

Developments in the West (Mid 1800s-Early 1900s) -- Scavenger Hunt

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Table of Contents:

Lesson Plan	2-3
Directions for Activity	4
Group Readings	5-15
Stations	16-21
Clues	22-23
Scavenger Hunt Processing Handout	24-25
Assessment	26-27
Photo Credits	28
Endnotes	28-29

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How did developments and technology change the West? Was it a positive or negative development?

Standards (Utah State Standards):

- Standard 1: Students will expand their knowledge of pre-Reconstruction America.
 - Objective 3: Analyze the growth and division of the United States from 1820 through 1877.
- Standard 2: Students will understand how the growth of industry changed the United States.
 - Objective 1: Assess how transportation, communication, and marketing improvements and innovations transformed the American economy in the late 19th and early 20th centuries.

Objectives:

- Students will understand how technology changed the West. They will analyze the implications of technological development.
- Students will connect technological development in the late-19th century West to technological development in the modern world.

Importance and Rationale:

This lesson is designed to allow students to draw connections between the technology in the West and technological developments today. While participating in the activity, students will learn about particular groups of people and particular developments that occurred in the mid-1800s-early 1900s. The readings/questions at the beginning of the lesson are different lengths so as to stagger the timing of the groups starting the activity. The main activity of stations allows students to develop social studies skills including interpretation of primary sources and context clues, searching for a topic in an index, and working collaboratively. The final assessment forces students to work collaboratively with other groups, combining the information and analysis that they collected throughout the activity. Finally, the assessment provides students with an opportunity to reflect and connect the activity to modern technological transition.

Materials:

- Student Readings
- Station Materials and Clues
- Scavenger Hunt Processing handouts
- Envelopes for excerpts
- Deck of cards for grouping
- Assessment handouts

Preparation:

1. Set up the stations. Place the station materials on the wall. Underneath each station place an envelope with the next set of clues.

Clue 1: Teacher holds envelope

Clue 2: At Railroad station

Clue 3: At National Forest Service station

Clue 4: At Agricultural School station

Clue 5: At Branding station

Clue 6: At Barbed Wire station

Clue 7: At Dam station

2. Copy student readings, scavenger hunt processing sheets and assessment.

Anticipatory Set:

1. **Show short video clip and discuss the positives and negatives of technological development.** For example, I recommend *The Jetsons Meet the Flintstones* (0:00-6:00), http://www.youtube.com/watch?v=W_qKMMRXFGY.
2. **Explain the purpose of lesson.** Explain that students will be examining the positives and negatives of technological developments through the lens of the late 19th century American West. They will be looking at different developments and analyzing how they affected groups of people in the West.

Reading:

1. **Review the steps for learning about technology in the West.** Project instructions transparency.
 - Read a primary source clue describing a new development
 - Match the excerpt to one of six stations around the room.
 - Examine the visual and written info at the station to determine why this development might have been significant. Show students processing sheet that they will complete as they go. Have students take the new excerpt from that station when they're done.
 - Provide box for "done" excerpts. The stations and excerpts will be linked in a "trail." If students complete the activity correctly, they would successfully go to all the stations.
 - Repeat these steps.
2. **Introduce the Essential Question.** *How did developments and technology change the West? Was it a positive or negative development?*
3. **Group students by passing out playing cards.** Groups of four will be formed by the numbers on the cards (four people with #1 cards), and then roles will be assigned within each group based on the suit of the card. See page 4 for roles.
4. **Have students read about their assigned group of Western people and answer the attached questions.**

Social Studies Skill Builder:

1. **When students have completed their reading and questions, they will present their completed work to teacher for approval.** The readings were designed to be different in length to stagger the start of the stations activity. If students have thoroughly completed reading and questions, they will be given the first clue.
2. **Conduct the Activity.** Students should follow their clue to the corresponding technology station. Each group member should complete their assigned role at the station, take the next clue and then move to the next station. When they have completed all six stations, they should sit, share their answers with other group members and bring their completed work to the teacher. The teacher can review their work and verbally quiz the students assessing their knowledge and completion of the activity.

Assessment:

- **Students will complete the main assessment piece upon finishing the scavenger hunt.** They will be analyzing how technology affected the different groups of people in West, assess the effects of technological developments in the West, and apply what they have learned to modern situations. If time allows, the topic can be discussed at the end of class. Otherwise, begin the next day's class with a discussion of the application to modern developments.
- Smaller assessment checkpoints will also be built in after the reading and with individuals during the activity.
- Students can hand in their processing chart for an additional method of assessment.

Learning About New Developments in the West – Scavenger Hunt

Follow these steps to do a scavenger hunt on developments in the West:

- Find your other group members and make sure that everyone knows their responsibility.
 - ♥ **Hearts** = Group Optimist: Find the positive effects of each development.
 - ♣ **Clubs** = Group Pessimist: Find the negative effects of each development.
 - ♠ **Spades** = Group Digger: Determine how each development affects your assigned group.
 - ♦ **Diamonds** = Group Miner: Find the scavenger hunt fact at each station.
- Each group will be assigned a group of people in the West to learn more about.
 1. Miners
 2. Native Americans
 3. Cowboys
 4. African Americans
 5. Chinese Americans
 6. Women and Children

Read about your assigned group and answer the questions at the end of your reading.
- When you have finished, bring your completed questions to the teacher to approve. If you have successfully and thoroughly answered the questions, the teacher will provide you with the **first clue**.
- Read the clue and determine which development it matches. Go to that station with your group, read the materials at the station and **fulfill your assigned roles**.
- When **ALL** members of your group have completed their roles. Take an excerpt out of the “NEXT EXCERPT” envelope at this station. Return to Step 4.
- When you have completed all of the stations, return to your seats and compare sections. **All students in the group are responsible for knowing all of your answers.** When you have completed sharing information, bring your finished processing sheets to the teacher. If you have successfully finished, you will be given your homework assignment.

