

Unit 9 Closed Captions

9.1 A New Revolution

Section 1

00:00:00 TEACHER: Now you've seen some of the changes going on in America at this time, and your lesson question relates to these changes. Let's read it get together. How did the shift from an agrarian to an industrial economy affect American society? Well, you've already seen that the shift involved using new machines and new ways of producing.

00:00:21 And in order to answer your lesson question, you first need to start by thinking about how the US shifted to an industrial economy. And then we can learn about the effects of industrialization on society. But first, you'll need to learn about some of the factors leading to industrialization, including the development of new technologies

00:00:41 and business models.

Section 2

00:00:00 TEACHER: Let's understand the time period that we're going to be focusing on and where the two Industrial Revolutions fall by examining this timeline. Now, between 1851 and 1865 the country's focus was largely on the Civil War, and you reviewed the development of the first Industrial Revolution that began before the Civil War between the years 1800 and 1860. At that time, the process of mass production began to

00:00:27 change the nature of work. Now we're going to explore the second Industrial Revolution that came after the Civil War from 1865 to about 1910. The second Industrial Revolution caused even more change in the nature of work, business, and society in general. So let's look at the factors that caused the second Industrial Revolution.

00:00:50 Why did the second Industrial Revolution start after the Civil War? Why did the nation begin to shift from an agrarian society to an industrialized one? Well, many factors helped to cause this shift, and the first one was that new technologies were being developed. People often called the second Industrial Revolution the

00:01:10 Technological Revolution because of all the different types of technologies that were being invented and being used. The second factor is the creation of new business models and new ways of doing

business. Corporations were being formed, and the finance and banking industries really began to grow during this time.

00:01:29 The third factor that we're going to investigate is the expansion of the railroads. Railroad networks spread rapidly across the United States after the Civil War, especially in the Western portion of the country. And we're going to look at that in our next section. But first, let's take a look at the development of technology.

00:01:48 The second Industrial Revolution was helped along by a range of new technologies that were being introduced after the Civil War, and here are some examples of some key technologies and developments. The Bessemer process was a method of creating steel that was developed in the 1850s. It made it so that steel could be mass produced cheaply. Steel is very light, and it's very strong, and it played a

00:02:13 key role in the development of the railroads and the construction of the nation's industrial cities. New machinery drove industrialization. With new machinery, people found new ways to make more of all types of goods. Electricity was developed. It made a large supply of power available, and it helped operate expanding factories and supported growing cities.

00:02:38 Communication also changed. Just as electricity changed the way that people did their jobs and lived their lives, so did the telegraph and later the telephone change the way that people communicated at work and at home. Now, do you ever wonder how new technologies of the second Industrial Revolution changed life for people living in the late 1800s and the early 1900s?

00:03:02 Well, think about what the digital revolution of the 21st century has done to change your life. Today, people communicate on small, pocket sized telephones, and they can use those telephones to access the internet. And they have so much information there in the palm of their hand. They can also send a message in a matter of seconds.

00:03:23 The digital revolution's technology has changed nearly every industry, and most of the people in the United States and throughout the entire world.

Section 4

00:00:00 TEACHER: Now you know how new technologies led to industrialization and economic growth. Another factor that helped cause change was the creation of new ways of doing business. During the industrial era, a new business model being formed, the corporation.

Corporations produced many of the goods and services that people used.

00:00:22 And corporations can also get a new owner easily by selling stock or shares of the company. And this means that people themselves can own a piece of the company. Owners of a corporation are not personally responsible if a company goes bankrupt. So if a company does go bankrupt, which means that it loses all of its money, or if it gets sued, the owners

00:00:44 themselves do not go bankrupt or need to get sued. Now you can see that in the year 1860, there were about 140,000 companies created, which produced about \$1.8 billion worth of products. By 1900 though, with only a slight increase in the number of companies, the value of products had increased over \$11 billion. And corporations are the most common way that businesses are

00:01:12 set up today. So let's take a look at these numbers really quick. In 1860, we had 140,000 companies and we produced \$1.8 billion worth of product. Now in only 40 years, not that long, we made \$11.4 billion, a lot more than \$1.8, with only a slight increase from 140,000 to 207,000 companies. All right, let's keep going here.

00:01:44 Let's move on. Now as corporations grew, so did the banking and finance industry. Building the nation's modern industrial economy required money, lots and lots of money. As a result, the banking and the finance industries really began to grow in their importance during this time. The growth of corporations took a lot of work and they

00:02:10 led to some very big changes. Banks and financiers helped corporations to raise huge amounts of money by selling stocks to investors. And this allowed them to expand by building more and more factories, investing in new technologies, and even buying out their competitors. And secondly, the growth of this industry resulted in a growth of the middle class.

00:02:37 As more office and managerial positions were created in places like banking, finance, and in business sectors, some workers were able to make more money, creating a new growing class in America. And this model resulted in great wealth building for many Americans. As a result of changes in business, many bankers and financiers became very, very powerful figures, such as the

00:03:04 man that's being shown here. His is John Pierpont Morgan, known as JP Morgan. By linking railroads to one another, financier Morgan controlled half of the country's railroad mileage by the year 1900. In this role as a powerful corporate financier and banker, he built a large

fortune during the late 1800s. His large bank controlled so much wealth that by early

00:03:30 1900s a Supreme Court Justice said that it was worth as much as all of the property to the west of the Mississippi River. Now Morgan arranged huge corporate mergers. And for example, he helped several electric companies come together and form General Electric, and various steel mills to form the giant US Steel. He even used his wealth to strengthen the entire banking system and spur the US economy during a hard economic time.

00:04:03 For example, in 1893, he personally invested \$60 million to help keep the stock market from crashing.

Section 6

00:00:00 TEACHER: Let's take a look back at our lesson question-- how did the shift from an agrarian to an industrial economy affect American society? So we've already talked about how some of this shift happened. In the previous section, you learned about technology and new business practices, and how they helped the nation shift from an agrarian to an industrial economy.

00:00:23 But now we're going to learn about the effects of the railroads on industrial growth. And this is important enough that we need to discuss it in more and more detail.

Section 7

00:00:00 TEACHER: Let's start by telling you how the railroads expanded. The railroad system literally linked the entire nation together. And this was incredibly important. The Transcontinental Railroad was completed in 1869, and it joined the West Coast and the East Coast of the United States, and it marked the beginning of a railroad system

00:00:22 that soon crisscrossed the entire United States. The Transcontinental Railroad meant that people could travel from New York City all the way to San Francisco California in just 8 days. And that was weeks shorter than it had taken them before. Goods could also be shipped more quickly and less expensively. The railroad helped businesses and consumers

00:00:47 both to save money. And as a result, the markets for goods and services began to grow. People in San Francisco could now afford to purchase goods that were made in New York City. And likewise, people in Chicago could eat beef and other foods that were grown in the west. Now let's take a look at this chart to fully understand how

- 00:01:09 much the railroads increased. I know it looks like a lot of information. The Transcontinental Railroad represented only a small part of the mileage that was added to the nation's railroad network after the Civil War. The growth of railways meant that raw materials and manufactured goods could move more cheaply and more quickly all over the United States.
- 00:01:32 And this resulted in major economic growth. Now I want you to notice here that most of the Western states and the territories had the largest number of railroad mileage. The western states and territories, here. And you can see how they are jumping in much larger quantities than the rest of the territories. And notice that you can keep a running total of everybody
- 00:01:59 here at the bottom of your screen. All right, let's take a look at some other expansions of the railroads. The railroads grew a lot. And why does this matter? Why were railroads essential to the growth of economic and industrial endeavours? Railroads helped improve speed and efficiency for everyone.
- 00:02:22 For example, railroads made it faster and cheaper to ship raw materials and resources, such as coal or timber, to factories. And this meant that the cost of making the goods went down. Factories then turned these raw materials into their finished products. And railroads could ship the goods quickly to markets that were throughout the United States.
- 00:02:46 Thanks to the railroads, manufacturers could sell more products to more people in more places. Besides its impact on manufacturers and travelers, the railroads did have other important effects. The Transcontinental Railroad and later rail lines that ran across the American plains encouraged more and more settlers to seek out new territories and move and settle into the West.
- 00:03:14 These newcomers simply pushed American Indians off their lands using whatever force was necessary. The railroad also opened the West to an increase in cattle ranching and an increase in mining. This had important economic effects, but it also had very important environmental effects as well. There were, however, some negative effects for the land that was on the line of the railroad.
- 00:03:43 Finally, railroads changed the environment and the makeup of the West. The environment was suffering because of mining. And people also cut down forests for lumber the railroad and bridge construction and to clear fields for farming. Permanent railroad tracks cut through what had been established forests.

