The Industrial Revolution, 1700-1900

The Industrial Revolution begins in Britain, spreads to other countries, and has a strong impact on economics, politics, and society.
The Industrial Revolution, 1700-1900

SECTION 1 The Beginnings of Industrialization

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Section-1

The Beginnings of Industrialization

The Industrial Revolution starts in England and soon spreads to other countries.
The Beginnings of Industrialization

Industrial Revolution Begins in Britain

New Ways of Working

- **Industrial Revolution**—greatly increases output of machine-made goods
- Revolution begins in England in the middle 1700s

The Agricultural Revolution Paves the Way

- **Enclosures**—large farm fields enclosed by fences or hedges
- Wealthy landowners buy, enclose land once owned by village farmers
- Enclosures allow experimentation with new agricultural methods

Continued…
Rotating Crops
- **Crop rotation**—switching crops each year to avoid depleting the soil
- Livestock breeders allow only the best to breed, improve food supply

**Why the Industrial Revolution Began in England**
- **Industrialization**—move to machine production of goods
- Britain has natural resources—coal, iron, rivers, harbors
- Expanding economy in Britain encourages investment
- Britain has all needed **factors of production**—land, labor, capital
Inventions Spur Industrialization

Changes in the Textile Industry

- Weavers work faster with flying shuttles and spinning jennies
- Water frame uses water power to drive spinning wheels
- Power loom, spinning mule speed up production, improve quality
- **Factories**—buildings that contain machinery for manufacturing
- Cotton gin boosts American cotton production to meet British demand
Improvements in Transportation

**Watt’s Steam Engine**
- Need for cheap, convenient power spurs development of steam engine
- James Watt improves steam engine, financed by Matthew Boulton
- Boulton an entrepreneur—organizes, manages, takes business risks

**Water Transportation**
- Robert Fulton builds first steamboat, the Clermont, in 1807
- England’s water transport improved by system of canals

**Road Transportation**
- British roads are improved; companies operate them as toll roads
The Railway Age Begins

Steam-Driven Locomotives

- In 1804, Richard Trevithick builds first steam-driven locomotive
- In 1825, George Stephenson builds world’s first railroad line

The Liverpool-Manchester Railroad

- Entrepreneurs build railroad from Liverpool to Manchester
- Stephenson’s Rocket acknowledged as best locomotive (1829)

Railroads Revolutionize Life in Britain

- Railroads spur industrial growth, create jobs
- Cheaper transportation boosts many industries; people move to cities
CASE STUDY: Manchester

The factory system changes the way people live and work, introducing a variety of problems.
Section-2

**Industrialization**

**CASE STUDY: Manchester**

**Industrialization Changes Life**

**Factory Work**
- Factories pay more than farms, spur demand for more expensive goods

**Industrial Cities Rise**
- **Urbanization**—city-building and movement of people to cities
- Growing population provides work force, market for factory goods
- British industrial cities: London, Birmingham,
- Manchester, Liverpool
Industrialization Changes Life (continued)

Living Conditions

• Sickness widespread; epidemics, like cholera, sweep urban slums
• Life span in one large city is only 17 years
• Wealthy merchants, factory owners live in luxurious suburban homes
• Rapidly growing cities lack sanitary codes, building codes
• Cities also without adequate housing, education, police protection
Industrialization Changes Life \{continued\}

**Working Conditions**

- Average working day 14 hours for 6 days a week, year round
- Dirty, poorly lit factories injure workers
- Many coal miners killed by coal dust
Class Tensions Grow

The Middle Class
- **Middle class**—skilled workers, merchants, rich farmers, professionals
- Emerging middle class looked down on by landowners, aristocrats
- Middle class has comfortable standard of living

The Working Class
- Laborers’ lives not improved; some laborers replaced by machines
- Luddites, other groups destroy machinery that puts them out of work
- Unemployment a serious problem; unemployed workers riot
Positive Effects of the Industrial Revolution

Immediate Benefits
• Creates jobs, enriches nation, encourages technological progress
• Education expands, clothing cheaper, diet and housing improve
• Workers eventually win shorter hours, better wages and conditions

Long-Term Effects
• Improved living and working conditions still evident today
• Governments use increased tax revenues for urban improvements
The Mills of Manchester

Immediate Benefits

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Manchester and the Industrial Revolution

- Manchester has labor, water power, nearby port at Liverpool
- Poor live and work in unhealthy, even dangerous, environment
- Business owners make profits by risking their own money on factories
- Eventually, working class sees its standard of living rise some
The Mills of Manchester \(continued\)

**Children in Manchester Factories**

- Children as young as 6 work in factories; many are injured
- 1819 Factory Act restricts working age, hours
- Factory pollution fouls air, poisons river
- Nonetheless, Manchester produces consumer goods and creates wealth
Industrialization Spreads

The industrialization that begins in Great Britain spreads to other parts of the world.
Industrialization Spreads

