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ABSTRACT

One reason the Mormons, who wanted to be left alone, migrated to the Utah territory was its isolation. But that changed in 1869, when the new transcontinental railroad came to Utah. The completion of the transcontinental railroad not only made it easier to transport people and goods across the country, it also put an end to the hard work of thousands of immigrant workers and U.S. citizens who constructed the railroad. Its completion was cause for much celebration, which is why the Golden Spike Ceremony took place. This teacher's packet contains 18 exercises: (1) "How the Transcontinental Railroad Affected Utah"; (2) "Worksheet"; (3) "Reenactment of the Golden Spike Ceremony"; (4) "Script for 4th through 6th Grade"; (5) "Script for 7th through 9th Grade"; (6) "The First Transcontinental Railroad"; (7) "History Page"; (8) "Word Search"; (9) "Word Search Answer Key"; (10) "Worksheet" (for older students); (11) "Worksheet" (for younger students); (12) "Locomotive Operations Page"; (13) "Locomotive Diagram and Worksheet"; (14) "Locomotive Diagram Answer Key"; (15) "Locomotive Crossword Puzzle"; (16) "Answer Key"; (17) "Fun Pages"; and (18) "Pages to Color". (BT)



GOLDEN SPIKE NATIONAL HISTORIC SITE



Teacher's Packet to the Golden Spike National Historic Site

**Golden Spike National Historic Site
U.S. National Park Service
P.O. Box 897
Brigham City, UT 84302
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http://www.nps.gov/gosp/research/teacher_index.html

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ParkNet National Park Service

Golden Spike Teacher's Packet Contents

Hi Teacher:

Thank you for choosing Golden Spike National Historic Site as part of your classroom's curriculum. We are dedicated to helping teachers and other educators around the country, and even the world, share our great story. We hope the materials on our site will assist you in developing classroom lessons and activities that enhance your student's learning opportunities.

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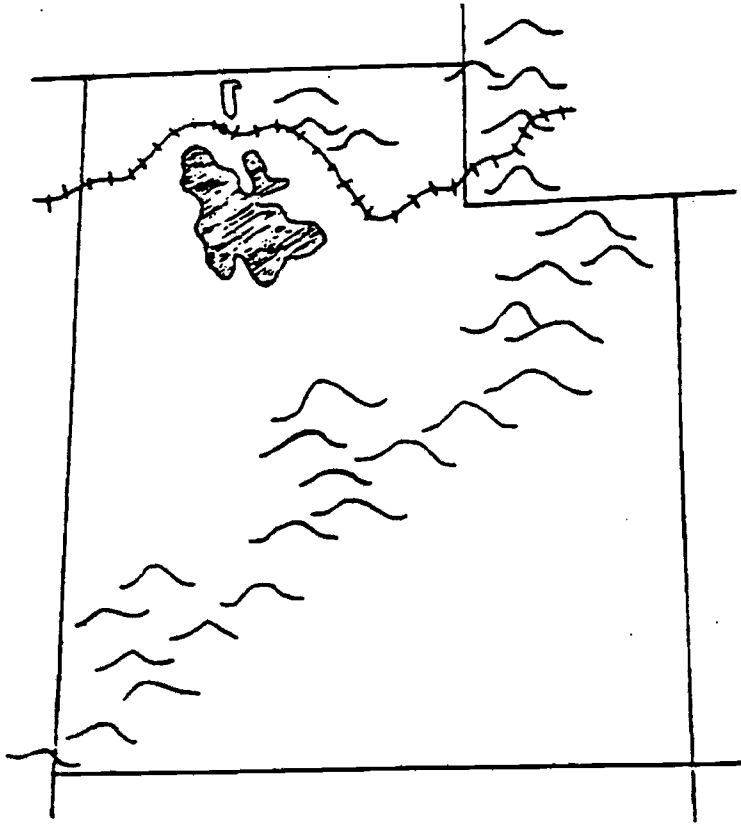
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How the Transcontinental Railroad Affected Utah



Instructions

THEME: When Utah was first settled, it was very isolated. That was one reason why the Mormons came here in the first place. They wanted to be left alone. But they were not alone for long. The railroad came to Utah in 1869, and with it came an end to Utah's isolation.

SUBJECTS: Social Studies, Geography, Language Arts

OBJECTIVES: Students will be able to describe the impact the railroad had on Utah, listing some of the changes the railroad brought.

METHOD: The students will accomplish the learning objectives by using the provided worksheet, and through class discussion.

BACKGROUND: When Utah was first settled, it was very isolated. People came to Utah to live.

Those who came by wagon train, by horse, and by handcarts traveled about eighty days to reach Utah from Missouri. Others came by stage coach. They took only fourteen days to reach Utah from Missouri. Letters and other mail also came to Utah by stage, until the Pony Express was organized.