00:04:03 And as a result, the environment in the West was permanently changed. Many Plains Indians relied on bison herds for their survival. But by the end of the 1800s, due to overhunting, only about 1,000 bison remained in the entire United States. And this, here the picture before you, is a picture of a bison.

00:04:27 They're also called a buffalo.

Section 9

00:00:00 TEACHER: Let's take another look at our lesson question-- how did the shift from an agrarian to an industrial economy affect American society? Well, you already know the three factors that led to the growth of industrialization after the Civil War. But what changes did growing industrialism bring to the country in general? Well, now we're going to explore the impact that this

00:00:22 shift had on society. We're going to look at the economic growth caused by the railroad, the increase in immigration, and the growth of cities. But first, let's get started by talking about economic growth.

Section 10

00:00:00 TEACHER: One of the most important effects of industrialization was economic growth. During the Gilded Age, the economy grew faster than any other time in US history. From 1880 to 1900, the production of iron and steel increased more than 800 percent. They were metals that were essential to the creation of factories and essential to the creation of

00:00:25 new types of machinery. The value of manufactured goods increased rapidly. The United States passed the United Kingdom to become the world's largest producer of manufactured goods. And this allowed the United States to sell more goods throughout the country and all over the world. Another important effect of industrialization was the growth of the American population.

00:00:50 One cause of this was increased immigration. Hundreds of thousands of immigrants came to the United States. And by 1900, there were nearly 80 million people living in the United States.

Section 12

00:00:00 TEACHER: Immigration played a huge role in the development of the United States that we know today. More than 25 million people immigrated to the United States between 1870 and 1916. And many of

these people came to take jobs in our booming factories. They came to work in our mines. Or they came to work on our railroads.

00:00:21 And many settled in our larger growing cities. And this leads us to our last big effect, something called urbanization. Another important change that industrialization caused was urbanization. And urbanization means that cities are growing. They're growing due to more and more people moving to urban areas looking for important opportunities, such

00:00:45 as employment. Many people moved from the country into our big cities during the Gilded Age. And usually they were looking for work. As a result, these cities grew dramatically in size. And by 1900, three American cities had more than 1 million people living there. They were New York, Chicago, and Philadelphia.

00:01:08 And in 1870, just a few years before, there were no American cities that even had 1 million people. Many corporations, businesses, and factories were in urban centers. And they were helping to fuel that population growth.

9.2 New American Industries

Section 1

00:00:00 Now let's take a look at your lesson question. How did the development of the railroads lead to the growth of other industries in the United States? Well, in your warm-up, you learned about how the railroads were expanding across America in the early 1800s. But now it's time to think about how to answer your lesson question.

00:00:19 First, you need to know how the railroads developed themselves. And then you need to know how they helped other industries to develop. And you'll start by looking at how the railroads changed themselves. Take a closer look at your lesson question. If you wanted to answer this question well, where would you

00:00:35 need to start? Well, the first question you'd need to ask is, how did the railroads develop? Before we can understand how they helped other industries, we need to focus on how the railroads changed and improved themselves. Then you'll be ready to look at how they helped other industries to expand and to grow.

00:00:54 But first, we're going to focus on how the railroads improved and developed themselves. I want you to imagine that you were living in Seattle, Washington. What if you wanted to call your family in

Memphis, Tennessee? How would you know if it was too late to call your family? You would rely on time zones, right?

00:01:12 Well, Memphis, Tennessee is two hours ahead of Seattle, Washington, which means it's two hours later there. But what if Memphis got to decide its own time? How would you know what time it was there? Well, in the 1800s, this was a real problem. Because time zones hadn't been created yet. In the early 1800s, no system existed to compare times in different parts of the region.

00:01:38 The US hadn't developed a way of keeping track of this in an organized way. And as the country expanded across the continent, this became a real problem. All time was measured locally. So if you weren't at home, how would you know what time it was back at home? Well, another problem was that companies could also decide

00:01:59 what time it was for themselves. One company might say that it was 5 o'clock while another company would insist that it was actually 6 o'clock. The railroad companies needed standardization. Standardization is the removal of differences. Things needed to be uniform in order for the railroads to cooperate with one another. So to solve this problem, the nation's railroads held the

00:02:24 General Time Convention in 1883.

Section 2

00:00:00 In 1883, the general time convention set four time zones for the continental United States. From west to east, they were named Pacific, Mountain, Central, and Eastern. You'll notice that several states are split between two time zones. Now, Alaska time is one hour behind Pacific time. And it's four hours behind Eastern time.

00:00:23 And Hawaii is an hour behind Alaska time, two hours behind Pacific time, and five hours behind Eastern time. The time zones became an official system in 1918, when Congress passed the Standard Time Act. And time zones were created to help coordinate the train schedules. And as they grow, railroads came into another problem besides the time problem.

00:00:47 Companies were all building their rails differently. Let's take a look at this rail photo. A train would have to be built to run especially on this track. But what if it came to a section of track that was wider or if it was narrower. It obviously wouldn't be able to use that section of track. Now companies knew that they needed to

00:01:06 standardize things again. Creating standardize rails meant that building rails became the same distance apart. This meant that companies could use each other's tracks. And it made it easier for trains to be able to travel from coast to coast.

Section 4

00:00:00 Standardization wasn't the only way that the railroads improved. Inventors also found ways to improve the trains themselves. And this made them more safe. And it made them more attractive to use. In the early days of the railroad, the trains were stopped using hand operated breaks. And crew members would have to move from car to car to use

00:00:18 the brakes. And if they made a mistake, the train could easily crash or even derail. So in 1869, an inventor named George Westinghouse created a set of brakes that operated automatically. These were called air brakes. His system reduced the chances for human error. And it made it much safer to stop a train.

00:00:38 In fact, later laws required that all trains use his invention. Now, you probably know that a train is a series of cars connected to one another. Well, old systems of connecting the cars together were very unsafe. It was way too easy for workers to be crushed or injured as they pushed the metal carts together while

00:00:58 they were still moving. In 1873, another inventor named Eli Janney patented a new way of connecting the rail cars. He called this the knuckle coupler. Now this let the cars automatically connect as they were being pushed together. It was much safer. And it was much easier to connect the cars, making it

00:01:16 easier to get the trains moving. Railroads also worked to become more versatile. And this meant that they could be used for new purposes. Before 1865, if you traveled for a long distance or if you had to go overnight on a train, then you had to sleep on your seat. And usually at the time, this was only like a long wooden bench.

00:01:36 So in 1865, George Pullman started a company to build a new type of rail car, one that people could sleep in more comfortably. The car had fold down beds. And this made it much more comfortable to travel for long distances, especially overnight. Along with passengers, trains carried food. But food can spoil quickly.

00:01:56 So in 1877, a businessman named Gustavus Swift began to use refrigerator cars that were built to keep its contents cool. And this let Americans send meats and other foods over long distances.

Section 6

00:00:00

Here's your lesson question again. How did the development of the railroads lead to the growth of other industries in the United States? You've already started to answer the first part of this question. Because we looked at how railroads became safer, more reliable, and more versatile. So now it's time to take a look at how the railroads

00:00:17

helped other industries to develop. We're first going to start out by taking a look at how railroads helped the iron and steel industry.

Section 7

00:00:01

In the 1800s, the United States was rich in natural resources. But as you can see, those resources were spread out across the country. Deposits of mineral resources were often far from major manufacturing centers. But railroad expansion made a difference. It helped Americans access these natural resources.

00:00:21

And railways carried these resources to growing cities.

Section 8

00:00:00

Not only did the railroads start allowing us to move raw materials from one spot to another spot. It also drove up the demand for those raw materials. The railroads needed wood for the railroad ties. They needed iron and steel to make more rails and to make more train cars. And they also needed coal to start fueling the locomotives. The more railroads that there were meant that more tracks and

00:00:25

more locomotives needed to be built. And this meant that there needed to be more production of these raw materials in order to build more railroads. So are you starting to see-- like-- the cycle of growth going on?

