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

Paris

- 18th century - 600,000 people
- Circa 1900 – over 2,714,000 in the Paris urban area
- Circa 2000 – over 11,000,000 in the Paris urban area

London

- 18th century – 500,000 people
- Circa 1900 – over 6,200,000 in the London urban area
- Circa 2000 - over 7,100,000 in the London urban area

- 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

Liverpool

- 1800 – population under 100,000
- 1850 – population over 300,000 (part of the increase due to Irish fleeing the potato famine)
- 1900 – population over 700,000
- Major British port city which grew during the Industrial Revolution
- Population peaked in the 1930s and has been declining ever since due to the decline in manufacturing and imperialism

Manchester

- 1800 – population circa 328,000
- 1850 – population circa 1,037,000
- 1900 – population circa 2,357,000
- Nicknamed "Cottonopolis" in the mid-to-late 19th century because of its textile factories
- Began to decline after the Industrial Revolution but has stabilized due to new industries and greater business diversification

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)

Social Changes: Population Increases

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

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?