Chinese Railroad Workers

The building of a transcontinental railroad opened up new opportunities for Chinese workers. In July of 1862, Congress passed the Pacific Railroad Act which approved the construction of a railroad that would reach from the Western coast to the Eastern coast of America. Two companies, Central Pacific and Union Pacific, were granted the rights to build this railroad.



Transcontinental Railroad Route.

Central Pacific was to begin building their railroad from the West, but had difficulty finding enough laborers to efficiently build the railroad. Central Pacific began recruiting Chinese laborers. Initially there were doubts as to whether the Chinese had sufficient strength to handle the job, because the Chinese averaged four feet ten inches in height and weighed 120 pounds.¹ They were given light

jobs, such as filling dump carts, but quickly proved strong and efficient, and the company began to assign them more difficult jobs.

The railroad workers faced the difficult task of laying the track through the Sierra Nevada, a dangerous mountain range. Albert D. Richardson, a *New York Tribune* reporter, vividly described the scene, “The rugged mountains looked like stupendous ant-hills. They swarmed with [Chinese], shoveling, wheeling, carting, drilling, and blasting rocks and earth.”² One historian describes the work as working, “...shoulder to shoulder, hour after hour, the Chinese railroad workers chipped away at the rock, breathing granite dust, sweating and panting by the dim flickering glow of candlelight, until even the strongest of them fainted from exhaustion.”³ This dangerous work caused many deaths, one historian claims that on average, for each two miles of track laid, three Chinese laborers were killed by accidents.⁴



Chinese railroad workers laboring in the snow.

Many of the Chinese were considered to be hard-working and dedicated. However, when the railroads met at Promontory Point, the Chinese were hardly recognized by the company leaders. E.B. Crocker, later declared, "I wish to call to your minds that the early completion of this railroad we have built has been in large measure due to that poor, despised class of laborers called the Chinese, to the fidelity and industry they have shown."⁵ Additionally, upon the completion of the railroad, many of these Chinese workers once again faced unemployment and racism. The company did not even provide a return trip to California for these workers, who were now abandoned in the mountains. Some returned to China, others brought their families to California, while others scattered around the nation.



Painting of Chinese Railroad Workers.

Questions:

1. Why were the Chinese recruited to work on building the Transcontinental Railroad?
2. Summarize the experience of the Chinese railroad workers.
3. Were the Chinese railroad workers treated fairly? Why?

Cowboys

Often we think of cowboys as white men who chase outlaws, battle Indians, fight duels, and lead daring, adventurous lives. In reality, many cowboys were African American, Mexican and Native American. Cowboys were mostly young, single men between their teens and their thirties.⁶ While they did lead an adventurous life, it was also a lot of hard, dangerous work.



Most cowboys were hired to herd cows, which means they spent most of their time rounding up cows (a.k.a. cattle or longhorns), branding calves and “driving” the herds to market. Most cowboys rode a horse, wore practical clothes, and rarely carried a gun. They had to have many skills including being able to rope, ride, help sick and injured cattle, find lost calves, stop or divert stampedes and calm restless horses.⁷

Cowboys often worked 10-14 hours per day (sometimes more) and were paid a relatively small amount of money. They could be injured and killed by an animal, be killed in a stampede, catch pneumonia, be drowned while crossing the river or be hit by lightning. In fact, more cowboys were killed by lightning than were killed fighting Native Americans or outlaws.⁸

Before the time came when fences would separate one ranch from the next, the prairie was wide-open to everyone. The cattle were able to be set loose and graze where they wished. Roundups were held two times per year where cowboys would gather and sort all of the cattle scattered throughout the prairie.

In Texas, a four-year-old longhorn was worth \$3-\$4, but that same longhorn would be worth as much as \$40 in the north.⁹ Because railroads that traveled between Texas and the North had not yet been built, cowboys took the cattle and marched north on a trail. It would usually take 2-3 months to drive a herd from Texas to the railroad in Kansas.¹⁰

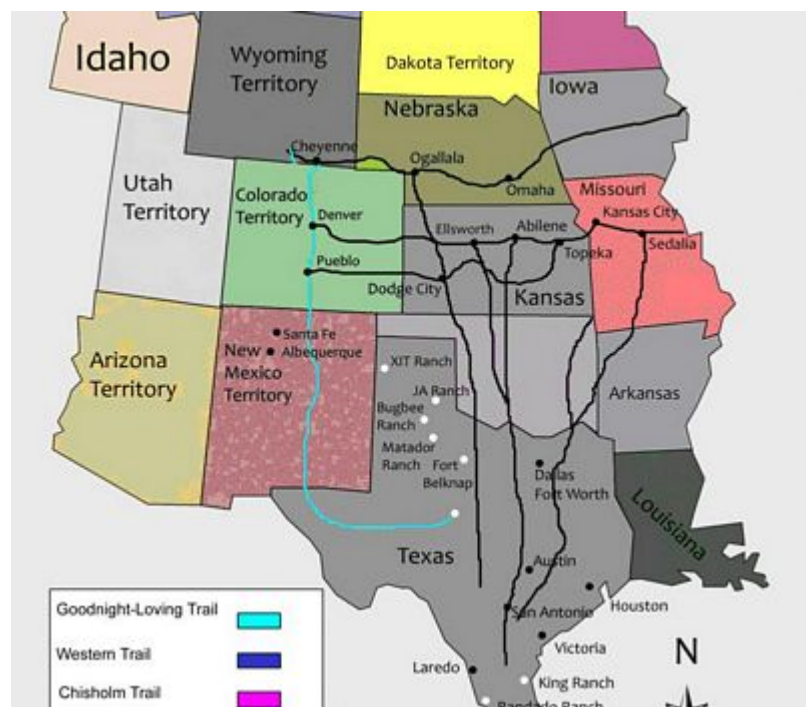


Cattle Drive

Cowboys would usually be paid between \$50-\$90 for the cattle drive to Kansas. When the cattle drive was complete, cowboys would stop in towns and spend their money in saloons, dance halls, shops, and gambling parlors.¹¹ When they ran out of money or became bored, most cowboys headed south, found work on a ranch, and then worked on a cattle drive the following year. Most cowboys roamed from job to job as the seasons changed, and in the winter, many of them could not find any jobs.¹²

Many boys headed west to become a cowboy thinking that it was an easy life of adventure and excitement. Many did not realize how difficult the job would be and some were not able to tough it out. Most cowboys worked 6-7 years before settling down in a town or on their own land.¹³

The high point for cowboys was between 1865 and the late 1880s (about 20 years). The need for cowboys dwindled, as new technologies were created.



