Unit 3 Industrial Revolution

Slide 1- The Industrial Revolution

- The Industrial Revolution refers to the ___________________ changes in the organization of manufacturing industry that transformed countries from rural agricultural to ___________________ industrial economies.
- It began in the late 18th century in the Midlands area of ___________________, then spread throughout the country, into continental Europe, and to the northern ___________________.

Slide 2- Prelude: The Population Explosion

- ____________________________
- War
- Disease
- Stricter ______________________________ measures
- The elimination of the black rat
- Famine, war, and ____________________________ were common in Europe prior to the Industrial Revolution.
- Many of the innovations we will ______________________________ in the following slides contributed to the decline of these ______________________________.
- By the end of the 17th century, Europeans had ______________________________ many measures (including quarantining the ill) to prevent the spread of the plague.
- In 1721, the last plague ______________________________ occurred in Marseilles, and the disease did not recur in ______________________________ or on the European continent.
- The brown rat thrived during the 17th and 18th ______________________________, while the black rat, which carried *pasteurella pestis* (the plague), was eliminated.
Slide 3- Further Reasons for Population Growth

- Advances in ____________________________, such as inoculation against smallpox
- Improvements in ____________________________ promoted better public health
- An increase in the food supply meant fewer ____________________________ and epidemics, especially as transportation ____________________________
  - In December of 1715, Lady Mary Wortley Montague came down with ____________________________ and developed severely pitted skin.
  - Though the disease had previously killed her brother, she managed to ____________________________.
  - As a result of her experience, Montague become a crusader for the practice of ____________________________, which she had learned while living in Turkey with her ambassador husband.
  - She began her ____________________________ by having her son and daughter inoculated.
  - Edward Jenner (1749–1823) would eventually receive credit for the smallpox ____________________________, but it was really Lady Mary Montague who pioneered and made the approach acceptable in Western ____________________________.
  - The practice of inoculation would eventually filter throughout ____________________________ and would be extended to prevent a variety of infectious diseases.
  - Europeans had improved urban sanitation during the ____________________________ years because they believed that dangerous miasmas (vapors or smells) caused ____________________________.
  - They created safer ____________________________ delivery systems and carried away refuse on a more regular basis.
  - Although miasma theories proved inaccurate, the ____________________________ improvements did help a great deal in controlling disease.
  - Increased food supply helped reduce ____________________________.
  - We will now ____________________________ several of the reasons for this phenomenon.
The Enclosure Movement

- In the second half of the 17th century, the English ______________________ (landowners) passed the Enclosure Acts, prohibiting peasants’ access to ______________________ lands.
  - The Enclosure Acts curtailed access to ______________________ lands, allowing the landed gentry to better organize and keep track of _______________, land, and animals.
  - Landowners also enclosed their own ______________________ to deny access to peasant farmers.
  - Several methods of ______________________ proved popular, including growing hedges or putting up stone walls or ______________________ fences.
  - The former ______________________ was particularly popular in Britain’s Lowlands region.
  - The movement began in ______________________, having the biggest effect on the Midlands, East Anglia, and Central England.
  - It spread to many other European countries, including Russia, Hungary, ______________________, France, and Denmark.
  - Although ______________________ to the medieval era, enclosure was particularly common throughout the late 17th, 18th, and early ________ centuries.
  - **The Pros:** Many farmers benefited from the Enclosure ______________________, which led to more productive methods of farming and an increase in __________ production.
  - Small, unproductive farms went out of ______________________, ceding their land to larger, economically-sound farms.
  - Poor farmers who had been making no ______________________ were able to work on large farms to support their families.
  - **The Cons:** The Enclosure Movement was a practical ______________________ for organizing land among wealthy landowners, but it adversely impacted peasant ______________________, who struggled with poverty and lack of adequate work.
Many poor farmers were forced to give up their parcels to __________________________ landowners and move to cities in search of work.

Peasant families holding land by custom were generally unable to produce __________________ documents proving their ownership.

Accustomed to using the public lands to obtain ____________________________, fruit, nuts and “pig fodder,” a __________________________ sometimes known as “gleaning rights,” this access no longer existed.

**Slide 5- Innovations: The Threshing Machine**

Scottish mechanical engineer Andrew Meikle invented the __________________________ machine (c. 1796) for use with crops.

The machine separated the __________________________ from the stalks and husks far more quickly than hand threshing; as a result, crop production __________________________ and led to agricultural abundance.

The following slides show several innovations that proved critical to the early __________________________ Revolution in Britain.

Without the greatly increased yields that these __________________________ fostered, society would not have gained the security in its food supply that allowed for increased industrial specialization and __________________________ in areas other than agriculture.

**Slide 6- The Seed Drill**

Englishman Jethro Tull __________________________ the mechanized seed drill around 1701.

Uniform seeding allowed __________________________ between the rows of seedlings during growth, thus __________________________ crop yield.

Before this invention, __________________________ carried their seeds in bags and walked through the fields throwing the __________________________ into hand-ploughed furrows, or rows.