Section 9

00:00:00

PROFESSOR: So as the railroads carried resources from place to place, they helped industries start to take off, for the reasons that you just saw. So here are three major examples. Petroleum became a major resource in the United States in the 1800s. Railways carried petroleum from oil wells to cities, where it was refined and used to make many other products,

00:00:20

including kerosene. In cities, oil refineries sprouted up to help take raw petroleum, and turn it into fuels and plastics. The coal industry also

00:00:39 benefited greatly from the railroads. Coal provided heat. It powered factories. And especially it fueled locomotives, and it generated electricity. Railroads helped to open up coal fields that weren't accessible before. The more accessible coal became, the more Americans used it. Finally the iron and steel industries benefited as well. In Pennsylvania in the 1870s, railways carried iron ore to mills, where it could be refined, or

00:00:58 used to make steel. American cities like Pittsburgh, Chicago, and Birmingham became major centers of iron and steel production. Every industry followed the same pattern. Railroads helped transport raw materials, so industries could refine these materials, and sell them to eager buyers.

Section 11

00:00:00 These new resources began to pour into American cities. Manufacturing took off quickly. Cities became manufacturing centers that processed raw materials. And not surprisingly, cities began to specialize in areas where these resources were common. Let's take a look at our map. Iron ore from around Lake Superior and in the Southeast

00:00:22 led to the rise of the steel industry, especially in places like Pittsburgh, Chicago, and Birmingham, Alabama. Abundant coal deposits also helped to fuel the steel industry. The more that these manufacturing cities grew, the bigger American industry became.

Section 12

00:00:00 Before we move on, you should know why the growth of these industries made such a big difference. So let's focus on iron and steel. Inventors like the English engineer, Henry Bessemer, developed processes to remove impurities from iron and steel. This helped Americans make even better use of the resources that they were able to harvest.

00:00:21 Steel ingots, like the ones that you see here, began to be used in construction. Steel became one of the most important building materials in the world. As it became more affordable and more common, it was used for rails, trains, buildings, and bridges. Americans built towering skyscrapers, massive bridges, and huge buildings.

00:00:45 Steel began to shape our cities. And it still does today. As the steel industry grew, it became dominant worldwide. So let's check the

numbers. This table shows the amount of steel produced in the world in 1900. Before the time period, you see in this chart the United Kingdom led the world.

00:01:07 But thanks in part to the railroads, the United States began to catch up. If you do the math, you can see that the United States was creating almost twice as much steel as the other countries could. In fact, it was over 1/3 of the steel that was being produced in the world-- 36%.

00:01:27 This is a very dominant industry.

Section 14

00:00:00 Let's take another look at our lesson question. How did the development of the railroads lead to the growth of other industries in the US? Now we've started answering a lot of that question. We just got done talking about how railroads made it easier to transport resources, especially in the industries of iron and steel. But those weren't the only two industries that

00:00:19 the railroad helped. We're going to continue on now by discussing how the railroads helped grains and meats.

Section 15

00:00:00 Railroads had a huge impact on land in the West. In fact, in order for the railroad to be built, the US government gave land to railroad companies to help support their construction. The railroad companies used this land in three basic ways-- using land to build track which stretched across America, selling land to farmers and ranchers who were

00:00:21 moving West to settle, and building towns to help settlement happen along the rail lines. The shaded areas on the map show just how much land was granted to railroads as they stretched across America. As the railroads moved west and east from California, Americans had new opportunities. By the mid 1800s, Americans were beginning to settle the Great Plains out West.

00:00:46 Most American cities were still in the east, with a few exceptions. Railroads made a big difference, because they created a connection between these regions. Railroads carried farmers and settlers west where they could buy land, get a homestead, and have support from railroad towns. And then railroads would carry the crops east back to the

- 00:01:09 growing cities that needed food. As you can see, an agricultural industry was growing. As railroads brought crops and foods to cities, they helped new food industries grow. Let's look at an example, flower mills. As trains traveled back and forth from the plains to cities, they brought grain to flower mills and carried
- 00:01:33 flower to markets. The pictures you see here show an example of how this helped one city to grow. These photos show Minneapolis, Minnesota, a city that was founded in 1867. The Pillsbury flower mills in Minneapolis, shown here, were the first in the United States to use steel rollers for processing grain.
- 00:01:57 To transport the finished product, the company's owners helped develop the region's railroads. By the 1880s, there were 18 flower mills. And Minneapolis was the flower milling capital of the world. By bringing raw materials to cities, railroads helped cities like Minneapolis to grow. Another major industry that the railroads helped was the
- 00:02:20 meat packing industry. As railroad stretched across the plains, they became easy ways for ranchers to transport cattle. Before the railroads, ranchers would have to take cattles on long cattle drives. But as railroads expanded, this became less necessary. Ranchers on the plains would send cattle to Midwestern cities where meat would be processed.
- 00:02:44 And then the meat would be sent on to other major cities to be sold in stores. As railroads brought more cattle to processing plants and stockyards in growing cities, the meat packing industry exploded. And when this happened, these cities exploded in population too. Cities like Chicago, Kansas City, Cincinnati, and Omaha
- 00:03:09 all owe much of their early growth to this industry. Gustavus Swift's refrigerated train cars, something you saw earlier in this lesson, revolutionized the meat industry. Fresh meat could now be processed in the Midwest and safely shipped across the country.

9.3 Trusts and Big Business

Section 1

- 00:00:00 TEACHER: Let's start out by taking a look at our lesson question. During the Gilded Age, how did companies create monopolies? Well, during this time period, some companies did create monopolies and they controlled entire markets, such as steel, oil, or railroads. In this

lesson we're going to focus on 2 men who created huge monopolies and became incredibly wealthy.

00:00:23 Andrew Carnegie took his steel-making business and turned it into Carnegie Steel and he grew it into a monopoly of the steel industry. John D. Rockefeller, he bought a couple of oil refineries and then he expanded his business. And many historians today still view John D. Rockefeller as the richest man in American history. His fortune in today's economy would be worth somewhere

00:00:49 around \$500 billion. But first, we're going to focus on Carnegie and put the pieces together of how he formed his empire, Carnegie Steel.

Section 2

00:00:00 TEACHER: In 1848, Andrew Carnegie immigrated to the United States from Scotland when he was just 13 years old. He quickly found his first job working in a factory where he became a bobbin boy. A bobbin boy is the person who changes the large spools of thread on top of the large sewing machines. In 1853, Carnegie started working for the Pennsylvania Railroad Company.

00:00:21 He soon became friends with the owner. And that owner took him under his wing and started to teach him about business. He taught him about manufacturing, about rails and railroads, and about making bridges. And he also taught Carnegie how to manage a very large company. In 1856, while he was still working at the railroad,

00:00:39 Carnegie borrowed \$200 to begin making his first investment. By the 1860s, Carnegie was investing tens of thousands of dollars a year in several businesses. And he was starting to grow his very large fortune. After the Civil War, Carnegie retired from the Pennsylvania Railroad Company to begin a bridge making company and an iron making business.

00:01:03 And the Pennsylvania Railroad, his former employer, actually became one of his best customers. Now Carnegie's drive and willingness to invest in new technology allowed him to build his monopoly. And in this case, his monopoly was in steel. Carnegie had a huge influence on the supply and in the trade of steel. Now by 1856, Carnegie was very familiar with

00:01:27 the Bessemer process. And the Bessemer process is the way by which we make and produce steel. Carnegie knew that American railroads would eventually switch to using steel rails instead of iron if it was cheap enough to replace the iron. So in 1875, Carnegie opened his first steel plant and it was very successful right from the very beginning.

00:01:50 A few years later, Carnegie invested in the Frick Coke Company. Now coke is a byproduct that's used to make fuel. It's a coal byproduct, which is this picture that you see in front of you. Carnegie wanted to make sure that he had a reliable fuel supply, so he invested a lot of money in coke. Now in 1883, Carnegie bought out one of his rivals,

00:02:12 Homestead Works. And that purchase got him ships, a railroad line, and iron and coke fields. So now his company could produce and gather their own raw materials and they had the means of transportation to take them wherever they needed them to go. Allegheny Steel had also been another steel-making company that have been in competition with Carnegie.

00:02:34 So when Carnegie eventually bought Allegheny Steel, he went into their factories and he saw that they had a better, more efficient way of producing steel. So he actually took their ideas and he started to incorporate them into his own company. By 1892, Carnegie owned many steel plants and suppliers. He merged them into one giant company called Carnegie Steel and that company monopolized, or controlled,

00:03:01 the US steel industry. Now in 1892, Carnegie combined his dozens of companies into one very large company that he called Carnegie Steel. And as we know, his companies included iron mines, coke fields, steel mills, and railroads. And this is an example of vertical integration. Let's take a look at your graph really quick. You can see how it steadily begins to increase.