Cattle Drive Routes

Questions:

1. What was a **cattle drive**? How did the cowboys move the cattle?
2. Who were cowboys? What was their job like?
3. Do you think that we remember cowboys fairly for who they really were and what their job was like? Why or why not?
4. What new technologies might have ended the need for cowboys? Why?

African Americans

During the 1800s, African Americans filled many different roles in the West. Before the Civil War, some African Americans were freed or escaped and went West and settled. Some who had escaped were tracked down and taken back to slave states. Also, some went to California as slaves of gold miners or to Utah as slaves of Mormons. However, slavery was highly debated in the West, and several states and territories prohibited slavery. Because of this, many slaves in the West attempted to gain their freedom.¹⁴ While not all were successful, several African Americans gained their freedom and settled in the West.¹⁵

Free African Americans fought in the Civil War, and in 1866, at the end of the war, all-black units were created and they served in frontier outposts. The Native Americans called them “Buffalo Soldiers,” because of the texture of their hair. They were segregated, commanded by white officers, and were paid much less than white soldiers.¹⁶ Their main responsibilities were to suppress Native American fighting and to make a safe environment for settlers traveling west.¹⁷ While some remained prejudiced toward these soldiers, others began to respect and even praise them. They are remembered as competent, successful soldiers.¹⁸



Buffalo Soldiers – 25th Regiment

Other African Americans were hired as cowboys, and worked on ranches and cattle trails. Most African Americans were cooks, cowhands, or top hands, but despite their official title, most had many talents – roping, riding, cooking, singing to calm the cattle, etc. Because of their race, they were limited to the lower tier of jobs, so they could be in management position. The amount of prejudice varied depending on the situation, but some likely faced smaller amounts of prejudice and segregation. It is estimated that up to 25% of cowboys were African Americans.¹⁹



Cowboy with horse

After the Civil War, many freed African Americans were unable to obtain land of their own in the South. In 1866, Congress passed the Southern Homestead Act, which allowed freedmen and women to move west and obtain land.²⁰ Thousands of African Americans took advantage of this, but few found quality land. Many stopped in towns and remained as laborers or domestic workers.²¹ While prejudice existed in the West, as it did everywhere, many African Americans seeking refuge in the West, found better opportunities than in the South.



Black settlers

Questions:

1. What were the different roles that African Americans had in the West?
2. Summarize the different reasons why African Americans moved to the West.
3. Were the African Americans treated fairly in the West? Why?

Women and Children

While some women traveled west with their husbands, the West remained largely male through the 1800s. In Texas, the ration of men to women in 1890 was 110 to 1.²² However, some women did choose to move West with their husbands, families or even by themselves. In the West, they still faced traditional legal barriers and social prejudice. Despite this, in the West, women were more equal partners in marriage than in the East, because many settlers had to survive hard times settling in.

Women also moved west with their husbands who were going to mine or seek other work. Some women opened their own businesses, making more money than their husbands made searching for gold. There were also women that made independent homestead claims, claiming land for themselves (although sometimes they claimed land and their fiancées claimed land, and then they married soon after, merging the two plots of land).

Many women and children suffered on the westward journey and had to work hard after claiming land (or moving to a town). Farming families especially had to work hard to build a house, plant and harvest crops and help the family start a new life.

Some children moved west on orphan trains, organized by the Children's Aid Society to save city orphans by placing them with families in rural towns, farms and ranches of the west. Boys were more often accepted into this program and some families adopted them just for as an extra hand to help with farming.²³

As more children moved into an area, schools were created. However, these schools were slightly more lax than schools in the east. Because many families needed the children to help at harvest time or because of the long commute in adverse weather, the schools were often poorly attended during certain times of the year.

During the late 1800s, many Native American children began to be sent to boarding schools operated by either the reservation or by religion missions. Until this time, many Native American children learned by modeling family members, the American model of education came as somewhat of a shock to them. They were often

encouraged to abandon their Native American identity and to assimilate into white culture.



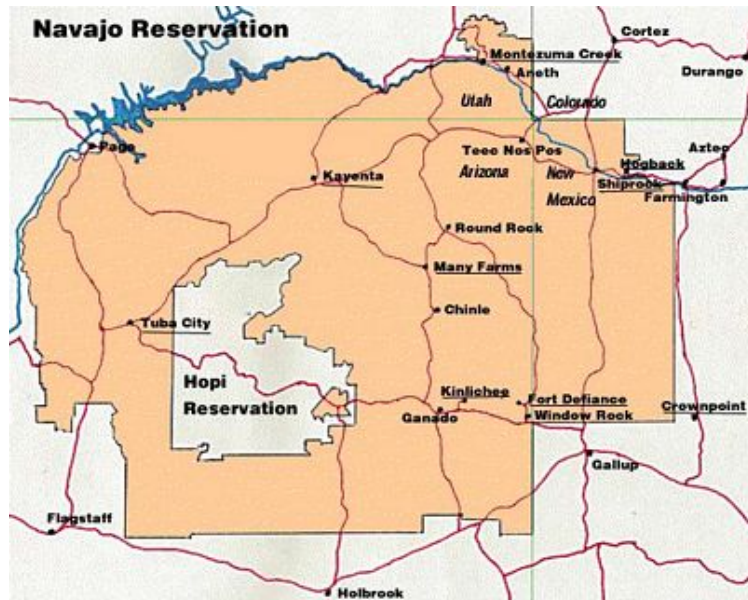
School children in the 1800s.