This __________________________ did not allow for a very even distribution and wasted a good deal of the seed, resulting in lower plant __________________________.
- Tull’s seed drill, on the other hand, could be ____________________ behind a horse.
- It had ____________________ and contained a ______________ filled with seed.
- A wheel-driven device _________________________ the seed out evenly as the entire machine was pulled across the field.

**Slide 7- Jethro Tull (1674–1741)**
- Despite his aristocratic ____________________ , Jethro Tull’s simple, elegant tool made him an icon and hero for ______________ farmers in his era and today.

**Slide 8- Townshend’s Four-Field System**
- After 1730, Charles “Turnip” Townshend introduced the four-field method of crop ________________________
- Crop rotation is critical because consistent _________________________ of the same crop on a field leads to a decline in important soil nutrients, thus _________________________ crop yield.
- In Townshend’s _________________________, farmers would plant a staple crop such as barley or wheat one year, change to another _________________________ crop the next year, and plant turnips and clover for the next two years.
- The latter two crops helped replenish the ______________ with nutrients it had lost during the barley and ______________ planting years.
- The droppings from _______________ that grazed on the clover and turnips further helped _________________________ the soil.
- Turnips had been used in _________________________ as cattle feed since the 1660s, but Townshend was the first to use them for ______________ rotation.

**Slide 9- Selective Breeding**
- Select animals with the best ________________________
- Produce bigger ______________________
Robert Bakewell and other experts interbred different types of sheep, trying to create a new breed that the best characteristics of others.

These greatly increased the average sheep’s size.

One of these cross-bred, the Dishley, had long, coarse wool and produced a high quality and yield of .

Bakewell also experimented with breeds of .

In 1769, he the Longhorn, which provided exceptional meat.

Bakewell was also the first to his animals out to be bred with other people’s livestock.

His farm in Dishley, Leicestershire, became a model of management.

Another farmer, Thomas Coke, also experimented with cattle, sheep, and and produced several new breeds.

**Slide 10 - Britain Takes the Lead**

- Great Britain’s :
- Plentiful iron and 
- A navigable system
- A strong commercial that provided merchants with capital to invest in new 
- Colonies that supplied and bought finished goods
- A government that improvements in transportation and used its navy to protect British
The last three of these advantages (commercial power, colonies, and support of transport improvements) can be credited in part to the relatively calm political situation in ________________.

The European continent, on the other hand, suffered volatile conditions that impeded innovation.

**Slide 11 - The Importance of Textiles**

- For hundreds of years, the ________________ of cloth had required the weaver to pass a shuttle containing thread back and forth across the ________________ area of the loom.
- This process required the use of both __________, and some types of weaving could only be done by two people sitting together at the __________.
- In 1733, John Kay invented the ________________ shuttle, exponentially increasing the processing speed of ________________.
- One person could now ________________ the loom alone and could make many shapes and sizes of cloth.
- These changes doubled the ________________ of weaving.
- The flying shuttle consisted of a ________________ box at each end of the loom.
- A long board called the shuttle race ________________ the two shuttle boxes.
- Using cords attached to the top of the loom, a ________________ could single-handedly knock the shuttle back and forth from one shuttle box to the other, weaving the ________________ across the loom in the process.
- By 1800, many people ________________ handlooms with a flying shuttle.
- There may have been as many as a quarter million looms in ________________ by that time.
**Slide 12- The Domestic or “Putting Out” System**

- The _______________________ industry was the most important in England

- Most of the _____________ was done in the home
  - Textile _______________________ was the most important industry in 18th-century Britain.
  - Most textile work was carried out in the _____________, often in conjunction with farm work.
  - This method of production was often called the “putting-out” system because ________________ would “put out” the materials for home-based workers to manufacture into ____________________________ products.
  - Merchants controlled ________________ production from start to finish.
  - They bought raw _____________ from sheep farmers, had it spun into yarn by farmers’ wives, and took it to rural weavers to be made into cloth; this weaving process was ________________ than relying on urban craftsmen.
  - Merchants then ______________________ the cloth and gave it to finishers and dyers.
  - Similar home-based methods of ______________________ and controlling the process of manufacture, often referred to as “cottage industries,” became prevalent with other items, including nails, cutlery, and ______________________ goods.

**Slide 13- The Spinning Jenny**

- In 1764, inventor James Hargreaves built a __________________ that became known as the spinning jenny (or spinning frame).
- The machine used eight spindles with a __________________ wheel that allowed the operator to _____________ eight threads at once.
- Legend states that Hargreaves invented the __________________ jenny after observing a spinning wheel that his daughter Jenny had accidentally knocked over.
- Despite its fall, the ________________ was still turning.
Hargreaves realized it would be possible for one person to spin multiple
__________ at once by using several spindles lined up in a row.

The new machine allowed the Hargreaves family to ________________ much
more yarn than any of their neighbors.

