

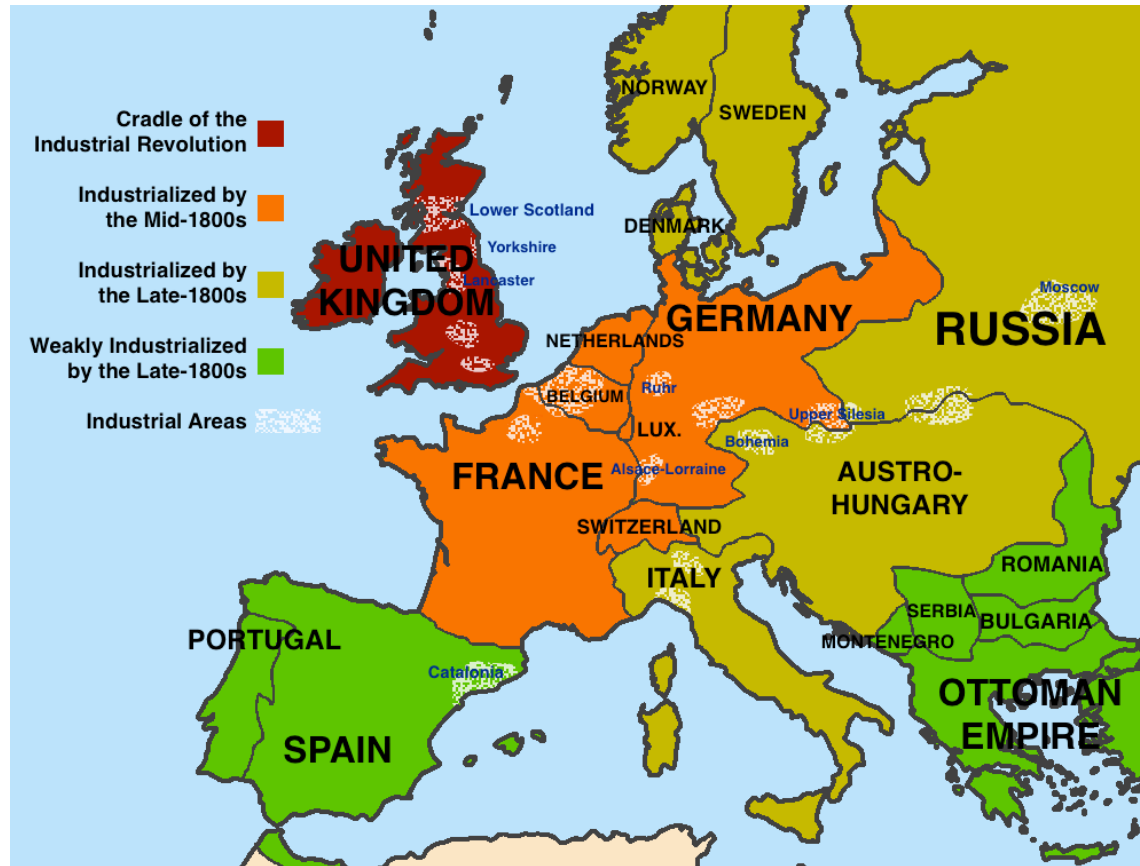
Industrial Revolution

18th Century

Prior to Industrial Revolution and Changes

- Time and Place?
- Agricultural Changes?
- Industrial Development?
- Social Changes?
- Positives and Negatives?
- Global impact?

Where it started and Spread



You Search:

- Google Images: “England’s Coal Deposits”

Great Britain Takes the Lead

- GB takes lead due to deposits of coal and iron
- Textile industry beginning age of modern factories due to power-driven machines
- Once steam engines are invented greater power provided
- Need for raw materials changes farmer's life-grow raw materials instead of food

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England Thames River

Making Rivers Wider? Why?