1. What was the general experience of women and children in the West?
2. Do you think the West opened up new opportunities for women and children? Why or why not?
3. Do you think reservation and mission schools were good for Native Americans? Why or why not?

Native Americans

Since Europeans arrived in America, they have constantly misunderstood the Native Americans' culture, and because of this have frequently taken advantage of them.²⁴ From the beginning, the Native Americans had something that the Europeans wanted – LAND. The justification of the Europeans was “**not** that white people were greedy and mean-spirited; [but instead] Indians were the greedy ones, keeping so much land to themselves;” and the white people would put the land to better use.²⁵

In 1851, the US government began taking the land of Native Americans and dividing their tribes onto reservations throughout the West. These reservations were usually small, confined and poor quality land. Some tribes went to reservations willingly, but others fought bloody battles with the US for their land (which they usually lost). On the reservations, many died of starvation or disease.



Map of Navajo Reservation

Many Native American tribes lived primarily off of buffalo hunting. Buffalo flesh provide their main source of food and they used the skin for materials for clothing, tepees, shoes, blankets, robes and utensils. They also used “buffalo chips” (dried manure) for fuel, buffalo bones for knives and arrow tips, and buffalo tendons for strings of bows.²⁶



Train approaching grazing buffalo

The US Army was supposed to protect their hunting grounds, but they largely did not enforce this protection. White hunters killed buffalo for sport – sometimes even shooting from train windows just to watch them die.²⁷ This senseless killing of buffalo upset Native Americans -- Comanche chief Santana remarked, “Has the white man become a child that he should recklessly kill and not eat?”²⁸ However, once some whites realized how badly Native Americans needed buffalo, this only encouraged them more. Colonel Richard Dodge urged a hunter to “Kill every buffalo you can! Every buffalo dead is an Indian gone.”²⁹ After whites began killing buffalo, the buffalo went nearly extinct. With greatly reduced access to food and supplies, Native Americans became weaker and unable to fight the whites. They eventually became dependent on the government for food.

The US government wanted Native Americans to become farmers, Christians and citizens – making them more like white Americans and reducing their sense of community. Schools were built to educate Native Americans in both traditional subjects but also in white culture, including English, Christianity, etc. Sun Elk describes his boarding school experience, “They told us that Indian ways were bad. They said we must get civilized...The books told how bad the Indians had been to the white men – burning their towns and killing their women and children. But I had seen white men do that to Indians. We all wore white man’s clothes and ate white man’s food and went to white man’s churches and spoke white man’s talk. And so after a while we also began to say Indians were bad. We laughed at our own people and their blankets and cooking pots and sacred societies and dances. [Seven years later when I returned home], I had forgotten my Pueblo language.”³⁰



Carlisle Indian Industrial School – Student body

Overall, the government policy toward the Native Americans was dominated by racial prejudice. Native Americans began to be increasingly alienated and discriminated against.

Questions:

1. Summarize the different ways that Native Americans were affected by whites?
2. Why did the whites justify treating the Native Americans this way?
3. Were the Native Americans treated fairly? Why or why not?
4. How could whites have treated Native Americans differently? Please explain your answer.

Miners

Miners were an ethnically diverse group. After hearing rumors of vast quantities of gold and other precious metals and minerals, prospectors would hurry west, causing “rushes.” They were also followed by a crew of people who provided goods and services to the miners. While some miners may have struck it rich, many of the people providing goods and services made greater, more consistent profits by selling to the miners.



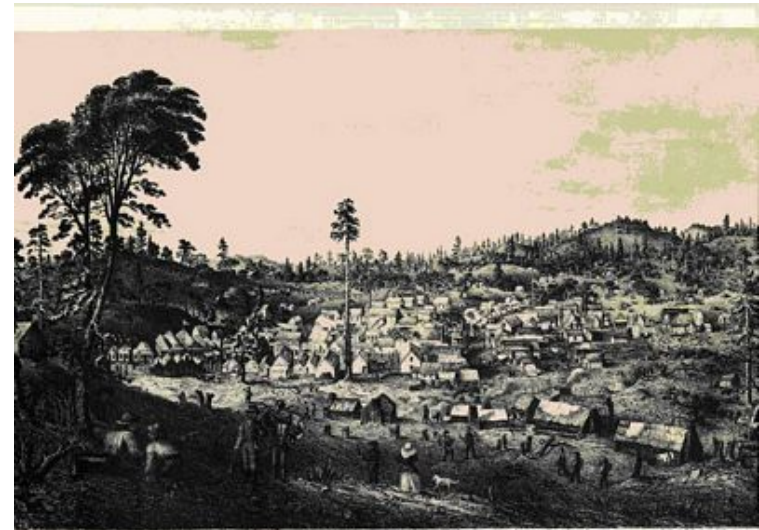
Miner panning for gold

After the more easily accessible gold (or other minerals) was found, it became more expensive for independent miners to continue searching in that location. Mining companies were developed to invest money into creating mine shafts and other needed amenities to make mining possible. Once companies were developed some miners gave up dreams of striking it rich and stayed and worked for an hourly wage for these companies. Other miners moved on to new mining hot spots or bought land and took up farming.



Equipment funded by mining company

Miners working for companies were frequently paid poorly and charged high prices for goods in the company towns in which they lived. Mining could also be a very dangerous job. As they began to organize, strikes in company towns were more frequent, although they were rarely successful.