**Slide 14- The Water Frame**

- ____________________________ the spinning jenny:
- Horses
- The ________________ wheel
  - The spinning ________________ was too cumbersome to be operated by hand, so
    ____________________________ Richard Arkwright sought another way to run the machine.
  - At first, Arkwright ____________________________ using horses.
  - When this proved impractical, he ____________________________ further and found a
    solution that used a wheel powered by ____________________________ water.
  - Harnessing the power of England’s abundant ________________, the spinning jenny
    could now continue to ____________________________ day or night.

**Slide 15- Cotton Imported to Britain Between 1701 and 1800**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1701</td>
<td>1,985,868</td>
</tr>
<tr>
<td>1710</td>
<td>715,008</td>
</tr>
<tr>
<td>1720</td>
<td>1,972,805</td>
</tr>
<tr>
<td>1730</td>
<td>1,545,472</td>
</tr>
<tr>
<td>1741</td>
<td>1,645,031</td>
</tr>
<tr>
<td>1751</td>
<td>2,976,610</td>
</tr>
</tbody>
</table>
Look carefully at this table. The figures on the right are in British pounds. Most of the cotton imported to the British Isles during the 18th century came from the _________________. How do you think the American Revolution affected this ________________?

- Are the ________________ consistently increasing or decreasing?

- What do the changes in the figures tell you about the pace of the ________________ Revolution in Britain?

**Slide 16 - Cotton Goods Exported by Britain 1701 to 1800**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1701</td>
<td>£ 23,253</td>
</tr>
<tr>
<td>1710</td>
<td>5,698</td>
</tr>
<tr>
<td>1720</td>
<td>16,200</td>
</tr>
<tr>
<td>1730</td>
<td>13,524</td>
</tr>
<tr>
<td>1741</td>
<td>20,709</td>
</tr>
<tr>
<td>Year</td>
<td>Value</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>1751</td>
<td>45,986</td>
</tr>
<tr>
<td>1764</td>
<td>200,354</td>
</tr>
<tr>
<td>1780</td>
<td>355,060</td>
</tr>
<tr>
<td>1787</td>
<td>1,101,457</td>
</tr>
<tr>
<td>1790</td>
<td>1,662,369</td>
</tr>
<tr>
<td>1800</td>
<td>5,406,501</td>
</tr>
</tbody>
</table>

- By 1802, the cotton/textile made up between 4 and 5 percent of Britain’s national income.
- By 1812, 100,000 spinners and 250,000 were working in the industry.
- Production had to 8 percent and had overtaken the woolen industry.
- More than half the value of British home exports in 1830 consisted of cotton.
- The cotton industry originally developed in three main districts: Manchester, the Midlands, and the Clyde Valley in Scotland.
- By the 1780s, the industry became more concentrated in Lancashire, where a large proportion of the depended on cotton and textile production.
- Do you think this dependence might have presented any for the people of Lancashire?
- What are some of single-product economies?
- Look at the tables again. In what years were the or decreases in manufacturing inconsistent?
- What factors __________________ have accounted for these inconsistencies (e.g., bad harvests, political unrest)?

**Slide 17 - The Coming of the Railroads: The Steam Engine**

- Thomas ________________________________

- The __________________________ engine
  - Thomas Newcomen built the first steam _______________________, although this invention is generally credited to James Watt.
  - Newcomen used his first steam engine to __________________ water out of a ________________.

**Slide 18 - James Watt’s Steam Engine**

- Condenser

- Increased ________________________________
  - In 1763, James __________ was asked to repair a Newcomen steam engine.
  - He modified the engine by adding a __________________________ that increased the machine’s efficiency.
  - This invention made the steam engine an economical __________________________ of power and was so successful that for a hundred years no drastic alterations were made to the ________________

**Slide 19 - Trevithick’s Engine**

- In 1801, Richard Trevithick first attached a steam engine to a __________________________.

- Trevithick’s __________________________ was not successful for moving people, but he had planted the idea of human __________________________ transport.
  - Richard Trevithick is considered to be the true inventor of the __________________ locomotive.
  - He developed a high __________________________, non-condensing steam engine that improved on Watt's design.
  - On Christmas Day in 1801, he ________________ the first steam passenger vehicle.
By ______________, Trevithick had applied steam to hauling loads along a ________________

His steam ________________ was used to transport iron a distance of about nine miles, which in his time was a ________________ achievement.

Trevithick's "Catch-Me-Who-Can" locomotive (shown on this slide) was ________________ in 1808.

Its top speed was about _________ miles per hour.

**Slide 20- Stephenson’s Rocket**

Just a few years later, George Stephenson ________________ and built the Rocket, the first steam locomotive practical for pulling ________________ stock (train cars).

The ________________ was a critical player in the advent of the Liverpool & Manchester Railway.

The directors of the Liverpool & Manchester ________________ were unsure whether to use locomotives or stationary ________________ on their line.

To help decide, they held a competition in ________________ in which the winner would receive £500.

Each locomotive had to haul a ________________ three times its own weight at a speed of at least ten ________________ ____________________.

The locomotives had to run 20 times up and down a ________________, a distance equivalent to a trip ____________________ Liverpool and Manchester.

