A New Industrial Age

US History
Section 1 Objectives:

By the end of this lesson, I will be able to:

1. Explain how the abundance of natural resources, new recovery and refining methods, and new uses for them led to intensive industrialization.

2. Identify inventions that changed the way people lived and worked.
Section 1: The Expansion of Industry:

- **Main Idea:** At the end of the 19th century, natural resources, creative ideas, and growing markets fueled an industrial boom.

- **Why it Matters Now:** Technological developments of the late 19th century paved the way for the continued growth of American Industry.

- **Key Terms:**
  - Bessemer Process

- **Key Names:**
  - Edwin L. Drake
  - Thomas Alva Edison
  - Christopher Sholes
  - Alexander Graham Bell
The year is 1863 and railroad construction is booming. In six years, the U.S. will be linked by rail from coast to coast. Central Pacific Railroad employs mainly Chinese immigrants to blast tunnels, lay track, and drive spikes, all for low wages......
Discussion Questions: Turn and Talk:

1. What dangers do you think the railroad workers will encounter? (Phineas Gage)
2. How will businesses and the general public benefit from the transcontinental railroad?
3. How might railroad construction affect the environment?
4. What are the pros and cons of railroad expansion?
Section 1: The Expansion of Industry:

- As the settlers continued to push west, America was still largely agricultural – that will all change.
- In this chapter, we will see American industry grow to be the largest in the world.
  - How did it happen?
  - 1) Natural Resources
  - 2) Governmental support
  - 3) Urbanization
Black Gold:

- In 1859, Edwin Drake used a steam engine to drill for oil
- This breakthrough started an oil boom in the Midwest and later Texas
- Later, the gasoline would be used for cars
Bessemer Steel Process:

- Coal and iron were plentiful within the U.S.
- When you removed the carbon from iron, the result was a lighter, more flexible and rust resistant compound – Steel (**Bessemer process**)
New Uses For Steel:

- The railroads, with thousands of miles of track, were the biggest customers for steel.
- Other uses emerged: barbed wire, farm equipment, bridge construction (Brooklyn Bridge-1883), and the first skyscrapers.

Brooklyn Bridge: NYC
During this time period, which one was NOT a main use for steel:

1. Barbed Wire
2. Railroad tracks
3. Bridge Construction
4. Farm equipment
5. These were all main used for steel
New Inventions Spur Industry:

- Can you imagine living in a time when the following inventions were created?
- 1. Electricity (how would we live without it now?)
- 2. Telephone (no text messaging yet)
- 3. Typewriter (before this everything was written by hand)
Electricity: Thomas Edison

- **Thomas Alva Edison** perfected the incandescent light bulb in 1880
- Later he invented an entire system for producing and distributing electricity
- Electricity would later power virtually everything

“One percent inspiration and 99 percent perspiration.”
The Typewriter:

- **Christopher Sholes** invented the typewriter in 1867
- His invention forever affected office work and paperwork
- It also opened many new jobs for women

This is the time period when secretary jobs were primarily held by women....has this changed much?
The Telephone:

- **Alexander Graham Bell** and Thomas Watson unveiled their invention in 1876
- We are still using their invention today
In what ways do you think these new inventions changed the lifestyles of people living during this time period:

1. People became more efficient
2. People were able to communicate better
3. People were able to work more hours
4. All of the above could be true
Section 2: Objectives

By the end of this lesson, I will be able to:

1. Identify the role of the railroads in unifying the country.

2. List positive and negative effects of railroads on the nation’s economy.

3. Summarize reasons for, and outcomes of, the demand for railroad reform.
Section 2: The Age of the Railroads:

- **Main Idea:** The growth and consolidation of railroads benefited the nation but also led to corruption and required government regulation.

- **Why it Matters Now:** Railroads made possible the expansion of industry across the United States.

- **Key Terms:**
  - Transcontinental Railroad
  - Munn vs. Illinois
  - Interstate Commerce Act
The Age of Railroads

- As railroad companies continued to grow, their influence over others became out of control.
- New reforms will be needed to keep the railroad companies in check.
A National Network:

• The **transcontinental Railroad** - cross country route, connecting many cities.
• Out-of-work Civil War vets and immigrants from China and Ireland provided most of the difficult labor
• Many were injured and even killed laying track
Which group provided most of the labor on the railroads?

1. Exodusters
2. White settlers
3. Immigrants
4. The railroad owners
Railroad and Time:

- Before 1883, each city still operated on its own time
- **Professor C.F. Dowd** proposed dividing the earth into 24 time zones
- The U.S. would be divided into 4 zones: the eastern, Central, Mountain, and Pacific

Can you imagine trying to run a business when everyone is on a different time schedule?
THE WORLD IS DIVIDED INTO 24 TIME ZONES
The United States is divided into 4 time zones:

- Alaskan Time Zone
- Hawaiian Time Zone
- Pacific Time Zone
- Mountain Time Zone
- Central Time Zone
- Eastern Time Zone
Why was it necessary to have standard time zones?