Gold Rush Town

Mining Questions:

1. Summarize the experience of miners.
2. What did the miners do after the initial rush to a location?
3. Do you think most miners fulfilled their dreams? Why or why not?

Railroads

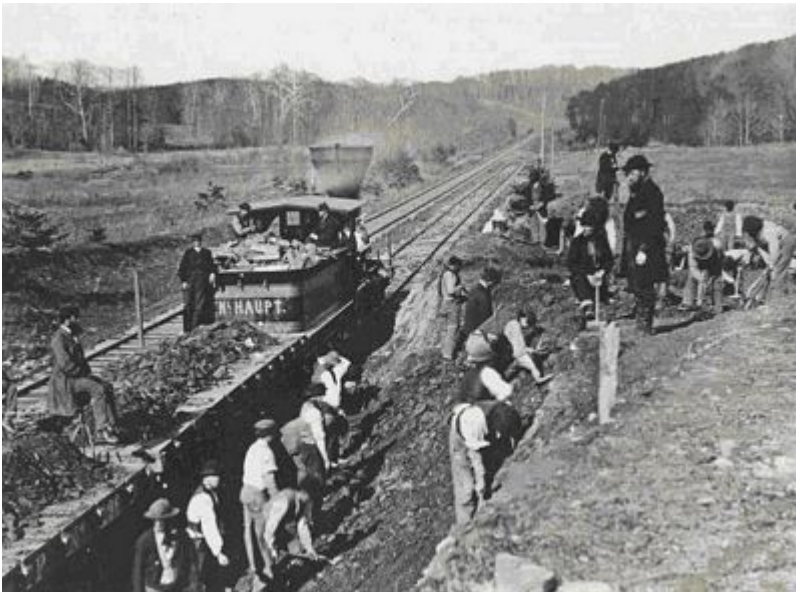
Before the railroad, the only way to travel west was by foot, horse, or wagon. Read these quotes to learn more about the new opportunities opened by the railroad, as well as the problems that it caused.

Quote 1: “The white children have surrounded me and have left me nothing but an island.” – *Chief Red Cloud, when the railroad passed through the former hunting grounds of the Sioux.*³¹

Quote 2: “The [railroad] is a great centralizer. It kills little towns and builds up great cities, and in the same way kills little businesses and builds up great ones.” – *Henry George, San Francisco journalist.*³²

By the numbers: In 1869, when the Union Pacific/Central Pacific line started passenger service, the fare was \$100 for first class service from Omaha, NE to Sacramento, CA. Second-class passengers rode and slept in day coaches and paid \$80 per ticket. Third-class passengers (who were mostly emigrants), paid \$40 per ticket, and sat in cars with narrow wooden benches in rows. Third-class cars were often attached to a freight train and took ten days to travel the same distance that a first-class passenger could complete in four days!³³

Quote 3: “The iron key has been found to unlock our golden treasures. With railroads come population, industry, and capital, and with them come the elements of prosperity and greatness to Montana.” – *Editor of Helena Independent.*³⁴



Building a railroad was hard work!



Quote 4: “Just think of it! [The government gave] 25,600 acres of land for the building of one mile of railroad. And this given to a corporation, not for building a railroad for the Government or the people, but for building a railroad for the Government or the people, but for building a railroad for themselves; a railroad which they will own as absolutely as they will own the land – a railroad for the use of which both Government and people must pay as much as though they had given nothing for its construction.” – *Henry George, San Francisco journalist.*³⁵

Quote 5: “Instead of a slowly advancing tide of migration, making its gradual inroads upon the circumference of the great interior wilderness, the very center of the desert has been pierced. Every station upon the railway has become a nucleus for a civilized settlement, and a base from which lines of exploration for both mineral and agricultural wealth are pushed in every direction.” – *Secretary of the Interior, Jacob D. Cox, 1869.*³⁶

Barbed Wire

In the West, cattle grazed throughout the open prairie. As the population in the West grew, farmers needed a fence that would effectively keep cattle out of their farmland. In 1874, several different men developed and patented barbed wire designs. Joseph Glidden designed the most successful product, and is thus remembered as the inventor of barbed wire (even though others also created their own styles of barbed wire).

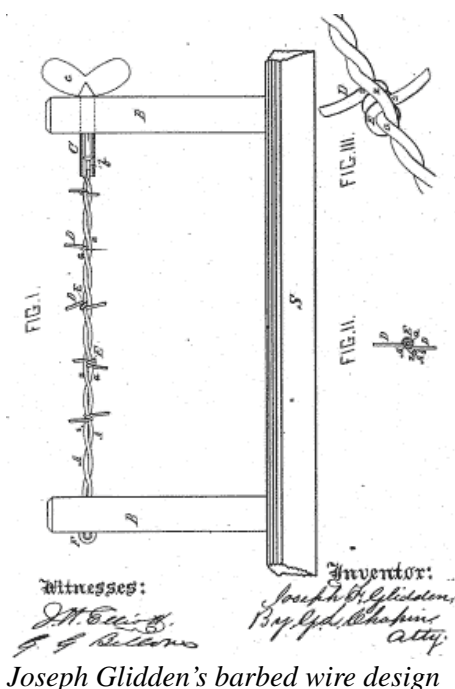
Quote 1: “It is estimated that 350,000 miles of **plain** galvanized wire [not barbed wire] was used for fencing purposes in the 20 years preceding **1870**. It was cheap, easily transported, easily [installed...yet] farmers and herders were never thoroughly happy in its use. The fence of plain and single wire was susceptible to all changes of temperature. It snapped in cold and sagged in heat. It had no terrors for cattle. They pressed up to the boundaries of the pasture, and easily [broke] through the fence on the adjacent crop.” – *Statement of Washburn & Moen Manufacturing Company to Legislature of New Hampshire, July 12, 1881.*³⁷

