1844 in Rochdale, England
  - Formed to fight high food costs
  - 30 English weavers opened a grocery store with $140
  - Bought goods at wholesale
  - Members of cooperative bought goods at cost
  - Non-members paid “retail”
  - Profits split among members
  - By 1857 – over 1000 members and £100,000 in annual profits

- Growth of cooperatives
  - Spread to other industries – banking, building, insurance, printing, etc.
  - By 1900 – 20% of Great Britain’s population had joined a cooperative
  - Concept spread internationally
Socialism

- **Socialists** – viewed the capitalist system as inherently wrong
  - Belief that capitalism is designed to create poverty and poor working conditions because of its end goal of earning maximum profits for investors

- **Socialism** – government owns the means of production
  - Belief that if the government (“the people”) owns the means of production, these factories and industries will function in the public (as opposed to private) interest
Early Socialist Movement

- First socialists were Utopians
  - Strove to create a fair and just system
  - Community divided tasks and rewards equitably
- Robert Owen
- Charles Fourier
- Claude Saint-Simon
- Louis Blanc
Robert Owen (1771-1858)

- Utopian socialist
- Owned a textile factory in New Lanark, Scotland
- Set up a model community in New Harmony, Indiana
- Decreased working hours
- Improved working conditions and employee housing
- Shared management and profits with employees
- Proved that a socialist-based company could be profitable
Charles Fourier (1772-1837)

- French philosopher
- Coined the term féminisme
- Advocated concern and cooperation as the means to create social harmony
- Considered poverty to be the main cause of society’s problems
- Envisioned workers (paid at least a minimum wage) living in “phalanxes” – communities living in a large shared structure
Claude Henri de Saint-Simon

- 1760-1825
- As a young man he was in the Thirteen Colonies as part of the French assistance effort during the American Revolution
- French socialist philosopher
- Believed all human beings naturally greedy and eager to obtain wealth and higher social positions
  - These tendencies were to be eradicated through education
- Advocated an end to inheritances
  - Movement of wealth from rich, powerful families to the state, which is an instrument of the people
Louis Blanc (1811-1882)

- French socialist philosopher and politician
- Blamed society’s ills on the pressure of competition
- “From each according to his abilities, to each according to his needs.”
- Came to political power during the Revolution of 1848
  - Instituted labor reforms – believed everyone had the right to work
  - Terrible June Days – forced from power after Blanc’s chief rival let Blanc’s public workshops (designed to give work to the unemployed) fail
  - Returned to France, restored to power, and given a state funeral after his death
- His writings greatly influenced later socialists
Karl Marx (1818-1883)

- German socialist (communist) philosopher
- Forced to leave Prussia for articles attacking the Prussian government
- Relocated to France where he was considered too radical
  - Wrote *Communist Manifesto* with Friedrich Engels (1848)
- Relocated to England where he lived out the rest of his life
  - Wrote *Das Kapital* – the “bible” of socialism (1867)
- “Religion is the opiate of the people.”
  - Belief that religion is designed to keep people submissive to those in power by promising them that their reward is in heaven
<table>
<thead>
<tr>
<th>Economic Interpretation of History</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Economic changes lead to historical changes.</td>
</tr>
<tr>
<td>• Historically, the wealthy classes have held all power.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class Struggle</th>
</tr>
</thead>
<tbody>
<tr>
<td>• History has been a struggle between the rich and the poor.</td>
</tr>
<tr>
<td>• In the Industrial Revolution, the struggle is between the capitalists (owners of the means of production) and the proletariat (workers).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surplus Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Workers produce all wealth but receive only enough to survive.</td>
</tr>
<tr>
<td>• “Surplus value” (profit) of the workers’ labor goes to the capitalists.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inevitability of Socialism</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Industrial wealth leads to the concentration of wealth among fewer and fewer capitalists, while the living and working conditions of the proletariat grow worse.</td>
</tr>
<tr>
<td>• The proletariat will eventually rebel and create a socialist state.</td>
</tr>
</tbody>
</table>
Socialist and Communist Political Parties

- **First International**
  - Founded by Marx and others in 1864
  - International Workingmen’s Association
  - Urged proletariat to overthrow capitalism worldwide
  - Broke apart in 1873

- **Second International**
  - Founded in 1889
  - National parties more concerned with the politics of their respective nations
  - Broke apart during World War I

- **Russian Revolution (1917)**
  - Communists – known as *Bolsheviks*, led by Vladimir Lenin, came to power following the overthrow of the tsar

- **Left and right wings**
  - Socialists – right wingers – advocated socialist reforms through voting
  - Communists – left wingers – advocated socialist reforms through revolution
  - Political parties of both types have existed throughout Europe, the United States, and all over the world since around the turn of the last century
Soviet-backed Communism

- Russian communism
  - Bolsheviks (Communists or Reds) won the Russian civil war against the Whites
  - World’s first socialist/communist state
- Comintern – Communist International
  - Founded in Russia (Soviet Union) in 1919
  - Sought to spread worldwide communist revolution
  - Disbanded during World War II
- Cominform – Communist Information Bureau
  - Founded in Soviet Union in 1947
  - Disbanded in 1956 as part of de-Stalinization
- Soviet Union (and later China) spread communism through satellite states and via proxy wars during the Cold War
Syndicalists and Anarchists

- Syndicalism and anarchism enjoyed popularity during the late 1800s and early 1900s

- **Syndicalism**
  - Businesses and distribution of income managed by trade unions
  - Unions exist separate from the state as opposed to being part of the state

- **Anarchism**
  - Belief that all governments are bad for the people
  - Advocates direct action to remove all forms of government
  - Various individual ideologies for post-government societal organization
Social Catholic Movement

- Opposed to the atheism of socialism
  - Yet also opposed to uncontrolled capitalism
- Pope Leo XIII
  - Advocated Catholic socialism in 1891 through his support of workers’ associations
- Pope Pius XI
  - 1931 – condoned Catholic socialism while condemning communism
  - Stated that workers should share in the profits and management of industry
- Followed by like-minded Protestant organizations
- Numerous Christian-based socialist political parties still active in Europe
Review Questions

1. What is a cooperative?

2. Describe the philosophies and actions of Robert Owen and Louis Blanc.

3. Explain Marxism in terms of the economic interpretation of history, class struggle, surplus value, and the inevitability of socialism.

4. Most modern industrialized nations possess some degree of socialism. Comparing the United States to countries such as China, France, and Great Britain, should the United States increase or decrease its number and scope of social programs and government ownership of industry? Why or why not?