It is 1000 miles from Salt Lake City to Independence, Missouri. To travel to Independence to purchase supplies, and then travel back to Salt Lake City took a wagon train a whole summer. These wagon trains brought supplies of sugar, soap, tea, hats, shoes, clothes, nails, and bullets to Utah. They also brought many other things that people used, ate, and wore.

All the products made or raised by people living in Utah had to be sold locally, or shipped by wagon train to Missouri or California. This was expensive, and made it difficult for merchants to make any money.

When the first transcontinental railroad was completed it brought many changes to the whole country. One of the changes it brought to Utah was how fast people could travel. Traveling to Utah by rail from Missouri took only three days. The railroad also made it easier to buy and sell goods. The people living in Utah could transport grain, fruit, and other food to the whole country before it spoiled. They could buy supplies like stoves and other equipment from the Eastern market at a lower price because cost of shipping was reduced.

The railroad also caused the mining in Utah to boom. Utah was rich in minerals such as silver, gold, lead, zinc, copper, and coal. But before the railroad, there was no way to ship large amounts of minerals out of Utah. Because of this new booming market for minerals, many people moved to Utah to work in the mines. People came from countries like Greece, Italy, China and Austria. Some came only for a short time, others wanted to live here. This had an impact on the communities, making the Mormons less of a majority, and speeding up the changes already in progress in the local government and school systems.

PROCEDURE: Discuss the information listed in the background with the students. Then discuss the following questions as a class, to help the students start thinking about the affects of the railroad on their lives:

Every day tons and tons of goods come to Utah. Some come by trucks, some come by train, and some come by airplane. How many things are in your schoolroom that had to be transported here from another part of the country or another part of the world? What about your books? What the paper you write on or the pencil you write with? What about the things you eat for school lunch? What about the coal used to heat the school? Would Utah be more or less self-sufficient if it hadn't been for the railroad?

After the discussion hand out the provided worksheet. The students can work on the questions individually, in cooperative groups, or with the whole class under the teacher's direction.

EXTENSION:

* Writing assignment: Imagine yourself living in Utah Territory in 1869. You just received news that the railroad is finally completed. Write a diary entry describing your excitement about the

event. Describe your family's occupation and how you think it will be affected now that the transcontinental railroad passes through the state.

* For younger grades, draw a picture of some of the things people got from the railroad when the railroad was first completed.

EVALUATION: Students can be evaluated on the completeness of the work sheet and or the extensions.

Grades: 1-6

Duration: one class period, two class periods if you do the extension

Group size: any

Setting: classroom

Key vocabulary: isolation - transportation - transcontinental - minerals - supplies - communication - tourists

Sources:

*Discovering Utah, by Nancy D. and John S. McCormick

* Utah! by Willard and Celia Luce

RAILROAD BRINGS CHANGES

1. Would the railroad bring more tourist to Utah? Why or why not?

2. Would the railroad bring more people who wanted to live in Utah?

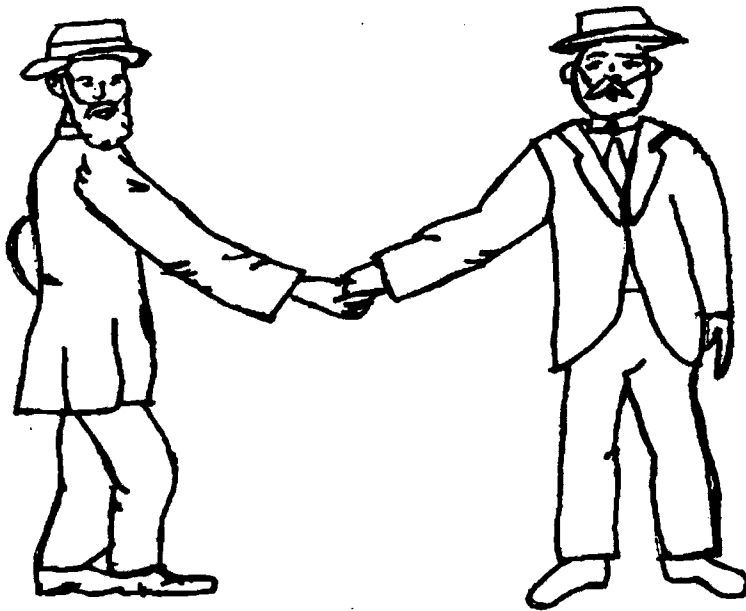
3. Would most of them be Mormons? Why or why not?