Quote 2: “This is the finest fence in the world. Light as air. Stronger than whiskey. Cheaper than dirt. All steel, and miles long. The cattle ain’t born that can get through it. Bring on your steers, gentlemen.” – *John W. Gates.*³⁸

Quote 3: “It may keep ‘em in, by God! But my cattle would cut themselves and die from screwworms, and I’ll be [darned] if I treat my critters that way.” – *Abel H. Pierce, Texas rancher.*³⁹

Quote 4: “[After I added barbs to my fence, the neighbor’s] hogs got through a few times after the barbs were put in. However, the barbs had the desired effect as the owner saw his hogs were getting terribly marked and kept them at home.” – *Adrian C. Latta, farmer.*⁴⁰

Quote 5: “...I saw stretching for miles across the gently rolling...prairie a lately completed barbed-wire fence...It was the first real fence I had ever seen...Men sitting around the general store on Saturday afternoons didn’t like it a bit. During the night a frightful transformation had occurred. Each tightly stretched strand had been cut between each pair of posts...I was speechless...[And yet I must confess that] every time a dog ran afoul of one of those cursed fences and split his noble back from neck to tail, my hatred flamed up against them. I sympathized with the fence cutters, no matter how much I heard them condemned by my elders.” – *Adventures of a Texas Naturalist.*⁴¹



Different styles of barbed wire

Branding

Branding was a method used to mark cattle (cows) in the West. Find branding in this book. Read about the process and record your pros and cons.



Cattle Branding

W	Running W	Y	Hooked Y	/	Broken slash	→	Arrow
W	Long W	Y	Braded Y	\	Broken reverse slash	↗	Broken arrow
⤴	Tumbling right R	Y	Barbed Y	⌒	Quarter circle	⌒	Bow and arrow
⤴	Tumbling left R	X	Forked Y	⌒	Half circle	⌒	Rocking chair
⌒	Reverse R	Yλ	Y up Y down	○	Circle	⌒	Dollar sign
⌒	Crazy R	KM	KM connected	⊙	Double circle	⌒	Anchor
⌒	Crazy reverse R	KKK	Triple K	⌒	Half box	⌒	Broken heart
⌒	Lazy left down R	✳	Triple K connected	□	Box	⌒	Hay hook
⌒	Lazy left up R	—	Bar	┌	Berch	⌒	Key
⌒	Lazy right down R	==	Double bar	△	Triangle	⌒	Spur
⌒	Lazy right up R	—	Broken bar	<	Half diamond	⌒	Stirrup
⌒	Rocking 7	—	Rail	◇	Diamond	⌒	Sunrise
⌒	Swinging 7	==	Double rail	⊠	Diamond and a half	⌒	Horse track
⌒	Flying 7	≡	Stripes	^	Raiter	⌒	Bull head
⌒	Walking 7	/	Slash	^	Open A	⌒	Hat
⌒	Dragging 7	\	Reverse slash	○	Goose egg	⌒	Turkey track
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Sample Cattle Brands

National Forest Service

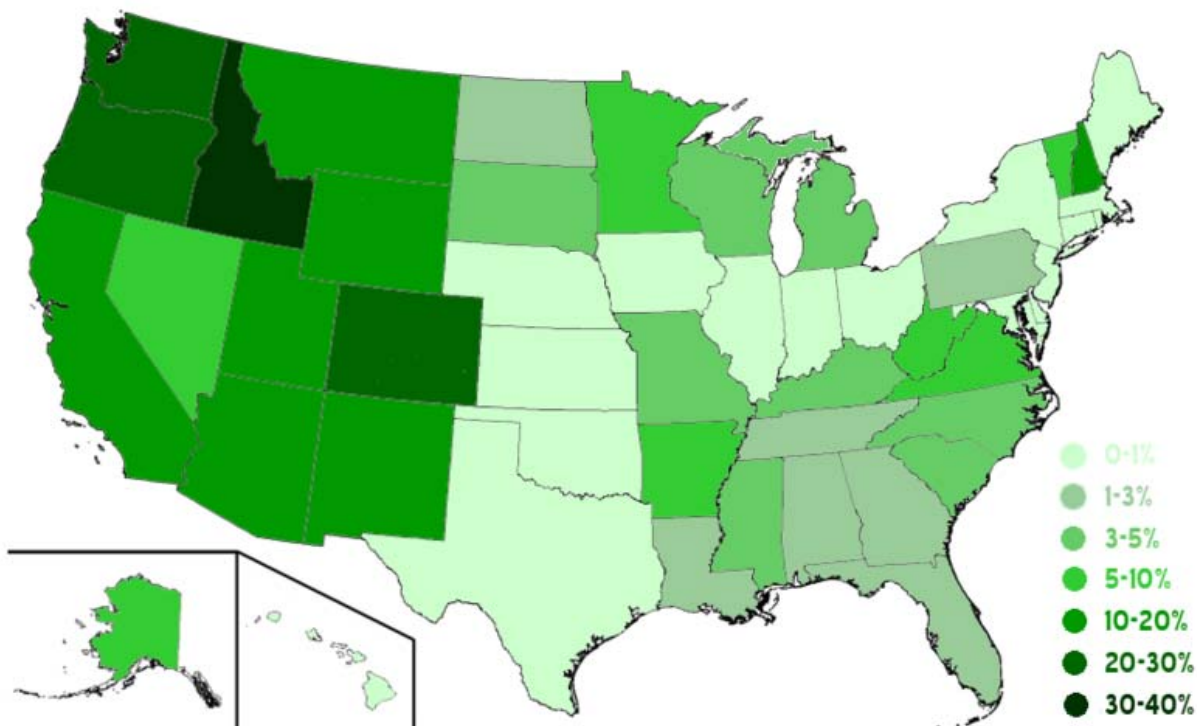
Quote 1: “We deem it highly important that the true condition and wants of the country...and the injuries that may result from the destruction of the forests and the exhaustion of our supplies of timber, should be known in time to provide a remedy before the evils are severely felt...We would therefore respectfully request the passage of a law creating a commission of forestry, to be appointed by the President and Senate, and that it should be required [to make a report detailing a plan for conserving trees, while still providing the country with the needed quantity of lumber.” -- Senate Committee 43:1, 28.⁴²