The Rocket won the ________________, reaching speeds of up to ________________ miles per hour.

**Slide 21- The Liverpool and Manchester Railway**

- The first widely-used ________________ train was the Liverpool & ____________________ Railway.

- The L&M incited a ________________ in railway ____________________ for the next 20 years.
- By 1854, every _______________________-sized town in England was connected by __________.
  - The 31-mile-long Liverpool & Manchester ___________________________ opened on September 15, 1830.
  - Passenger __________________ began their journey at the Crown Street Station in Liverpool and _______________ at Water Street in Manchester.

_Slide 22- The Growth of the Railroads_
- These drawings show us the status of rail ___________________________ at the end of the 18th century.
- This depot and ________________________ still exist today, so we know the drawings are quite accurate.
- During this era, a ___________________________ could travel up to 44 miles each day.
- While train travel ___________________________ an enormous improvement in the speed of travel, it was only the beginning of mass ___________________________.

_Slide 23- The Telegraph_
- In 1844, Samuel ________________________ sent the first successful telegraph ___________________________ between two cities (Baltimore and Washington, D.C.).
- The ___________________________ proved to be a major breakthrough in communications, allowing people to get news far more ________________________ about events taking place hundreds—or even thousands—of ________________________ away.
- In 1858, ________________________ Victoria of England inaugurated the first use of transatlantic ________________________ by sending a 98-word message to President James Buchanan of the United States.
Slide 24 - British Dominance

- At the beginning of the 19th century, __________________ had more rail lines and major
  urban centers than any other ________________.
- While London was the economic ______________ of England and the British empire,
  the Industrial Revolution had transformed many other towns and cities into large
  __________________ centers.
- Particularly important were the ______________________ cities of Manchester and
  Leeds.

Slide 25 - Steam-Powered Water Transport

- In 1807, Robert Fulton attached a ____________________ to a ship called the “Clermont.”
- The steam engine propelled the ship by making its __________________ wheel turn.
  - While the steamship was ______________________ in the United States and had a great
    impact on industry there, it also affected the Industrial Revolution in England.
  - Steamships began to ply British ______________________ and were soon used for
    transatlantic travel.

Slide 26 - Steel

- Early steel-making was a fairly ____________ and expensive process.
- In 1858, Sir Henry Bessemer addressed this __________________ by creating a new type of
  furnace called the Bessemer converter.
  - This machine produced high-quality ______________ at half the price of earlier methods,
    reducing production costs for countless ________________.
  - The invention fueled the growth of ______________ centers and multistory buildings that
    required steel structuring.
Slide 27- The Great Exhibition at the Crystal Palace

- The Great Exhibition of 1851 in __________ was mounted to symbolize Great Britain’s economic, __________, and military superiority.
  - The British government staged the Great Exhibition of 1851 to show off Britain’s __________, industrial, and military superiority.
  - It was a truly __________ event, with more than 13,000 exhibits from all over the globe showcasing the achievements of the British __________ at home and in the colonies.
  - The British designed the __________ grounds and buildings to impress the world and the more than 6.2 million visitors who came to the exhibition.
  - The park surrounding the Crystal Palace, for example, contained an impressive set of __________ that used close to 12,000 jets.

Slide 28- Labor Conditions

- Laborers often worked in dangerous and __________ conditions
  - In the illustrations in this slide, workers are shown __________ in the shallow tunnels of late 18th-century mines.
  - Notice that a __________ is in the front in the lower picture.
  - Female __________ workers often suffered abuse at the hands of male workers.

Slide 29- Women: The Labor Behind the Industry

- During the Industrial Revolution, __________ of labor occurred along gender lines.
  - Women had different jobs than men, although they participated in many of the same __________ during this period.
  - High poverty rates among both __________ and married women forced many to find work outside their __________ in domestic service, textile factories, piecework shops (where workers were paid by the piece), and coal mines.
Some women found that new urban and _______________ work opportunities improved their way of life and gave them some extra spending money.

Others encountered increased _______________, isolation, and dependence on employers for day-to-day sustenance.

**Slide 30- Child Labor: Unlimited Hours**

- Factories employed many ________________, benefiting not just from their energy but also from their small ________________, which could manipulate tiny parts of ________________ more easily.
- ________________ could also legally pay children less than adults, and parents were often eager to send their children to ________________ and bring in more income for the family.
- Children as young as ___________ years old worked long, difficult days for very little pay.
- Children sometimes worked up to 19 hours a day with single ________________ of one hour or less.

**Slide 31- Child Labor: Dangers**

- The smallest and youngest children in ________________ factories usually worked as scavengers.
- This very dangerous task involved picking up tiny pieces of loose ________________ from under the machinery.
- Working ________________ in British mines were perhaps even worse.
- An 1842 Parliamentary Committee reporting on mines found that many children were ________________ under intolerable circumstances.
- Children as young as four years old worked as “trappers,” opening ________________ doors to let “hurriers” (also children) pull through loaded wagons.
- Often working in the dark because they could not afford ____________________, children labored in these conditions up to _______ hours a day.
- The Parliamentary Committee further reported that ____________ beat the children for falling ______________ on the job.