00:03:28 We have the raw materials down here at the bottom, his manufacturing sites and the steel mills, and his way of transporting his product. Now when you use vertical integration, this means that your company can gather materials, make the steel, and ship it without having to use another company's resources. And that means that he could produce steel more cheaply than the other companies could.

Section 4

00:00:00 TEACHER: So, just how important was Andrew Carnegie to the steel industry? Well, by 1900, Carnegie steel produced 25% of the nation's steel output, and that made Carnegie the world's largest steel producer. His company was recording unheard of profits for the day, how did he do this? Well, it was because he had control of the raw materials

00:00:22 for the production of steel. So Carnegie was able to drive down the steel prices, and this forced his competitors out of business entirely. Great Carnegie also bought very creative companies that had better

ways of producing steel. Remember when we talked about Allegheny steel. And this also helped to drive down steel prices because he used these companies' good ideas to

00:00:46 amass his steel empire. Now, in 1901, Carnegie sold his part of Carnegie steel to JP Morgan for \$480 million dollars, and that transaction alone, right there, made him one of the richest men in the entire world. His personal fortune at the time would've been worth about \$250 billion dollars in today's economy. And of that money, Andrew Carnegie actually gave away

00:01:15 about \$300 million to philanthropic endeavors like universities and museums such as Carnegie Mellon.

Section 6

00:00:00 TEACHER: In this last segment we learned all about Andrew Carnegie and how he was able to form a monopoly in the steel industry. This has helped us to start answering our lesson question. During the Gilded Age, how did companies build monopolies and trusts? Well, Andrew Carnegie did this by controlling all of the means of production, and the means of distribution, as we

00:00:21 learned about. Coming up, we're going to learn about John D. Rockefeller, another captain of industry. And we're going to learn about how he formed his monopoly using the Standard Oil Company.

Section 7

00:00:00 TEACHER: John D. Rockefeller grew up in small towns across the State of New York. Even as a small child, he showed early promise as a businessman, and he soon became an entrepreneur, and that's a person who sets up his or her own business. He was selling candy, potatoes, or turkeys to his friends and neighbors. Rockefeller got his first job at age 16 as a bookkeeper.

00:00:24 And there he learned how to calculate shipping costs and transportation costs. And this was a skill that would serve him well later when he owned his own business. At age 19, Rockefeller was ready to move out on his own. And he and a friend started their own business selling hay, selling meat, and other goods to people. At age 24, in the year 1863, Rockefeller and his business

00:00:51 partner opened an oil refinery in The Flats. And The Flats was an industrial part the Cleveland, Ohio. It was Rockefeller's first step into an industry that he was later and soon going to dominate. Just as

Carnegie built his monopoly, Rockefeller also built a monopoly. But he did it in a slightly different manner.

00:01:13 John D. Rockefeller assembled a trust. And remember, a trust is a large company or business combination that has control of or tries to get control of a market. The technology for refining oil at this time was well-known in the late 1860s. So Rockefeller and his partner built their first oil refinery, and it was called the Excelsior Works in

00:01:38 Cleveland, Ohio. In 1856, Rockefeller built a second refinery called Standard Works. Rockefeller had found a way to make a lot of money by selling as many different parts of the petroleum as he could. Where other refiners were throwing pieces as waste, Rockefeller was finding ways to sell off those other pieces and make a lot more money.

00:02:03 As a result, Standard Works became the largest refinery in the world. Now Rockefeller was very careful to cut costs of his company. He made deals with the railroads to cut prices for shipping. And he also borrowed money and then he reinvested his profits.

00:02:20 So by 1870, he was ready to take his next step. He and his partners created Standard Oil, which quickly became the largest shipper of oil and of kerosene in the entire world. Now after the formation of Standard Oil in 1870, Rockefeller moved towards a monopoly. In late 1871 and early 1872, Rockefeller began buying up all of his competitors in the Cleveland area.

00:02:51 By March of 1872, Standard Oil had bought or merged with most of the refineries in Cleveland. Now later, this takeover of the Cleveland refineries would be known as the Cleveland Massacre. Rockefeller and his Standard Oil Company had become virtually unstoppable. After the Cleveland Massacre, Standard Oil continued to grow.

00:03:13 By 1880, it controlled 90% to 95% of the refining in the United States. So it had squashed or merged with most of its competitors. Now many states, like Ohio, the home of Standard Oil, had passed laws that made it illegal for companies to open in one state and operate there and also operate in other states. So to get around this, Standard Oil was actually more

00:03:42 than 40 different companies, and many of them operated in a single state. Now this may be running the business inefficient. So in 1882, Standard Oil combined all of its different companies and it created a corporation of corporations, the Standard Oil Trust. The trust was run by nine trustees, Rockefeller and his other business partners.

00:04:09 The Standard Oil Trust was following the law. It was operating in a single state. But of course, it was also operating a huge monopoly

because it was made up of many companies, and those companies were doing business in states from coast to coast. Now remember, in 1882, John D. Rockefeller and his partners combined all of their businesses into the Standard Oil Trust, which was a corporation of corporations.

00:04:40 Now Rockefeller's trust also included oil wells, oil pipelines, rail lines, and tanks cars, and it also included home delivery networks. Now in this way, the Standard Oil Trust was a lot like Carnegie's steel company. The trust could gather the materials, refine the oil, and ship it without having to rely on another company's resources.

00:05:06 However, what made Standard Oil different than Carnegie Steel was that it owned or controlled 90% of all the oil refineries in the United States. And it even controlled some of the refineries around the world at the time. Now while Carnegie Steel owned some of the raw materials that made steel, it never owned 90% of all of those raw materials.

Section 10

00:00:00 TEACHER: Let's take another look at our lesson question. During the Gilded Age, how did companies build monopolies and trusts? Well now you know that Carnegie built a monopoly in the steel industry, Carnegie Steel. And you also know that Rockefeller built a monopoly in the oil industry by forming the Standard Oil Trust. He combined businesses to reduce competition.

00:00:23 And now you're going to learn about the government practices that allowed this to happen. At the time this was called a laissez-faire government. And that meant hands off. Or it meant that the government would do very little to intrude upon business practices.

Section 11

00:00:00 TEACHER: It's important to remember that Andrew Carnegie and John D Rockefeller were not the only ones creating monopolies at this time. Monopolies could be found in many different industries, all the way from railroads to sugar refining. Now, many Americans did not like monopolies. And here's why. Let's start by taking a look at this political cartoon

00:00:21 that's off to the side here. We see this giant octopus. And it's stretched out all the way across North America. It's a little bit hard to see. But across the top it actually says "Standard Oil." And you can see that he's on a big oil field here. And he's got one of his tentacles stretched around the Capitol building.

00:00:41 And he's creeping his way to the White House. So as we stated, Americans didn't think that monopolies were a good idea. And here's what they believed. They believed that monopolies reduced competition. And this meant that the smaller companies virtually disappeared. They also believed that less competition generally caused

00:01:04 higher prices for consumers. Now because they controlled their industries, monopolies could control the prices. They could drive the prices way, way down, as long as it took them to buy out their competitors or to drive them out of business. Then once those competitors were gone, they could drive the prices way up again, and force the consumers to pay

00:01:26 higher prices for their product. Now additionally, monopolies could control the wages and the pay for their workers in their industries. For example, Standard Oil might decide to pay all of its workers a very, very low wage. Well, if you're an oil refiner, what do you do? You have no choice but to accept the lower pay, because Standard Oil controls all the other oil refineries.

00:01:51 There's no other place for you to go. So for all these reasons, Americans began to ask the government to break up the monopolies. So why weren't the monopolies already illegal? Well until the 1890s, the government had a policy that was called laissez-faire. And this means that the government had a very hands-off approach when it came to businesses.

00:02:15 The government did not want to interfere in business practices. The government believed that this policy was best for economic growth. Getting involved in competition might make the prices increase, or it might stop a company from becoming successful. Now, few laws were passed about business practices

00:02:36 before the 1890s. For example, there was no minimum wage. And there were no laws or regulations in place that were keeping the workers safe. In fact, the laws that did exist generally helped the businesses or the companies themselves, and they did not help the workers. So as monopolies and trusts grew, and you continue to

00:03:00 study these monopolies in US history, you're going to see that monopolies continued to grow without regulation. Now without regulation, they could continue to avoid their competition. And without competition to stop them, this created more profits for the monopolies. And it set prices for goods. And in the future, Americans would demand more changes to

00:03:27 these laissez-faire practices and policies.