Quote 2: “As a prospector and miner in the territory now covered by the Nezperce National Forest, I, along with others of my ilk, was resentful of the restrictions imposed upon us by the regulations of the new Bureau of Forestry. We had been accustomed to locating any character of land under our interpretation of the mining laws, cutting timber at will, without reference to the good of the forest, or viewing without alarm the frequent fires destroying timber, watershed cover and range.” -- G.I. Porter.⁴³

Quote 3: “Besides the economical value of timber for construction, fuel and the arts, which is obvious without suggestion, and must increase with the growth of the nation, there are questions of climate that appear to have a close relation to the presence or absence of woodland shade.” -- Senate Committee 43:1, 28.⁴⁴

Quote 4: “All land is to be devoted to its most productive use for the permanent good of the whole people...All the resources of the forest reserves are for use.” – James Wilson, Secretary of Agriculture, 1905.⁴⁵

Quote 5: “The instructions were to look for fires, timber thieves, which were plentiful all along the Great Northern Railway, and to look for squatters and game violators. I sure had my hands full, and then some.” -- Frank F. Liebig, Forest Ranger.⁴⁶



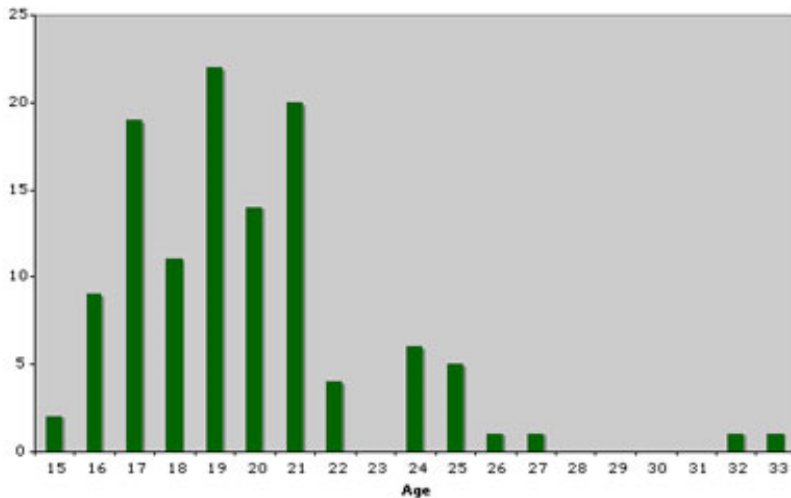
This map shows land owned by the National Forest Services today. Notice what area of the country National Forest Land is concentrated in.

Agricultural Schools

Fact: At the Agricultural College of the State of Michigan (now Michigan State University), classes began on May 14, 1857, with sixty-three students, five faculty and three buildings.⁴⁷

Quote 1: “The State of Michigan has established an agricultural college for instruction in agriculture and the natural sciences connected therewith...[The students] further represent that the course of study is inseparably combined with a system of labor in the institution; that it is its design and policy to afford ample and thorough education of the student physically, morally, and intellectually; to ennoble the calling of agriculture, and teach men to increase the productions of the earth.” – Senate Committee 35:1, 7.⁴⁸

Freshman Age Distribution 1872



Age Distribution of Freshmen, 1872

Fact 2: Enrollment in many of these Agricultural schools was initially limited to white males. Females and Native American and African American males expressed their interest in the school.

Quote 2: “Prof J. C. Holmes,

“Dear sir. I take the liberty of addressing a few words to you respecting the subject to which I have been always interested in it – and hoping that you will answer my simple questions; that is, I wish to ask you, How far must a student be advanced in the studies in order to be admitted a member in the Agricultural college at Lansing; and what is the facilities, and what will it really cost a student to attend one year in that school? And can an Indian of Michigan be permitted to enter (if he was to make an application) providing that he would bear the examination which is required in order to enter the College?”

“Sir, I feel very much interested in the enlightenment and education of the Indians, and for reason I suppose, that I am an Indian myself attending at Ypsilanti Normal school – supported by the Department of the Interior.

“I think it would be excellent idea for a few of my fellow Indian youths to be educated in the same manner as I have, supposing that one or two of the Indian youth would enter in that college, who are now attending school at Grove Hill Seminary the Mission school at Grand Traverse Bay; as I think that some of them would bear the examination which is required to enter the College.

“Very respectfully, A.J. Blackbird,
“Ypsilanti, Michigan, Dec 25th, 1857”⁴⁹

Fact 3: In 1873, the school published a report of what their alumni did after graduation, including the following: Farmers–21, Fruit growers–7, Engineers–4, Pharmacists–4, Mechanics–2, Business Agents–, Teachers–12, Lawyers–6, Clergymen–1, Physician–1, Editor–1, Killed in Battle–2.⁵⁰

Irrigation/Dams

Quote 1: *Interview with Tom Pendley, son of homesteader in Oak Creek Canyon, Arizona.*

Thompson: “[After filing to homestead on this land], when did he start farming the area, or putting in...”

Pendley: “First, it took him two years to establish the water. He knew he had to have water on the property. That’s the only reason this property had not been homesteaded, because where the tunnels are, and people couldn’t figure out how to get water to it. He figured out how to engineer to get the water here. So he worked on that irrigation ditch and the tunnels for two years. He planted his first orchard in 1912.”

Thompson: “So it took from 1910 to 1912 to do all the irrigation, and then he planted then?”

