Revolutions of Industrialization
1750-1914
The industrial revolution was the most dramatic change in world history since the agricultural revolution 12,000 years before it. Humans learned how to dominate the natural environment and extract wealth from it.
Humans used the energy of the sun which grew plants.....and energy from pack animals for transport.
Pack animals
In the Middle Ages people had already begun using several other sources of energy.
Tide mill
Wind Mill
Water Mill
The use of fossil fuels for energy began with the mining of coal in England in the 1760’s. England was nearly deforested by 1600, but veins of coal near the surface came to be used for heating homes in place of wood.

The first steam engines used to mechanize textile machinery were coal-powered. What had been previously been done by hand was done by machines. This began the industrial revolution.
What was the world context in which the industrial revolution occurred?
During the early modern era, from 1450 to 1750, India and China dominated the world economy and attracted Europeans to their riches.
India exported cheap, high quality cotton to world markets. Indian agriculture was highly productive and wages were low so India had comparative advantage.
In England at this time agricultural yields were low, wages were high, and food was expensive. England had comparative disadvantage.
Therefore, India’s ancient traditions of trade networks, market systems, and successful products exceeded those of England’s in the 1500’s, 1600’s and early 1700’s.
Meanwhile China had remonitized her economy in the 1400’s using silver. Merchants from England, America, Netherlands, Spain and Portugal paid for Chinese goods in silver obtained from mines in South America. This created global demand for silver.
China, like India, was a powerhouse of world trade. The Chinese mass produced silk, porcelain, and tea for export and built a vast network of inland waterways and canals to transport these goods.
Britain traded with China but was not able to colonize that old, successful civilization, as she colonized India. However, opium from India and steam-powered British gunboats led to China’s defeat in the Opium wars (1839-1842) and resulted in Western and Japanese aggression against China in the 1800’s.
Meanwhile how did India fall from being dominant in world trade and having a trade surplus with Britain in the early modern era to the British overtaking her and eventually colonizing her around 1750?
First, Britain enacted protectionist legislation to protect her domestic textile industry by levying tariffs on imported Indian cotton. This drove the cost of Indian textiles higher than British textiles.
Manchester, England became the center of British textile manufacturing. Cotton shipped from America was made into textiles and clothing, and Manchester faced increasing demand for her goods.
Manchester clothing and textiles were:
Traded for slaves in Africa
The chief source of clothing in the colonies
Provided clothing for slaves on plantations
The more demand there was for textiles and clothing, the more manufacturers sought efficient ways of supplying it.

In the late 1700’s, a breakthrough came when James Watt invented the steam engine. The steam was heated with coal abundantly available in England. This improved textile manufacturing processes and made everything faster.

The enormous demand for textiles and clothing then fueled the growth of British shipping.
James Watt
Boiling water produced steam for mechanical motion
A Watt coal-powered steam engine
Steam engines powered vacuums used for mine water removal.
Steam engines powered new factories and machinery
At the same time textile manufacture was made faster and more efficient by the steam engine, Eli Whitney invented the cotton gin which speeded up cotton production in America by separating the seeds from the cotton.
Manchester flourished, charged lower prices, and out-competed India in cotton trade by the early 1800’s.

Britain was not satisfied with out-competing India in cotton trade. She seized an opportunity to colonize this ancient and successful civilization and by the early 1800’s had taken control of most of the subcontinent.
In 1600 Queen Elizabeth had given a charter to a group of 25 adventurers for a monopoly on trade with India. They named their company the British East India Company and established centers in Calcutta, Bombay, and Madras.
British East India Company overwhelms the Raj of Mysore
British take over of India - 1800
British in India - 1858