9.4 Technology and Society in the Industrial Age

Section 1

00:00:00 In this lesson you're going to learn about how new inventions and new technologies made a really big difference in Americans' lives. But first, let's take a look at our lesson question. How did technology change Americans' lives during the industrial age? Well you already saw some examples of these inventions in our warm up.

00:00:19 But now in this lesson, you're really ready to learn more. We're going to learn about how Americans found better communication, better transportation, and better advances to help their lifestyles. But first, in the beginning part of this lesson, we're going to learn about how Americans found new ways to communicate with each other-- how to share ideas and information.

Section 2

00:00:00 TEACHER: Have you ever thought about what it would be like if you could only communicate with one another in person? How long would it take you to get a message all the way across the United States? Well, even the 1840s, communication from coast to coast took a long time. In fact, getting a letter from New York City all the way to San Francisco took right around 180

00:00:21 days, or 6 entire months. But things improved as Americans found faster transportation, and in 1869, after the transcontinental railroad was finished, you could send a letter from New York to San Francisco in only about 7 days. But still, imagine what it would take to have to send a letter and wait for two weeks to send it to them and get a reply back.

00:00:44 Well, in the middle of the 1800s, the invention of the telegraph changed communication forever. The telegraph was invented by Samuel Morse, and it was first used in 1844. Many Americans started to use it so that they didn't have to wait for days or even weeks to send a message to one another. It provided almost instant communication for everyone. The telegraph became the first device to allow instant

00:01:11 messages to be sent over wires using signal codes. The telegraph was very useful to the military. Both sides in the Civil War, but especially the Union side, or the North side, used the telegraph to communicate. And in fact, the US military continued to use the telegraph up through

the Vietnam War. Business owners could start to place and accept orders by using the telegraph, and the telegraph gave people nearly instant communication with family and friends both near and far. Beginning in 1871, people could even transfer money using the telegraph. The end result was that communication was changed overnight. Now, in order to communicate using a telegraph, you needed to know Morse code.

Morse code was made up of a series of long and short clicks and beeps, and only experienced operators could understand it, because you had to know exactly what you were listening for. And even so, the code is still used today. Most commonly, the code SOS is frequently used in movies. You're probably the most familiar with that one. A series of three short clicks followed by three long clicks,

followed by three short clicks. Well, you should know that the creativity didn't stop when an inventor made one of these inventions. People were constantly thinking of ways to improve upon the existing inventions, and one inventor who did this to the telegraph was Granville Woods. He was an engineer and an inventor who worked to improve railroads in the United States.

Woods created the multiplex telegraph in 1887, and this was a device that helped telegraphs work on moving trains. Woods' invention helped trains to communicate, and this meant that they could run on a schedule and avoid crashing into one another. But this invention was just a start. What if the entire telegraph system could be replaced?

Section 4

TEACHER: Now let's talk about the next big change, the telephone. If you take a look at this picture over here, you can actually see what one of these old timey telephones looked like. The telephone was a major improvement over the existing telegraph machines. It allowed instant communication through speech

or people's voices. It was invented by Alexander Graham Bell in the year 1876 and it was originally meant to help deaf people communicate with one another. The basic design, although this telephone looks a lot different from phones that we might recognize today, but that basic design is still used in modern day telephones. Let's take a look at a timeline

of sorts for a moment. In 1877, the first telephone line was set up and it allowed people to talk to each other between Boston, Massachusetts and Somerville, Massachusetts. In 1877 also, the first telephone

company was established, the Bell Telephone Company. And then in 1914, the first transcontinental telephone line was set up, and that allowed people to finally be

00:01:11 able to speak with one another all the way from the east coast to the west coast. Now, the telephone has evolved a lot since those first telephones were invented. Compared to the first telephones, today's phones are smaller, they're portable, they're mostly digital, and they're able to serve a lot of other purposes. For instance, on my telephone I'm able to check my email,

00:01:34 text my friends, look at today's paper, and do a whole variety of other tasks. Now, the telephone is still the most widely used communication device in the entire world.

Section 6

00:00:00 TEACHER: Let's take another look at our lesson question. How did technological advancements change Americans' lives during the Industrial Age? Well, so far you've answered this question by learning about some changes that were happening in the field of communications. The inventions changed Americans' lives by allowing them to communicate instantly with one another

00:00:20 from coast to coast. But now in this segment, we're going to learn about how transportation was changing too.

Section 7

00:00:00 TEACHER: Remember what you discovered about communication in the 1800s? How it could take days or weeks to send a message? Well, transportation wasn't that much different. Things were moving slowly. Even in cities. Not just when we're traveling across the country. But moving from place to place within the cities themselves

00:00:19 wasn't an easy task. Imagine what it would be like to live back then. You could travel on foot, you could travel on horse, or you could take a carriage. Your options were very limited because no matter what, if you wanted to travel to place to place, your trip was going to be slow. You could only go to certain places because it would be

00:00:38 difficult to go much farther to other places. And getting around was very challenging. Think about it. If you could only go as far as you could walk, then the chances are that you weren't going to be able to go anywhere very far. This limited people's opportunities, even within the cities.

00:00:56 Well, before new transportation inventions, commuting was a slow process. Now to commute is to travel from one place to another regularly, like going from work to school. But now you already know about the invention and expansion of things like the railroads in the mid-1800s. Well, as the railroads were growing, Americans were moving into the cities.

00:01:19 But the cities were becoming too large and they were bursting at the seams. So city planners had to find new ways to help people commute. Planners borrowed an updated technology from the railroads. Now in the 1830s, cities used horse-drawn trolley cars. And they ran on rails. And beginning into the 1870s, cities began to switch these

00:01:43 trolley cars to electric trolley cars. Having trains run along the city streets, though, quickly became very crowded. So designers began to create elevated trains that would run above traffic lines. Chicago's elevated train, or the El train, began operating in 1890s. And what if you could do the opposite?

00:02:05 What if you started to put the trains underground? Well, underground rail systems are called subways. And Boston's subway system, nickname the T, first opened in the 1890s. And it's still in operation and being used today. These inventions changed the cities by helping its residents commute to jobs, school, and social activities. Now people could live in one neighborhood and commute

00:02:30 easily to another.

Section 9

00:00:00 TEACHER: Railroads were helpful to people and they made life easier to commute. But there was one problem with the railroad. It started at one fixed point, say, a railway station, and it ended at another fixed point, say, another railroad station. Well as early as the 1700s, inventors were trying to come up with a way to provide the people with personal transportation, vehicles that would move

00:00:24 under their own power. Some had steam engines and some burned coal, gas, or fuel. So why did they want to do this? Well it was because this kind of vehicle, an automobile, would have many advantages. Automobiles would allow Americans to have personal transportation.

00:00:41 No more sharing a very crowded streetcar, you were now free to go by yourself. They'd also give people the freedom to go where they wanted, not just where the railroads were running to. Automobiles were also very convenient. People wouldn't have to wait for a certain time that

the train was coming. They could pick up and go whenever they wanted.

00:01:00 Well the first gasoline-powered American automobile was made in 1893 by the Duryea brothers of Springfield, Massachusetts. At first, automobiles were actually very expensive. But one inventor and businessperson worked to change all of that. And his name was Henry Ford. Ford was the owner of Ford Motors and

00:01:22 he was an auto producer. After seeing how expensive automobiles were, he decided to make a cheaper car that everyone could afford. So how did he accomplish this? Well he made cheaper cars by using interchangeable parts. He also used mass production. And he used fast-moving assembly lines to crank out identical looking cars.

00:01:44 When Henry Ford started making cars, assembly lines and mass production already existed. He did not have to create those things. He simply improved upon them. What Henry Ford did to transform the assembly line was to make it move, like on a conveyor belt. The workers didn't have to move, the work came to them on a movable track.

00:02:07 They performed their task and the car went on to the next station. Now that new assembly line made it faster and easier to assemble a car. And that meant that cars became cheaper. The cost of making a car dropped and so the cost for the consumer dropped. And as a result, automobiles quickly became very popular.

00:02:25 With good advertising and cheaper vehicles, Ford sold millions of cars to Americans and the automobile became something for everyone. Think about how transportation inventions might have affected people's lives. Here's some examples to think about. Cars, especially like the one, like the Ford Model T, gave almost everyone the chance to take a drive in the country,

00:02:49 to take a vacation away from home, or simply to take a drive on a Sunday afternoon. Improved trains and automobiles meant that people could travel faster and they could travel more comfortably. Public transportation systems, such as Boston T and the Chicago L, allowed people to live and move around within the cities. And better trains and trucks meant that farmers could move

00:03:12 their products to market more quickly, and that meant that the people living within the cities had access to fresher foods.