Pendley: “Yeah. In the interim, he did some dry farming. He did some, I guess, short crops like squash and watermelon and stuff like that, that he could do without a lot of water...”

Thompson: “Can you tell me more about the irrigation system your father built?”

Pendley: “Well, it was quite an engineering masterpiece, just the tunnels themselves. One of the tunnels is 125 feet long, and the other one is about 70 feet long, through solid red rock, and they blasted through. The irrigation ditch itself was from where it started, up about a mile. He surveyed it with a rifle, a tripod, and a plumb bob, and he shot from tree to tree to get his grade.”⁵¹



Power house/irrigation system and waterwheel on Pendley Homestead.

Quote 2: “It is well known to all present that agriculture has been maintained in [Utah] by irrigation, and that the construction and maintenance of canals for bringing the mountain-streams across the plains has from the first been a subject of constant care and expense. In 1866 they had 127, 798 acres under irrigation, and the amount expended during one year was \$303, 863.77, or about \$2.73 to the acre [or about \$37 in 2007 money]. All observers agree that the climate is improving under the increasing [variety] of vegetation which this system of cultivation has created. Much less water is need than formerly to produce a given effect, the rain-fall is increasing, and the waters of the Great Salt Lake stand about twelve feet above the old high-water marks, and are still rising.” – Senate Committee 40:2, 293.⁵²

Quote 3: “The diversion of brooks and rivers from their natural channels [through irrigation]...tend to deprive the district originally watered by it of their proper supply, and while on the one side considerable tracts of ground are sometimes drenched with superfluous moisture, on the other, water-courses large enough to drive mills and other machinery may be laid dry and their fish destroyed, [etc.]” – Senate Committee 43:1, 55.⁵³

CLUES

Clue 1: "At the start the cars are rude but cleanly. Plenty of fresh water is provided. Some effort is made, too, to keep the air fresh and the car decent, but this is very difficult. Most of the passengers are little accustomed to ventilation or to cleanly habits. Pipes are lighted, meals are spread in which sausage, cheese, garlic, and sauerkraut form prominent elements, and their mingled odors combine with the smoke of cheap tobacco to render the cars insupportable. Then there are children, and sometimes sick ones;...When [it] stops, laden with its miscellaneous freight, the adults are glad to alight, the children rush eagerly about gathering the oddest mementos of their journey. Bits of wood and iron, stones, oyster shells, and stray twigs [or] leaves, particularly if it be autumn, are proudly distributed about the cars. Occasionally a kitten is captured to the delight of the whole carload. Until it manages to escape, it is petted, fed, put to sleep in the dinner pails, locked in the arms of its friends, and rarely abused." – *Harper's Weekly*, February 10, 1883.⁵⁴

Clue 2:



Clue 3:

"The rest of the morning I spent in studying and reading, till twelve o'clock when I commenced a letter to Mary which I finished and directed soon after dinner but which lies in my drawer now I having forgotten to put it in the mail...Then Foote and I went out hunting. Foote taking an axe along in case we ran over a bear. We went up the river aways and saw a muskrat swimming down the river. Afterwards we saw some tracks of wild turkeys some of which were evidently those of a wounded turkey as there was considerable blood on the snow...We followed it a short distance to a brush pile where we found the turkey which had laiden down to die. We cut off his head with the axe. We took him over to Mr. Williams for a present to the President. The President invited us to come over and help eat him on Tuesday. After Supper I studied my Geometry a while, and then went over to the College to hold a candle while Bush painted the black boards..." - E. W. Granger diary entry Dec 4, 1868⁵⁵

Clue 4:



Clue 5:

There's various hedges that oft have been tried,
And some have done well, it can't be denied.
Dame Nature hath shown us full many a feat,
But now we must say she herself has been beat.
The thorns on the hedges supplanted have been
By the barbs on the wires, so sharp and so keen;
The hedges themselves have grown tedious the while,
Since wires in a twinkling stretch many a mile.
Then hail to the genius of this present age...⁵⁶

Clue 6:

Go to the dam station.

Clue 7:

If you have been to all six stations you are done!!
If you haven't been to all six stations, you have fallen off track.

Name: _____

Class: _____

New Developments in the West – Scavenger Hunt

- Step 1: Match each excerpt to the development that it is describing.
- Step 2: Read the excerpt and the materials at the station.
- Step 3: Use these materials (the excerpt, station materials, and picture) to follow your assigned role.
- Step 4: Take the next excerpt from the envelope at that station and start back at Step 1.

	Pros	Cons	How does this relate to your group?
Agricultural Schools			
Branding			
Railroads			

	Pros	Cons	How does this relate to your group?
Irrigation and Dams			
Barbed Wire			
National Forest Services			

Fact 1: How much more did first class railroad tickets cost than third class tickets cost? _____

Fact 2: Whose barbed wire fence hurt hogs? _____

Fact 3: Which state has the most National Forest land? _____

Fact 4: How many 21-year-old freshmen attended the Agricultural College of the State of Michigan in 1872? _____

Fact 5: How long did it take Pendley to build an irrigation system? _____

Fact 6: What pages in the book refer to branding? _____

Name: _____

Class: _____

New Developments in the West Assessment

1. Overall how did these new developments affect your group? (3-5 sentences)

2. Each group represents a different Western group. After other groups have completed the scavenger hunt, you need to find a member from each group and ask them question 1. Write their responses below.
 - **Chinese Americans**

 - **Native Americans**

 - **African Americans**

 - **Women and Children**

 - **Miners**

 - **Cowboys**

3. Overall, do you think that these six developments affected the West in a positive or negative way? Why? (4-7 sentences)

4. Which of these developments affected the West most positively? Why?

5. Which of these developments affected the West most negatively? Why?

6. Based on what you learned today, do you think that technological developments today affect the world in a positive or negative way? Why? (4-7 sentences)

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Notes

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