**Slide 32- Child Labor: Punishment**

- ____________________________
- Beatings
- ____________________________ sent to prison
  - Child ________________, most of whom came from severely impoverished backgrounds frequently found it impossible to keep up with the pace required in the factories—primarily because they were often ____________________ and debilitated.
  - Many children were ____________________ for falling behind.
  - They were also beaten or docked pay for arriving to work late and for ____________________ to other children.
  - Apprentices who ran away from ____________________ sometimes faced prison sentences.
  - Despite ____________________ working conditions, meager pay, and vicious punishments, family poverty ________________ many children to go to work.

**Slide 33- Child Labor: Movements to Regulate**

- Factory owners ________________ that child labor was good for the economy and helped build children's ________________
- Factory Act of 1833: ________________ child labor and the number of ________________ children could work in textile mills
  - In 1833, the British government passed the Factory Act to ________________ conditions for child laborers in textile factories.

The act stipulated the following:
- No child under ________ years of age was permitted to work.
- Employers had to have a ________________ or age certificate for each child laborer.
- Children between the ages of nine and __________ could not work more than nine hours a day.
- Children between 13 and 18 could not work more than ______ hours a day.
- Children could not work at ________________.
- Each child had to receive at least two hours of ____________ per day.
- Four factory inspectors were appointed to ________________ the law throughout the whole country.
- Despite these ________________________, the Factory Act did not put an immediate stop to mistreatment because it only applied to children working in textile mills, not ___________ mines or other types of factories.
- The Mines Act of 1842 established ________________ on child mine labor, barring children under ten from working in the mines.

**Slide 34- Trade Unions**

- Agricultural laborers who had formed a ________________ union in the village of Tolpuddle were arrested on false charges and sent to the British __________________ of Australia.

  - By the end of the 19th ________________, labor conditions had greatly improved.
  - These improvements, however, had only been achieved with __________________ from workers, who increasingly protested their ________________ working conditions.
  - Workers eventually __________________ their gatherings and protests into trade unions.
  - In 1780 and 1799, Combination Laws made it __________________ for workers to gather together to pressure employers for shorter hours, ________________ pay, or better working conditions.
  - As a result, trade ________________ in effect became illegal.

**Slide 35- Labor Unions**

- Sir Francis Burdett
- The 1871 Trade Union Act

- In the cartoon shown in this slide, Sir Francis Burdett is depicted as triumphant over the and anti-union politicians who hindered the cause of trade unions.
- They are shown in front of a where many trade unionists were incarcerated.
- Burdett had been a leading parliamentary of unions in the 1820s.
- He was jailed for a short time because of his views.
- Many extremely strikes occurred before 1870, leading to hundreds or perhaps thousands of and deaths.
- The government, led by Minister William Ewart Gladstone, appointed a Royal Commission to investigate the trade unions.
- As a result of the Royal Commission’s work, passed the Trade Union Act of 1871, recognizing the collective or identity of trade unions and effectively legalizing them.
- Trade unions were thereafter allowed to all of their own activities.
- As a result of this, trade unions could sign contracts, enter into agreements, and function as legal entities (not simply as gatherings of people); in addition, they could exercise all these without punishment or prosecution.
- Trade unions also received exemptions and immunities: for example, would not intervene during strikes.

**Slide 36 - The Chartists**

- reformers
- Chartists wanted the to adopt a “People’s Charter”
- Adopted by convention of labor organizations in 1838
- Influenced the struggle for voting rights
A number of different groups emerged in the middle of the 19th century.

Some complained peacefully, while others used sabotage and ____________________.

The Chartists were members of a political ____________________ movement that promoted the adoption of a “People's Charter.”

This document called for:

- ________________ by ballot
- universal ____________ suffrage
- annual ________________
- equal electoral districts
- no property qualifications for ________________ of Parliament
- The Chartist ________________ gathered momentum in large part due to the fervor and speaking talents of Feargus O'Connor.
- He traveled all over northern ________________—a highly industrialized region where recurrent economic depressions had caused considerable discontent—to garner ________________ for the charter.
- In August of 1838, the charter was adopted at a national ____________________ of labor organizations in Birmingham.
- The movement continued to grow for decades and greatly ____________________ the struggle for universal male voting rights.

Slide 37- The Luddites

- “General Ned Ludd” and the “____________ of Redressers”
- Many workers expressed outrage over low ________________ and the employment of un-apprenticed workmen, who did not share the privileges and higher wages of ________________ workmen.
Some of these disgruntled ________________, who later came to be called Luddites, broke into factories and destroyed _________________.

The Luddites referred to themselves as the “Army of Redressers”; their leader was “General Ned Ludd,” although there is little ________________ to suggest that he was a real person.

The impact of the Luddite movement, however, was felt through the ________________ of equipment throughout the Midlands.

In a matter of weeks, 200 machines were ________________ and special police units had to be hired to ________________ factories.