Section 11

00:00:00 TEACHER: The thing about innovation is that it never stops. Changes in transportation throughout the 20th century and into the 21st century have brought cars of every shape, size, and color imaginable, high speed railroads and trains, and giant airliners.

Section 12

00:00:00 Here's your lesson question. How did technological advancements change Americans' lives during the Industrial Age? Now you already know that the second industrial revolution brought about huge changes in areas like communication and transportation. But it went even further than that. It helped change people's everyday lives.

00:00:20 In this segment you're going to learn more about the inventions that changed Americans' lives at home.

Section 13

00:00:00 TEACHER: Chances are when you think of famous inventors Thomas Edison is one of the first American inventors to come to mind. Edison was a self-taught inventor. He built a research facility in New Jersey. And Edison was a prolific inventor. And this meant that he and his research team invented hundreds of new products and designs.

00:00:20 In the end, Edison's name was on over 1000 products. And it's safe to say that he helped to develop inventions that affect the lives of all Americans still today. Let's take a closer look at a few of his inventions. Now if you think about it, your life is surrounded by inventions from Edison and his fellow researchers. Even the lights in your room and the machines that you've used to listen to music and watch movies on started with

00:00:47 Edison's ideas. Imagine a world without light bulbs. How would people travel, conduct business, or see a baseball game at night? Well, Edison's incandescent light bulb and the electricity that's used to light it opened up the night for travel, business, entertainment, and ordinary activities. Edison was also fascinated with the telephone.

00:01:11 So he explored ways to record and also to transmit sound. And the result was the photograph, a device that could record and play music. Edison was also interested in recording images. It was an interest that led him to develop a motion-picture camera and a motion-picture player.

Section 15

00:00:00 TEACHER: Edison wasn't the only influential inventor who changed people's day to day lives. Like Edison, Madame C. J. Walker was also a self-taught success. Walker was one of the first African American entrepreneurs. An entrepreneur is someone who starts and runs a business. In her late 20s early 30s, she struggled with hair loss, and

00:00:23 this led her to create a cosmetic line and experiment with hair care treatments. She created a business that sold cosmetics specifically for African American women, and eventually she built a million dollar empire. It sold household products that many Americans used, and it showed how one person with the right idea and effort ended up touching the lives of millions of people.

00:00:48 Innovators like Edison and Walker encouraged other people to step forward with their own ideas, and as a result, many other inventors and companies grew new products that affected everyone's day to day lives. Now, how did people enjoyed their leisure time? They took pictures with small, easy to use cameras. Innovations in plastics and chemistry made this possible. And what if they wanted a quick breakfast or a quick

00:01:16 snack product? Well, they could get some of their favorite foods or baking supplies from handy little packages. And finally, innovations using electricity led to appliances such as vacuums, toasters, and irons, and these tools made housework easier and quicker, and it gave Americans more time for leisure activities. Now let's take a look at how some people learned about

00:01:39 these products. In the late 1890s and early 1900s, people began to demand new products that inventors produced. Businesses were happy to oblige, and they began to reach out to consumers using advertising hoping that new customers would discover their products. Businesses began to put more and more ads in places like catalogs, which could be mailed

00:02:06 straight to the consumer. They put advertisements in magazines, newspapers, and on giant billboards, and the result was that Americans became greater consumers. They were more willing to shop, more willing to spend money on products, and more willing to buy things that they didn't really need.

9.5 A Worker's Life

Section 1

00:00:00 TEACHER: In this lesson, we're working to answer the question, how did industrialization affect the lives of workers and their families? We're going to begin by talking about workers, most of whom were men, at first, and the conditions that they faced in factories. From there, we'll talk about the impact that this work had on families, as children and women

00:00:21 began to work in the factories as well. But let's begin by talking about workers and the conditions of the factories.

Section 2

00:00:00 TEACHER: One of the most important changes of the Industrial Revolution was mass production, and mass production is a system of manufacturing that uses machines to produce large amounts of products quickly. And mass production is going to increase in the Gilded Age. Before mass production, products were usually made slowly by hand, but after mass production,

00:00:24 products could be made much more quickly. And you can see an example of a factory in which goods are being mass produced here. Now let's take a look at an example, shoemaking. In the 1800s, shoes were made by hand. This took a tremendous amount of skill and time. But by the 1850s, things were changing with the invention of the sewing machine, which could quickly

00:00:49 stitch together the different parts of shoes, which is going to decrease the amount of skill and time needed to make the shoes. By the 1880s, another invention called the lasting machine allowed the top of the shoe to be attached more quickly and easily to the bottom of the shoe, and this is going to save a lot of time and energy.

00:01:08 And by the 1900s, shoes were being mass produced, and now they could be made more quickly and less expensively, which means more people are able to afford them. Let's take a look at the person who invented the lasting machine. His name was Jan Matzeliger, and he was an influential inventor in the textile industry. He was an immigrant from Dutch Guiana in South America.

00:01:31 He came to the United States when he was only 21 years old and began working in a shoe factory. There, he found that the work of lasting, attaching the top to the bottom of the shoe, took a really long time, and that inspired him to develop the lasting machine to perform this task more quickly. He was able to patent his invention by 1883,

00:01:54 when he was only 32 years old. This is a perfect example of how integrity and intelligence can combine to lead to life-changing

inventions. Now, there were some big effects of mass production. Eventually, new machines would replace skilled workers. These skilled workers are often called artisans. These are people that specialize in creating something, usually by hand, and usually requiring lots of training.

00:02:24 But now that these new machines were replacing these skilled artisans, unskilled workers were hired to tend these machines, and these were workers that were paid less than skilled workers. They were given less training, and they were easily replaceable. Now, as a result of mass production, manufacturing costs dropped, production increased,

00:02:46 and prices went down, which made goods more accessible and affordable to more people. Now take a closer look at the effects of mass production.

Section 4

00:00:00 TEACHER: Now that we know a little bit more about how mass production led to changes in the way things were produced, let's talk about the impact that mass production had on working conditions. Workers often found themselves facing very dangerous conditions in factories. This is because machines had very few safety features. These inventions were designed to be fast, not safe,

00:00:24 and workers were rarely given safety equipment to protect themselves while they worked on these machines. As well, workers worked very long hours doing repetitive tasks over and over, which led to fatigue and eventually, a lot of accidents. But companies rarely took the blame for these accidents. There was very little regulation from the government of these companies, and the owners of the factories

00:00:50 felt that workers had the choice to show up to work there, and that they should be more careful in doing that work. Two industries in particular were very, very dangerous, coal mines and railroads. And you can see that we're looking at a graph that shows us the number of fatalities, or deaths, in these two industries. Take a look at the orange line first,

00:01:13 which shows us the number of fatalities in the mining industry between 1900 and 1940. And here you can see a photograph of three men working in a mine. And if you look at the orange line, you can see that the number of deaths between 1900 and about 1905 went up tremendously. Over 3,000 people died that year working in mines.

00:01:37 Even more people died working on railroads, which is the purple line. And you can see that, again, between 1900 and 1905, there's a sharp spike in the number of deaths doing that work. Over 4,500 or so people

died on the railroads at this time. You can see, though, that after 1910, both industries are going to see a drop in the number of people dying doing that work,

00:02:04 so that tells us that over time, this work did become safer. But in 1900, there were still a lot of people doing very heavy lifting, doing very repetitive, dangerous work. So before we move on, think a little bit more about how mass production affected workers.

Section 6

00:00:00 TEACHER: As you know, we're working to answer the question, how did industrialization affect the lives of workers and their families? Now that we've had a chance to look more closely at working conditions, we know that workers were often unskilled and expected to do very dangerous work. Now let's take a look at the impact that this work had on families.

Section 7

00:00:01 TEACHER: Mass production would have a big impact on the way people lived and worked. Before industrialization, families often worked together to create products. They would team up and work together on farms, like the family in this image, or make goods together by hand. But after industrialization, these handmade goods could no longer compete with mass-produced goods.

00:00:24 Mass-produced goods were made a lot more quickly and more cheaply, and so family work was often replaced by factory work. And so families, including children, began to work in factories. And this is a really good example of what's called child labor. In 1900, approximately 2 million children had factory jobs. Now, child labor is any sort of work

00:00:49 that is typically done by adults that children are doing. So it includes factories, but as well, mines and mills. And there were no laws that prevented children from doing this work in factories. And more often than not, their families depended on the income that they were bringing in, so they needed their children to do this work. And on top of that, factory owners

00:01:11 often preferred to hire children because they could pay them less money. And in these factories, children worked very long hours in very dangerous conditions. Take a look at this photo, where you see child workers working in a very dangerous factory, not wearing any sort of safety equipment. Now, what do you imagine the effects of this work

00:01:34 would be on children? Child workers ultimately had very few ways to change their circumstances. They didn't get to go to school. They didn't have time to play. They often had to work long hours, and the work that they did was often very physically demanding.