Industrial Development in the United States

Industrialization in the United States

- U.S. has natural and labor resources needed to industrialize
- Samuel Slater, English textile worker, builds textile mill in U.S.
- Lowell, Massachusetts a mechanized textile center by 1820
- Manufacturing towns spring up around factories across the country
- Young single women flock to factory towns, work in textile mills
- Clothing, shoemaking industries soon mechanize

Continued...
Industrial Development in the United States \textit{continued}

**Later Expansion of U.S. Industry**
- Industrialization picks up during post-Civil War technology boom
- Cities like Chicago expand rapidly due to location on railroad lines
- Small companies merge to form larger, powerful companies

**The Rise of Corporations**
- \textbf{Stock}—limited ownership rights for company, sold to raise money
- \textbf{Corporation}—company owned by stockholders, share profits not debts
- Large corporations attempt to control as much business as they can
Continental Europe Industrializes

Troubles in Continental Europe
- Revolution and Napoleonic wars disrupted early 19th-century economy

Beginnings in Belgium
- Belgium has iron ore, coal, water transportation
- British workers smuggle in machine plans, start companies (1799)

Germany Industrializes
- Political, economic barriers; but industry, railroads boom by mid-century
Continental Europe Industrializes {continued}

Expansion Elsewhere in Europe

- Bohemia develops spinning; Northern Italy mechanizes silk textiles
- Industrialization in France more measured; agriculture remains strong
The Impact of Industrialization

Rise of Global Inequality

- Wealth gap widens; non-industrialized countries fall further behind
- European nations, U.S., Japan exploit colonies for resources
- Imperialism spreads due to need for raw materials, markets

Transformation of Society

- Europe and U.S. gain economic power
- African and Asian economies lag, based on agriculture, crafts
- Rise of middle class strengthens democracy, calls for social reform
Reforming the Industrial World

The Industrial Revolution leads to economic, social, and political reforms.
Reforming the Industrial World
The Philosophers of Industrialization

Laissez-faire Economics

- **Laissez faire**—economic policy of not interfering with businesses
- Originates with Enlightenment economic philosophers
- **Adam Smith**—defender of free markets, author of *The Wealth of Nations*
- Believes economic liberty guarantees economic progress
- Economic natural laws—self-interest, competition, supply and demand
The Economists of Capitalism

- Thomas Malthus, David Ricardo boost laissez-faire capitalism
- **Capitalism**—system of privately owned businesses seeking profits
- Malthus thinks populations grow faster than food supply
- Wars, epidemics kill off extra people or misery and poverty result
- Ricardo envisions a permanent, poor underclass providing cheap labor
The Rise of Socialism

Utilitarianism

- Jeremy Bentham’s utilitarianism—judge things by their usefulness
- John Stuart Mill favors regulation to help workers, spread wealth

Utopian Ideas

- Robert Owen improves workers’ conditions, rents cheap housing
- In 1824, Owen founds utopian community, New Harmony, Indiana

Socialism

- Socialism—factors of production owned by, operated for the people
- Socialists think government control can end poverty, bring equality
Marxism: Radical Socialism

Marxism’s Prophets
- Karl Marx—German journalist proposes a radical socialism, Marxism
- Friedrich Engels—German whose father owns a Manchester textile mill

The Communist Manifesto
- Marx and Engels believe society is divided into warring classes
- Capitalism helps “haves,” the employers known as the bourgeoisie
- Hurts “have-nots,” the workers known as the proletariat
- Marx, Engels predict the workers will overthrow the owners
Marxism: Radical Socialism  \( \textit{continued} \)

**The Future According to Marx**

- Marx believes that capitalism will eventually destroy itself
- Inequality would cause workers to revolt, seize factories and mills
- **Communism**—society where people own, share the means of production
- Marx’s ideas later take root in Russia, China, Cuba
- Time has shown that society not controlled by economic forces alone
Labor Unions and Reform Laws

Unionization

- **Unions**—associations formed by laborers to work for change
- Unions negotiate for better pay, conditions with employers
- Sometimes they strike—call a work stoppage—to pressure owners
- Skilled workers are first to form unions
- Movement in Britain, U.S. must fight for right to form unions
- Union goals were higher wages, shorter hours, improved conditions

Continued...
Labor Unions and Reform Laws (continued)

Reform Laws

- British, U.S. laws passed to stop worst abuses of industrialization
- 1842 Mines Act in Britain stops women, children working underground
- In 1847, workday for women, children limited to 10 hours in Britain
- U.S. ends child labor, sets maximum hours in 1904
The Reform Movement Spreads

The Abolition of Slavery
• In 1833, reformers help end slavery in British empire
• Slavery ends in U.S. in 1865; ends by 1888 in rest of Americas

The Fight for Women’s Rights
• Women pursue economic and social rights as early as 1848
• International Council for Women founded 1888; worldwide membership

Reforms Spread to Many Areas of Life
• Reformers establish free public schools in Europe in late 1800s
• Public schools common in U.S. by 1850s; prison reform also sought
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