The Prince Regent offered a reward (shown in this notice in this slide) to anyone "giving information on any person or persons wickedly ________________ the frames.”

Today, the term “Luddite” refers to a ________________ who is opposed to new technology.

**Slide 38- The “Peterloo Massacre”**

The most celebrated ________________ of the early 19th century was the “Peterloo Massacre” of 1819.

On August 16, 1819, laborers ________________ annual parliaments planned a meeting to agitate for universal suffrage.

A crowd of about 50,000 gathered in St. Peter’s Fields to ________________ to several speakers.

By early afternoon, the length and size of the ________________ so alarmed city magistrates that they ordered armed ________________ in the Lancashire militia to arrest some of the organizers and disperse the _________________.

The ________________ ended up charging and firing upon the crowd, however, killing 11 and wounding approximately 400 others.

Different ___________ reported different crowd sizes, but it was undoubtedly well-attended.
**Slide 39- The New Industrial Class Structure**

- The social class ___________________________ that emerged during the Industrial Revolution can be broken down as follows:
  - Upper Class: Very rich industrial families; _______________
  - Upper Middle Class: Businesspeople and ________________, including lawyers and doctors
  - Lower Middle Class: Other professionals, including ____________, shop owners, and office workers
  - Working Class: ______________ workers and small __________________________
  - Impoverished: Itinerant workers and the __________________________

**Slide 40- Lower and Middle Class Housing**

Working class housing:

- In the rush to ______________ houses for workers moving to the cities, builders quickly constructed __________________________.
- These row __________________________ houses tended to be overcrowded and unsanitary, and landlords did not adequately maintain them.
- In one typical example, 17 people from __________________________ families lived in a 15 by 12 foot area.
- Some tenements had yards in the back with an outdoor __________________________ that all residents used.

Middle class housing:

- Although its residents were __________________________, emerging middle class districts still suffered from the poor __________________________ that plagued entire cities.
- Disease spread quickly through ______________, without regard to social distinctions.

**Slide 41- Travel**

- The social __________________________ traveled in different manners as well.
The lithographs shown in this slide (produced by A. J. C. Bourne in 1839) depict (from top to bottom) first-, second-, and ________________-class travel.

**Slide 42- Social Mobility**

- This illustration of a “typical apartment” appeared in a Parisian ______________________ in 1845
  - This illustration in this slide offers a classic example of the Industrial Revolution’s impact on housing and __________________________ development (Bibliothèque National, Paris).
  - Servants are shown working on the ________________ floor, while an elderly couple dances to music a young girl plays on the piano.
  - On the first floor (known as the second floor in the United States), two ________________ people relax in elegant surroundings.
  - Above them on the second floor, a bourgeois family lives in comfortable but somewhat __________________________ conditions.
  - The rooms on the third floor are ________________________________.
  - In the room on the left, a ________________ appears to be evicting a resident, while a man and woman in the other room entertain themselves with a small dog.
  - The fourth floor is ________________________________ into three rooms.
  - Two artists relax in the room on the left, a young man sits in the ________________________________ room, and a poor man and woman live with their three children in the room on the right.

**Slide 43- Methodism**

- ________________ Wesley
  - “Instant __________________________”
  - Appealed to the __________________________ class
  - Many members of the working class were attracted to a new ________________________________ movement called Methodism, __________________________ by John Wesley.
  - Methodism was a __________________________ doctrine stating that people could go to heaven by acting __________________________ and believing in God.
This idea of “instant salvation” ____________________ to the working classes, who had little time or money to ____________________ to religious activities and donations.

Methodism’s simple message ____________________ people who worked dangerous mine and factory jobs: these workers faced increasing ____________________ insecurity in a rapidly industrializing world.

Charismatic ____________________ spoke directly to people in English rather than in Latin and made them feel ____________________ accepted.

Revival meetings, which included ____________________ and preaching, took place in cottages and barns.

**Slide 44- New Economic Theories**

- New social and ____________________ philosophies arose as a response to increasing industrialization and ____________________ in working conditions

- In the following slides, we will look some of the leading economic ____________________ from this period.

**Slide 45- Adam Smith (1723–1790)**

- Adam Smith laid the ____________________ framework for the concept of the free market

- Born in ____________________, Adam Smith is often considered the founder of economics as a discipline.


- Smith then argued that government ____________________ to promote the social good are ineffective compared to unbridled market forces; he also opposed government ____________________ in the economy.
- His most _______________________________ work was *The Wealth of Nations*, published in 1744.

- Adam Smith and the other economic ________________________________ shown on the following slides addressed many fundamental economic issues ___________________________ to the Industrial Revolution.

- Because many of these men __________________________ the negative outcomes of continued industrialization, economics became known at the time as the “dismal science.”

**Slide 46- Thomas Malthus (1766–1834)**

- In *An Essay on the Principle of Population* (1798), Malthus predicted that the ________________________________ would not meet the needs of the growing population

  - Thomas Malthus postulated that food ________________________________ would decrease population, thus bringing the food supply into better ________________________________ with the remaining population.