1. Trains were never on time

2. People were confused about when to board

3. Business suffered because of trains being late and early

4. All of the above
Railroads Spur Other Industries:

- Railroads led to:
  - 1. Rapid growth of industry – coal, steel, lumber
  - 2. Growth of cities (Chicago, Denver, etc.)
  - 3. Increase of settlement in the West
Railroads, 1870 and 1890
The Grange and the Railroads:

- Farmers (with the help from the Grange) continued to push for fairness in the railroad industry – and they got political!
- They got the Supreme Court to pass.....
- **Munn vs. Illinois**: States were given regulation control of railroads by the Courts
Interstate Commerce Act:

• In 1887, the Federal government re-established their control over railroad activities
• Congress passed the Interstate Commerce Act – federal government regulation of railroads (this didn’t work right away)
Section 3: Objectives

By the end of the lesson, I will be able to:

1. Identify management and business strategies that contributed to the success of business tycoons such as Andrew Carnegie.
2. Explain Social Darwinism and its effects on society.
3. Summarize the emergence and growth of unions.
4. Explain the violent reactions of industry and government to union strikes.
Section 3: Big Business and Labor

- **Main Idea:** The expansion of industry resulted in the growth of big business and prompted laborers to form unions to better their lives.

- **Terms:**
  - Vertical and horizontal integration
  - Social Darwinism
  - Sherman Antitrust Act
  - American Federation of Labor (AFL)
  - Industrial Workers of the World (IWW)

- **Why it Matters Now:**
  Many of the strategies used today in industry and in the labor movement, such as striking, have their origins in the late 19th century.

- **Names:**
  - Andrew Carnegie
  - John D. Rockefeller
  - Samuel Gompers
  - Eugene V. Debs
  - Mary Harris Jones
Section 3: Big Business and Labor

- **Andrew Carnegie** was one of the first industrial tycoon.
- He entered the steel industry in 1873 after making BIG $ with the railroad industry.
- **Carnegie** attempted to control as much of the steel industry as possible.

Carnegie Mellon University
Carnegie initiated many new business practices such as:

1. Searching for ways to make better products more cheaply
2. Accounting systems to track expenses
3. Attracting quality people by offering them stock & benefits
Carnegie’s Smart Plan:

- **Vertical integration** - buying out his suppliers coal fields, iron mines, ore freighters, and rail lines
- **Horizontal Integration** – buying out companies that produce similar products
This type of integration describes a company buying out similar companies:

1. Vertical
2. Horizontal
These kinds of business practices could result in a monopoly - complete control over an industry.

Example:

In 1870, Rockefeller Standard Oil Company owned 2% of the country’s crude oil.

By 1880 – it controlled 90% of U.S. crude oil.

Is this ok?
Robber Barons:

- As more and more monopolies formed and abused their power, critics began using the term “Robber Barons”.
- Even though they made lots of $, they still gave back (schools, hospitals, etc.).

What’s going on here?
Sherman Anti-Trust Act:

- The government had to respond – the “robber barons” were getting way too powerful.
- **Sherman Anti-Trust Act** made it illegal to form a monopoly (Trust)
- This was tough – big companies would just split up into smaller companies
Workers were working 6-7 days a week for more than 10 hours a day

In 1882, an average of 675 workers were killed PER WEEK on the job

Workers realized they needed to organize to get change to happen

Workers created Unions to negotiate wages, hours, conditions, striking
Striking and Violence:

- Some strikes, turned deadly – labor leaders and police clashed (many times right in front of the factories)
- Labor leaders helped to organize unions

**Outcomes –**
- 1. Companies learned to treat their employees better
- 2. Unions became more powerful
Eugene V. Debs

- American union leader
- One of the founding members of the Industrial Workers of the World
- Candidate of the Socialist Party of America for President of the United States (several times)
Samuel Gompers

- Samuel Gompers was the first and longest-serving president of the American Federation of Labor (AFL).
- The American labor movement owes its structure and characteristic strategies to him.
Mary Harris Jones

- "Mother" Jones was a schoolteacher and dressmaker who became a prominent labor and community organizer.
- She helped coordinate major strikes and cofounded the Industrial Workers of the World
Why were workers attracted to unions?

1. They weren’t
2. They paid them more money
3. They protected them from unfair business practices and working conditions
4. They controlled big businesses