Transportation

- Need for more transportation routes to link materials to factories
- Rivers widen/deepened for steam boats, Railroads built, turnpikes built

Capitalism



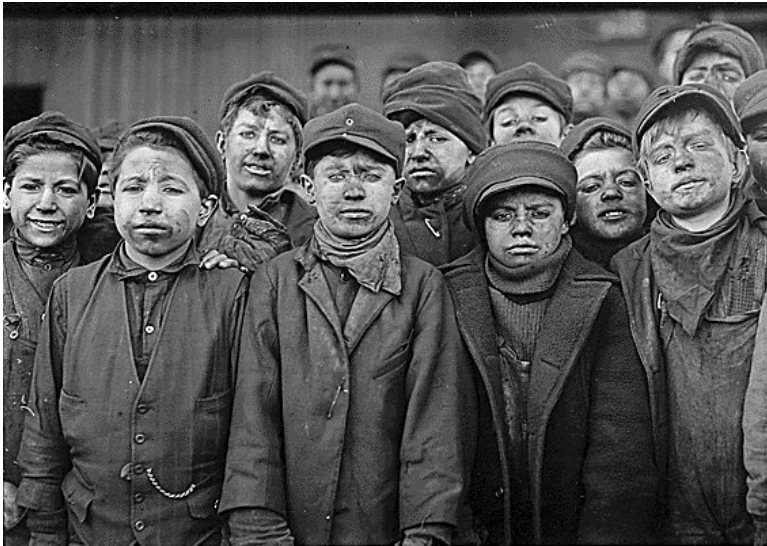
Business Roles

- Capitalist-many made wealth from wars, slave trade, or colonial business
- Capitalist begin to seek investments but do not run factories
- Capitalist very powerful and important
- Industrialist run and operate factories

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“Industrial Revolution Child Labor”

Working Conditions



Life

- Working class relationship between worker and boss not near as close
- Average work day 12-14 hours, 6 days a week, bosses force production w/out rest
- Jobs became monotonous and specialized
- Wages are low
- Women and children make less than men

Living Conditions in Cities



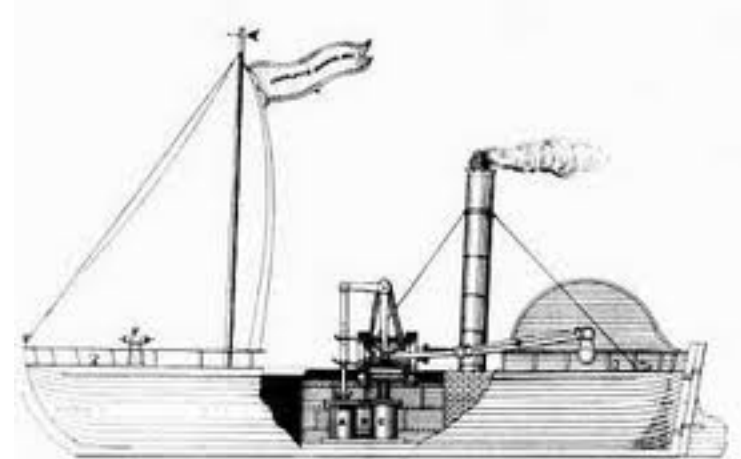
Life continued

- Overcrowding and unsanitary conditions lead to widespread disease
- Unions formed to improve life
- Right to vote granted to more men
- Middle class gained political and educational benefits
- Education greatly improved overall

You Search

“Carl Benz”

Transportation: Powered by ??



Achievements of Industrial Revolution

- Steamships: American Robert Fulton, invented the Clermont in 1807(cut a 96 hour trip to 32)
- Railroads: George Stephenson of England invented 1st steam-powered locomotive in 1825
- Automobiles: 1885 Karl Benz of Germany 1st internal combustion motor, Gottlieb Daimler of Germany introduced gasoline-powered engine
- Airplanes: 1903 Orville and Wilbur Wright made 1st flight, 1927 Charles Lindbergh flight from New York to Paris (nonstop)

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“philo farnsworth television”