  - This balance, however, could be ________________________________ by rising birth rates, which would eventually cause food shortages to reappear.

**Slide 47- David Ricardo (1772–1823)**

- The “Iron _______ of Wages”

  - David Ricardo’s “Iron Law of Wages” ________________________________ that wages naturally tend toward a minimum level that corresponds to the subsistence needs of workers.

  - Ricardo’s ideas were even more “dismal” than those of Malthus because he saw the working class as trapped in their ________________________________-level conditions.

  - He did not offer any ________________________________ solutions to the cycle of poverty.

**Slide 48- Karl Marx (1818–1883)**

- Philosopher, social scientist, ________________________________ and revolutionary, Karl Marx is regarded by many as the most influential economic and social ________________________________ of the 19th century

  - Karl Marx theorized that the struggle between ________________________________ classes was fundamental to society.
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- He believed that society faced a constant ______________________ between the rich and the working classes, and that this class division could be blamed in large part on __________________ ownership of the means of production (e.g., corporations, factories).
- In order for class ______________________ to be resolved, Marx believed that the major means of production had to be __________________ owned.
- __________ had a tremendous impact on the world’s political systems.
- Two of his most influential writings are:
  - *The Communist Manifesto*, written with Friedrich Engels in __________, the same year as the revolutionary uproar that swept across __________________.
  - *Das Kapital (The Capital)*, in which he outlined his economic ______________ in great detail.
- Marx was eventually forced to move to __________________ to avoid political persecution.
- He lived in __________________ his entire life and died nearly penniless, despite having radically __________________ the political and economic foundations of Europe.

**Slide 49- Jeremy Bentham (1748–1832)**

- Utilitarianism: “The greatest good for the __________ people” or “The greatest good over the __________ pain”
  - Jeremy Bentham studied law and __________________ to arrive at his theory of utilitarianism, which stressed that all actions should be completed with the ______________ of achieving the greatest happiness for the greatest number of people.

**Slide 50- Robert Owen (1771–1858)**

- Utopian ______________
- Founded New Lanark Mills in ______________ as a model cooperative factory
- Many ______________ visited New Lanark, and a few adopted aspects of Owen’s __________
Despite the many appalling pictures of working class life under ________________________, utopian socialists such as Robert Owen believed in the power of communal organization.

Preceding Marx by a full ________________________, Owen showed (albeit in microcosm) the potential profitability of treating ______________ and children well.

At his New Lanark Mills cooperative in Scotland, Owen provided __________________________ working and living conditions for all his workers—particularly children.

He soon stopped employing children under _______ years old and arranged for their education.

Not all ____________________________ socialists had as much success as Owen, but many achieved notoriety for their ________ and efforts, including Count de Saint-Simon, Charles Fourier, and Étienne Cabet.

**Slide 51- British Industrialization**

By the middle of the 19th century, industrialization had __________________ across Europe and the United States, aided by the development of railroad links that brought resources to the new factories and __________________________ their finished goods to world markets.

During the late 18th and early 19th centuries, Great Britain invested considerable __________________________ in its wars with America and with Napoleon’s empire.

These conflicts, however, did not impede Britain’s ability to __________________ with the rest of the world.

The British navy protected the island nation from __________________________, allowing internal trade to continue and grow.

The British even managed to profit from war by increasing __________________________ of war supplies to sell to their allies.

**Slide 52- France**

- Couldn’t keep up with __________________________ industrialization

- French Revolution and resulting political chaos __________________________ economic development
France began a phase of industrialization in 1836, when Eugène Schneider, a wealthy Alsatian businessman, began to produce railway equipment.

In 1838, Schneider produced the first French locomotive, “la Gironde,” which made him very wealthy.

Despite this burst of industrialization, the French Revolution and other uprisings in 1830 and 1848 significantly hindered France’s economic growth.

**Slide 53- French Industrialization after 1848**

- Government investment
- Public________________
- ____________________
- ____________________
  - France and many other European countries underwent major political upheaval in 1848, collectively known as the Revolutions of 1848.
  - By that year, France had industrialized, particularly in major urban centers such as Paris.
  - The end of the Revolutions of 1848 led to an even more significant era of French industrialization.
  - One of the initiators of this era had been Baron Haussman, who had replaced much of Paris’ medieval infrastructure after the end of the Napoleonic Wars, modern urban facilities such as boulevards, parks, and transportation.
  - These changes served as a foundation for the entire country after 1848.
  - The French government installed sewers, market places, new neighborhoods, roads, a transportation system, and port facilities.
  - By 1870, telegraph________________ had been installed throughout most parts of
These modernization efforts enabled France to attract _________________ investors who could fund more industrialization _________________.