00:01:52 And many of them, like the children you see in this picture, remained unskilled workers their entire lives. One law that tried to change this was called the Keating-Owen Child Labor Act, and it was passed in 1916. This law tried to solve the problem of child labor. It banned the sale of products from any factory that

00:02:16 employed children under age 14, any mine that employed children under age 16, and any business that employed children under age 16 to work at night or more than 8 hours a day. Now, this law was trying to stop Americans from buying child labor products. But ultimately, the law was struck down by the Supreme Court.

00:02:40 The court argued that the law overstepped the federal government's powers and that states should be able to make these decisions individually. Ultimately, no law regarding child labor would be passed until 1938. Now take a moment to review what you learned about child labor.

Section 9

00:00:01 TEACHER: Unfortunately, there are still many child workers today. And just like the factories during the Gilded Age had many children who were working to support their families, many children in developing nations today are working to do just that, support their families. And many of the products that we use today

00:00:20 come in part from the work that these children are doing. Now, in order to raise awareness about child labor issues, in 2002, the United Nations began to sponsor a World Day Against Child Labor, which happens each year on June 12. In this photo, you see an example of a child worker today. Now take a moment to look at child workers

00:00:44 during the Gilded Age.

Section 11

00:00:00 TEACHER: Now that we know more about the effect mass production had on children, we're one step closer to answering our lesson question, how did industrialization affect the lives of workers and their families? Now let's talk about the impact industrialization had on women.

Section 12

- 00:00:00 TEACHER: Mass production would have a big impact on women. Many women also worked long hours outside of their home. Many of them worked in factories, like the women in this picture. Others worked in sales or as clerks. And many women even worked two jobs to support their families. In most cases, they were still responsible for household tasks, even if they were
- 00:00:23 working outside of their home. Let's take a moment to look at a chart that shows us women's professions in 1900. By 1900, there were over 5 million women in the workforce. They accounted for about 1 out of every 6 workers. But they faced many limitations. You can see that most of the work available to them was farming and domestic work.
- 00:00:48 And for the most part, they earned far less than men. Now, take a closer look at this chart on your own.

Section 14

- 00:00:00 TEACHER: Eventually, the economic and social challenges of the Gilded Age would lead to reforms. And you'll learn more about the people behind these reforms later. But for now, let's talk just a little bit about the reform efforts that started during this time. Reformers worked to organize labor unions and advocated for child labor laws.
- 00:00:22 Many formed women's suffrage groups and pursued safety laws. Before we move on, take a moment to think a little bit more about workers' rights.

9.6 Cost Benefit Analysis

Section 1

- 00:00:00 TEACHER: Remember your lesson question, how can government leaders use a cost-benefit analysis process to make decisions? Now that you know what decision you're going to have to make, let's figure out what exactly is a cost-benefit analysis.

Section 2

- 00:00:00 TEACHER: A cost-benefit analysis is a method for make a wise decision. Maybe this is you-- writing out the pros and cons of getting healthier lunches in the cafeteria. In a cost-benefit analysis, what you

do is compare costs and benefits of your decision. Should we try and get healthier foods

00:00:22 available at lunchtime? Your decision or your choice is broken down. The costs are negative outcomes. Say for example, it might make the price of school lunches a little higher if you have those healthier options. But the benefits are the positive outcomes. Students feel better and are more alert in the afternoon, because they have healthier options at lunch.

00:00:44 So one strategy for making a decision is identifying the costs and benefits. Your decision is, should you change the school lunch program to include healthy foods? So, maybe these are some benefits or pros of the decision. People would feel healthier and they might even live longer.

00:01:03 And healthy foods taste better than processed foods. But the costs or the cons of this decision is that the price of lunch may go up. People may have to give up favorite foods like pizza and French fries. Things that taste good, but aren't necessarily good for you. And funding for other programs could decrease.

00:01:25 So now, you've conducted a cost-benefit analysis of your decision.

Section 4

00:00:00 TEACHER: To understand the pros and the cons of a decision, you have to identify the economic consequences. The first step in this process is calculating the total cost of all of your options. So if you wanted to include healthier food in the cafeteria, it might end up making the cost of school lunches more expensive for students.

00:00:22 However, if you kept unhealthy options, it would keep the cost of school lunches down in the short term. But it could lead to health risks down the line, which may end up costing more money in the future. The next thing you want to do is compare the total costs of all of your options. And then finally, identify possible economic outcomes. Now it's time to test your skills.

Section 6

00:00:00 TEACHER: Here's an example of how we could identify possible economic outcomes. Remember, our decision is, should we change the school lunch program to include healthy foods. Some benefits would be, we could save money on medical expenses, if students are eating healthier and healthier in the long run.

00:00:24 It also might give business for local farmers, if the school were to buy their produce or their fresh veggies from local farmers, that would increase the profits then. Now, let's look at some costs of changing the school lunch program. Well, the price might go up for students and for the school. In general, fruits and veggies cost a little more than
00:00:52 processed foods like pizza or French fries, which might make the price increase. So now, let's review your lesson question again. And apply this same process, but in new ways.

Section 7

00:00:00 TEACHER: Our lesson question is how can government leaders use a cost-benefit analysis process to make decisions? We've talked about what it cost-benefit analysis is, and we've considered some economic issues that we might run into if we wanted to change school lunches and make them healthier. Now, let's consider some political and social issues we
00:00:21 might run into.

Section 8

00:00:00 TEACHER: You also need to understand social and political effects of a decision. When we're talking about social effects, we mean consequences that affect the activities of people or society. When we talk about political effects, we're talking about consequences that affect the activities of government.
00:00:20 Let's take a look at each. Your decision is, should you change the school lunch program to include healthy foods? Here are social pros and cons, or benefits and costs. The benefits are that if students are healthier, they will be happier. If students are healthier, they will miss less school. And parents and teachers want students to do well in school.
00:00:43 However, the cons, or the costs, are that students could be angry about losing foods that they enjoy, like pizza. Parents could be upset about paying more for lunches. And school leaders will have to raise money to pay for the new lunch program. So when you're analyzing these pros and cons, ask yourself, how does this decision affect society? Or how will my fellow students feel about this decision?
00:01:08 And how will parents and teachers react? When you're identifying political issues, you can also look at pros and cons, or the benefits and costs. So your decision, again, should you change the school lunch program to include healthy foods? Well, pros are that if people

approve, that could help your chances of reelection. But if they disapprove, it could hurt your chances of reelection. So ask yourself, how will this affect your chances at reelection? Will it help, or will it hurt you? And how could this decision affect the school politics for me and for adult school leadership? Now try it on your own.

9.7 Labor and Unrest

Section 1

00:00:00 TEACHER: In the warm-up, you learned about conditions that the workers faced. In order to demand better working conditions, workers created and joined labor organizations called labor unions. They went on strike, or they stopped working, until the employers would meet their demands and improved their working conditions.

00:00:18 In this lesson, you're going to learn about the labor movement's goals. You're also going to see how corporations responded to these goals. And finally, we're going to look at a case study, an event called the Pullman Strike that showcased the problems that were happening for workers during this era. But in this segment, we're going to learn about the goals

00:00:38 of the early labor movement in America and how workers tried to achieve those goals.

Section 2

00:00:00 TEACHER: The labor movement is all about getting workers to band together, get them organized, come together and fight for change. Now labor organizations have been around for quite some time. In fact, craft guilds were an early kind of organized labor. Guild members, or masters, trained young apprentices in a particular skilled art form or craft.

00:00:20 Skilled craftspeople include such positions as blacksmiths or weavers. And guilds maintained quality control by limiting their memberships to the best workers. And it set price points for their members' work. Now, skilled workers organized trade unions to protest the lowering of wages and the increased use of unskilled workers.

00:00:44 Now, unskilled workers faced a very tough situation. Skilled workers had trade unions. So to get similar benefits, unskilled workers formed labor unions, organizations that presented workers' demands and

negotiated with owners. Now, during this time, labor unions became vital. Now, unlike the skilled workers, unskilled workers were easily replaceable.