Communication Technology: Well Kind of



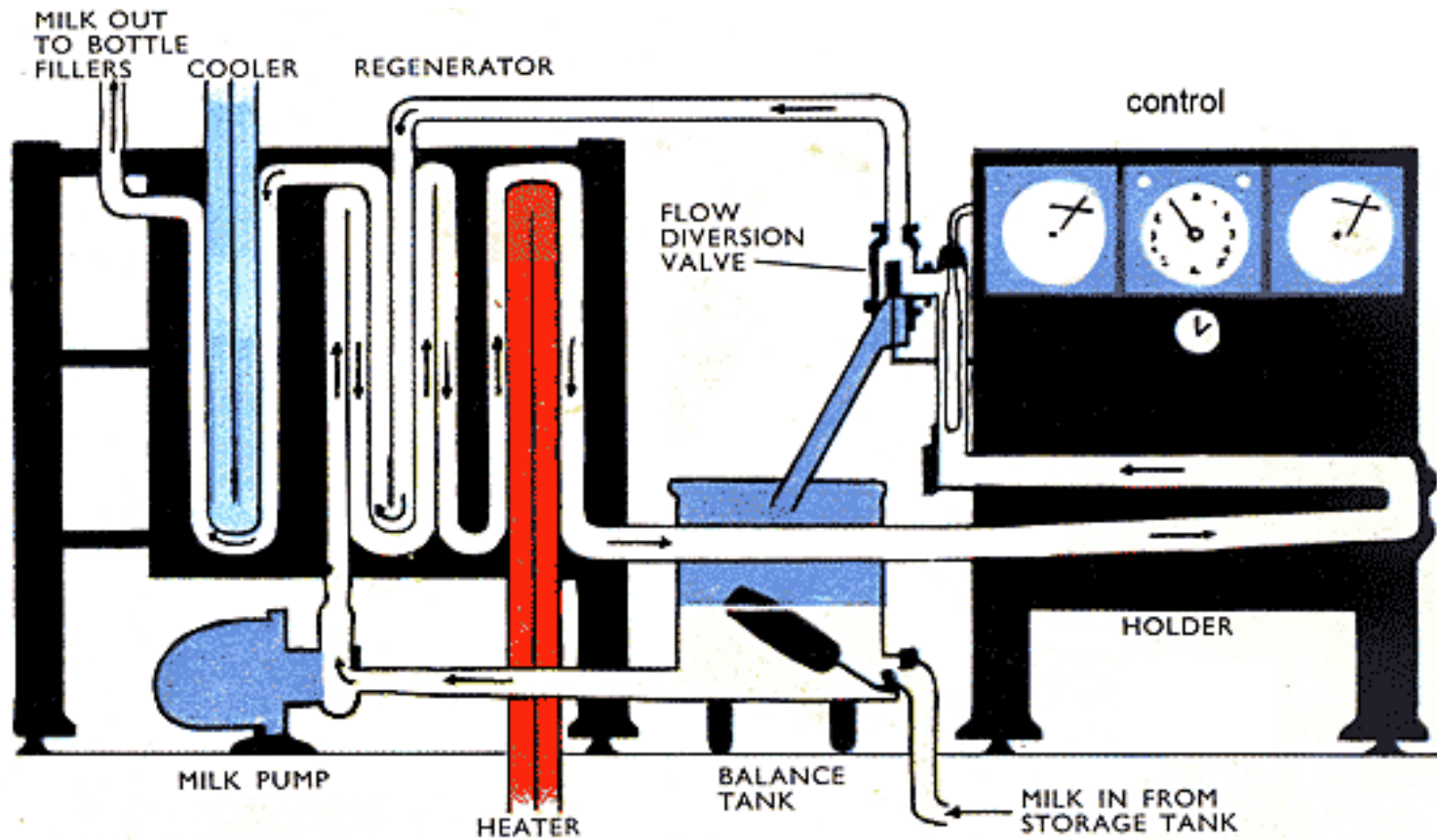
Communication

- Telegraph: 1830s Charles Wheatstone and William Cooke of Britain and Samuel F.B. Morse of USA developed 1st telegraph-1866 US and Europe linked by transatlantic cable
- Telephone: Alexander Graham Bell developed 1st telephone in 1876
- Radio: Italian Marconi sent message across Atlantic by radio waves in 1901
- Television: 1923 Vladimir Zworykin, Russian-born American, invented 1st TV tube

Science

- John Dalton, GB teacher, in 1803 came up with atoms being smallest parts of elements, developed atomic weights
- Michael Faraday, England, demonstrated magnetism could produce electricity
- Wilhelm Roentgen of Germany discovered X rays in 1895
- 1898 Marie Curie discovered radioactive elements radium and polonium, used in cancer treatment
- Charles Darwin, England, developed idea of evolution
- Gregor Mendel, an Austrian monk, developed idea of modern genetics with study of peas

Medicine and Science



Medicine

- Edward Jenner in 1796 invented vaccine for smallpox
- Louis Pasteur proved bacteria(germs) cause diseases. Developed pasteurization.
- 1882 Robert Koch isolated and cultured bacteria. Identified TB germ and bacteria in water and food transmit cholera
- Joseph Lister, England, surgeon used antiseptics in operations
- William Morton, in 1846, American dentists used anesthetic