**Slide 54- Germany**

- The Zollverein

- _______________
  - The Industrial Revolution began about a _________________ later in Germany than it did in England.
  - The Zollverein (German for “customs union”) united 38 German states in 1834 and created a better trade _________________ by reducing internal tariffs and _________________. (Tariffs are charges for goods that cross a geographical boundary.)
  - In 1818, ________________ became the first German state to abolish internal tariffs.
  - By 1834, the Zollverein _________________ 18 German states in a “customs union” (comparable to a free trade zone like the North American Free Trade Agreement today).
  - The Zollverein eventually _________________ tariffs between almost all German states.
  - Trade between these states was therefore not ________________, but trade between these states and non-Zollverein members was ________________ to tariffs, which a central agency collected and then distributed to each German state in ________________ to its population and resources.

**Slide 55- Electricity: Edison**

- Thomas Edison’s greatest _________________ was the development of a practical incandescent electric light.
  - Contrary to popular belief, he didn't “invent” the light bulb but instead ________________ upon a 50-year-old idea.
In 1879, using low-current ____________________, a small carbonized filament, and an improved vacuum inside a glass sphere, he was able to produce a ______________________, long-lasting source of light.

The earliest electric lighting was very dim __________________ to gas or oil lighting.

This ______________________ meant that it was some time before electric lighting became an acceptable __________________ for most people.

Electric lighting’s convenience and cleanliness, combined with the added ______________________ it provided towns and cities at night, made it ______________________ by the end of the century.

Slide 56- Electricity: Tesla

- In the 1880s, electrical engineer Nicholas Tesla __________________ the principles of alternating current.
- The electric ____________, or the Tesla coil, keeps the current ______________________ in the power lines.
  - Tesla’s ______________________ allowed for safer lighting and power delivery to major urban centers.
  - It also had a ______________________ impact on industry because it provided factories with increasingly dependable ______________ of power.

Slide 57- Cultural Impact: Romanticism

- The Romantics glorified the divine power of ________________ as a reaction to the Industrial Revolution’s achievement of controlling nature through ________________________.
  - Romanticism was a literary and ________________ movement in the late 18th and early 19th centuries.
  - Romantics hailed individualism and ________________ and rejected the mechanization of daily life that the Industrial Revolution had brought.
They encouraged people to ________________ with nature and to allow themselves to experience greater emotional __________________ and feeling.

Several well-known Romantic figures include:

- William Wordsworth (English poet)
- Samuel Taylor Coleridge (English poet)
- __________________ Blake (English poet)
- Ralph Waldo Emerson (American poet and essayist)
- Henry David Thoreau (American essayist)
- James Wyatt (English architect)
- Robert Schumann (German composer)
- __________________ Wagner (German composer)
- John Constable—a famous landscape artist who painted this scene, called the Hay Wain

**Slide 58- Cultural Impact: The Visual Arts**

- French artist Honore Daumier painted the ________________ and working classes.

- In *Third-Class Carriage* (shown here), he __________________ with great compassion a group of people on a train journey.

  - *Third-Class Carriage* is an example of an Industrial Revolution-era artist __________________ the social themes of the period.

  - Before this time, the arts (especially painting) had been the province of the ________________ classes, who were generally __________________ in depictions of the poor.

**Slide 59- Cultural Impact: The Visual Arts**

- J.M.W. Turner

  - *The Fighting “Temeraire”*

    - Romantic art often illustrated old idyllic scenes like ________________, castles, or farms, along side steam trains, boats, or some other industrial ________________.
- The painting in this slide ___________________________ the passing of a bygone era.
- The *Temeraire* was one of the ships that ______________________ the Battle of Trafalgar
  and is being towed away to be destroyed by a __________________ steam tugboat.

**Slide 60- Cultural Impact: Literature**
- Charles Dickens (1812-1870)
  - Charles Dickens’s ____________________________ defined the poverty of the Industrial
    Revolution.
  - His works include *Hard Times, Oliver Twist, Great ____________________________,* and
    *A Christmas Carol.*
  - Dickens’s writings __________________________ many descriptions of urban life during the
    Industrial Revolution and __________________________ the plight of the poor, whom he
    supported and championed throughout his ____________________________.

**Slide 61- Cultural Impact: Literature**
- Emile __________
  - Emile Zola (1840–1902) was a French __________________ who wrote about many of
    France’s most important social _________________________.
  - His novel *Germinal* described the __________________________ and difficulties that confronted
    miners in a French village __________________________ the Industrial Revolution.
  - This book culminates in a __________________________ against the mining company.

**Slide 62- SUMMARY- Was the Industrial Revolution more beneficial or harmful?**
- The Industrial Revolution changed __________________ society significantly.
  Consider the following:
  - --Thousands of people moved from __________ to urban centers where
    __________________________ was located.
  - This led to crowding and the creation of _________________ in the cities.
- New social class divisions including a new wealthy “bourgeoisie” (middle class), the owners of the factories and other industrial enterprises, as well as a new lower working class, which often had poor working and lived in poverty.
- Industrialization brought high levels of environmental pollution.
- The of coal for energy and home often blackened city skies.
- Increased food production and manufactured meant greater and lower prices.
- This meant economic for many people in the industrialized countries and a higher of living.
- By 1900, many people in the Western world more and lived than their predecessors.