00:01:10 And, in fact, many of them were newly arrived immigrants. Skilled workers, remember, had trade unions. So to get those similar benefits, unskilled workers had the labor union, an organization of workers for the purposes of advancing its members' common interests. Basically helping them to achieve their goals. Now, labor unions were most often organized within a single field or industry such as a railroad workers union or

00:01:38 a mill workers union. They were usually very small, local unions concerned with a single factory, or a single mine, for a single workplace. They often limited their membership. Immigrants, women, and African Americans were typically denied membership to the early unions which kept their wages lower, and it prevented them from entering some fields of work all together.

00:02:05 Now labor unions began to develop specific goals that they wanted to fight for. And some of those unions represented different groups of workers, but they all shared the same key concerns. One common demand was to shorten the work day from 12 hours to 10 hours. And eventually, unions would demand an 8 hour day. Another common demand was for better pay.

00:02:29 Even the lowest unskilled workers still had their families at home that they needed to take care of. A final common demand was for a safer workplace and compensation for workers when they were injured on the job. In order to achieve these demands, unions engaged in collective bargaining. Now, collective bargaining means that union leaders negotiate with management on behalf of a group of workers

00:02:54 that is going to receive all the benefits.

Section 4

00:00:00 TEACHER: In order to achieve their demands, many small unions would go on strike. Now, a strike is a strategic work stoppage that's designed to put pressure on an employer to give in to a union's demands. So what does this mean? It means that the workers are going to refuse to do their job until their demands are met.

00:00:18 And then once they're demands are met, then they agree to go right back to work. Now, one of the first strikes in the country was organized by the Lowell Mills girls in Lowell, Massachusetts in 1836. They were protesting the low wage cuts that were going on in their

textile mill. Now, although this particular strike did not achieve its goals, it did get workers thinking about the fairness of

00:00:42 their working conditions, and it got the state legislature to examine the conditions that were going on inside the mill. This strike paved the way for the future of labor as workers in other industries began to organize and protest the unfair practices that were going on in their factories. As more workers began to protest conditions like the Lowell Mills girls experience, organizations grew to help advocate for the workers' rights.

00:01:11 Now, one of these organizations was called the American Federation of Labor or the AFL. Now, the American Federation of Labor was an early labor union that became one of the most powerful unions in the entire nation by the end of the 1800s. The AFL grew out of a group of craft unions bringing together skilled workers from many different industries. It was led by Samuel Gompers, a labor leader who served as

00:01:40 the AFL president for 37 years. The AFL focused on the core demands that we just talked about like shorter work hours, safer working conditions, the rights of workers to organize, to form and join unions. The AFL was successful, because it was made up of skilled workers only. Which these workers were much harder to replace than the unskilled ones.

00:02:06 So the union was in a much better position to gain concessions from business owners as a result. So as a result, the AFL was better organized than most of the unions which were often unable to build consensus between skilled and unskilled members and workers from different industries. Now, let's take a look at one of the most influential members of this organization, Samuel Gompers himself.

00:02:30 Samuel Gompers was an English foreign cigar maker who transformed the organization movement in the United States. Gompers was president of the AFL from 1886 until his death in 1924. He was the first and the longest serving president of the AFL. Under his leadership, the AFL became the world's largest and most influential labor union with nearly 3 million members

00:02:59 at the time of Gompers' death. Now, Gompers believed that unions had the power to achieve social reform as well as workplace reform. And to do this, Gompers believed that unions should focus on improving the economic conditions of workers. He also strongly felt that unions should stay out of politics as much as possible.

00:03:21 He knew that unions would have to be politically involved at some level to get the laws passed to protect the workers, but he did not want his unions to be linked or tied to a particular political party or a

particular candidate. He was willing to support any candidate that was willing to improve the lives of the workers.

Section 6

00:00:00 TEACHER: We know that the workers of the Industrial Revolution often encountered very difficult and very dangerous working conditions. Now, to improve these conditions workers formed unions, such as the AFL, and they went on strike to force business owners to shorten the work day and to make the workplace safer. So in this segment you're going to learn about how

00:00:21 management and how the government itself responded to these laborers' demands.

Section 7

00:00:00 TEACHER: So for the employer, the growth of unions meant the growth of costs. It meant that their costs were going to go up. Managers believed that shorter work days were going to reduce the productivity of the worker. And if workers aren't at their job as much, they're not getting as much done, which means they're going to lose money.

00:00:19 And they'd have to hire more workers to produce the same amount of goods. And this would cause productions costs to go up and the profits to go down. This meant a lot less money for the employers. So what the companies started doing was they started union busting. And these were strategies that would stop the unions

00:00:38 themselves from growing.

Section 9

00:00:00 TEACHER: Now, as you can imagine, companies were not happy with striking workers. Most employers believed that union organizations would cost their companies money. So they employed union busting strategies to try to break down the union. They thought it was wise to keep a union out of a company altogether.

00:00:18 And they tried to do this through that process called union busting. Now, employers tried to bust unions in a few different ways. One, before hiring workers, companies forced new employees to sign contracts that promised that they would not join a union. If that employee did wind up joining a union,

00:00:38 they could be fired. Another way that they tried to employ union busting was if a company's workers went on strike, then the company would hire strike breakers which were other unskilled workers that were willing to come in and run the factory while the regular workers were on strike. The other thing that they did was companies would hire detectives to spy on the unions.

00:01:00 The detectives reported back to employers about any union activity that was going on.

Section 11

00:00:00 TEACHER: The companies were not the only ones who were trying to break up the unions and break up the strikes. The government also was called in to break up the unions as well. Because in some instances, strikes could turn very violent and the strikers or the strike breakers could get injured and sometimes even killed. When this happened, the government would

00:00:18 often be called in. And they would intervene and break up the strikes. And more often than not, the government would actually side with the company management. And it would jail workers who were involved in the strikes if those workers were found to have been breaking the law.

Section 12

00:00:00 TEACHER: Let's take another look at our lesson question. How successful were labor unions in achieving their goals in the 1800s? Well, you already know that labor unions used strikes to win demands from their employers. And you also know that employers fought back with union-busting strategies. And the union-busting strategies included hiring

00:00:19 strike breakers and also hiring detective. So now, despite management efforts to bust union, workers still organized and they went on strike. So now we're going to learn about a strike where these tactics were used. And this is going to be the Pullman Strike.

Section 13

00:00:00 TEACHER: Pullman Palace Car Company built sleeping cars for trains. And the company actually built a town near Chicago, Illinois, where most of its employees lived. The company owned everything. They owned the land, they owned every home, and they owned every

business within that town. Now when the recession hit in the 1890s, the company laid

00:00:20 off workers and it cut their wages. But it also refused to lower the high rents and also the food prices. And workers who tried to move to a more affordable town were quickly fired. So some Pullman workers went on strike. The Pullman Workers Union did not authorize the strike, and so this type of strike was called a wildcat strike.

00:00:43 And the Pullman Strike is probably the most famous wildcat strike in American history.

Section 15

00:00:00 TEACHER: So let's take a closer look at the most well known strike in history, the Pullman Strike. Some of the striking workers were members of the American Railway Union. And the strikes soon earned the support of this union. The union asked people around the country to boycott Pullman train cars. A boycott is a voluntary refusal to use or to buy

00:00:22 something usually in protest. Now, at the same time, the strike soon turned violent completely disrupting travel and shipping all throughout the West. The railroad companies called on the federal government to help. The government said that the unions could not disrupt the railroad traffic.

00:00:40 The President at that time, Grover Cleveland, sent in federal troops that would end the strike. So let's take a closer look at one of the individuals that was involved in this strike, Eugene Debs. A union leader would emerge from the Pullman Strike, a man named Eugene V. Debs. Eugene V. Debs began his career as a labor organizer. He was the founder of the American Railway Union.

00:01:06 And because of his role in leading the Pullman Strike, he was actually sent to jail. But he went on to a long career as the very powerful figure in organized labor. Now, the Pullman Strike had several important effects. Now, neither side won a complete victory after the Pullman Strike was over. And as a result of the Pullman Strike, union organizers were

00:01:28 actually charged with criminal acts. And American Railway Union leader, Eugene Debs, was sentenced to six months to serve in prison. Pullman rehired the workers, but only if they agreed to resign from the union. And most of them did. Pullman lost more money fighting the strike than it would have lost if they'd actually given into the

00:01:50

union's original demands. So seeing what happened with the Pullman Strike, other companies began asking the courts to issue orders against union activity. The federal government did nothing to protect unions, so these companies were generally successful in stopping the union activity.