4. What kinds of things would the railroad bring for people to buy?

5. What could Utahans sell to people in other places because of the railroad?

6. Would these changes have a good effect on Utah? How?

Reenactment of the Golden Spike Ceremony



Instructions

THEME: The completion of the transcontinental railroad not only made it easier to transport goods and people across the country, it also put an end to the hard work of the thousands of immigrant railroad workers and Americans who constructed the railroad. Its completion was cause for much celebration, that's why the Golden Spike Ceremony took place.

SUBJECTS: Language Arts, History, Drama

OBJECTIVES: To gain an understanding of why there was a celebration after the completion of the railroad.

METHOD: Before preparing the reenactment, the students should understand why there was a celebration. This understanding will come from discussing the reasons why a transcontinental railroad was needed, and also briefly discussing the hardships the men suffered while building it. Then the teacher can assign roles and the students will prepare to reenact the ceremony from 1869.

BACKGROUND: Before the transcontinental railroad was completed, getting from the East to West coast of this country was an arduous task. Traveling and transportation of goods was done by

ocean (on steam ship via the Panama isthmus or on ship around Cape Horn), or across land (by wagon train, stage, etc.). This made it difficult to transport the raw materials from the West to the factories of the East, and likewise, to bring the finished products from the East markets in the West. This obstacle was a great hindrance to a growing country. The completion of the railroad would give everyone reason to celebrate, whether you were a merchant or farmer, miner or factory owner, homesteader or traveler.

Construction of the railroad was also a monumental task. It required the work of more than 20,000 men, working ten hour days, six days a week, over the course of four years. The Central Pacific Railroad (CPRR) hired mostly Chinese and paid them a less than a dollar a day to work that most men would not do for so little. They used black powder to blast their way through the Sierra Nevada Mountains, though the snow drifted in excess of forty feet. They suffered through the alkali deserts of Nevada where the heat was almost unbearable and water was scarce. Near the completion of the railroad they set a record of track laying that is yet to be beaten, ten miles in one day. Though it was eight Irishmen that actually laid the rails, it was the Chinese who built the grade, laid the ties, straightened the rails, and drove in the spikes.

The Union Pacific Railroad (UPRR) hired Americans and many other nationalities, prominent among them were the Irish. Constructing across the flat plains of Nebraska was considerably easier than the Sierra Nevada Mountains that the CPRR suffered through. One problem they ran into was spring flooding. Spring rains and melting snow repeatedly washed out the track. Another factor that slowed the progress of construction was the conflict with the Native Americans who called the Plain their home. They didn't like the railroad coming onto their land bringing settlers and soldiers, so they often tore up the tracks or attacked the workers. The workers themselves could also slow progress by holding strikes, refusing to work until the officials gave them better pay or better working conditions.

So you can see that construction of the railroad was a tremendous undertaking. The workers were separated from their families and friends, and were doing extremely difficult work. They were proud of their work and glad to celebrate the new route which reached from East to West.

PROCEDURE: Discuss with the class the reasons why a transcontinental railroad was needed. Explain that upon its completion many things would be made easier such as travel and transportation of goods, and commerce would be improved. Also discuss why the people who were a part of its construction would have a reason to celebrate.

Now that the students understand why a celebration was held, they will appreciate and understand the celebration. Assign parts and have the students start learning their roles. The students who don't get a speaking part will be members of either the Mormon Band from Salt Lake City, or members of the 21st Infantry Band. After the introduction by the Narrator, first the Mormon Band sings a verse of "I've been Workin' On the Railroad, and then the 21st Infantry Band sings "Battle Hymn of the Republic" (you can substitute other songs that the students may be more familiar with). Players in the band also double as the members of the audience and cheer at the appropriate places.

Note: At Golden Spike NHS a Park Ranger will be present for assistance. However, teachers are to supervise the reenactment.

EXTENSION:

*Use the script that fits the level your students are reading at. **Grade 4-6 - Grade 7-9**

*For an added challenge, have the students memorize their parts.

EVALUATION: Students can be evaluated by their preparation and performance of the reenactment.

NOTE TO TEACHER: It is not actually necessary to come to Golden Spike NHS to do the reenactment, it can be done at your school. However, if your class does come to Golden Spike on a field trip, you will be provided with props such as hats, replica spikes, mauls, etc. The replica locomotives will be provided as a backdrop to your reenactment in the very location that the original ceremony took place (if you come during the time of the year that the locomotives are in operation).

Grades: 4-12

Duration: one class period to introduce the activity and to assign parts, three to four class periods for rehearsal, plus the students may need to devote some free time to rehearsing their parts.

Group size: any

Setting: classroom for discussion and rehearsal, Golden Spike NHS for the actual reenactment (optional).

NOTE TO TEACHERS REGARDING REENACTMENT:

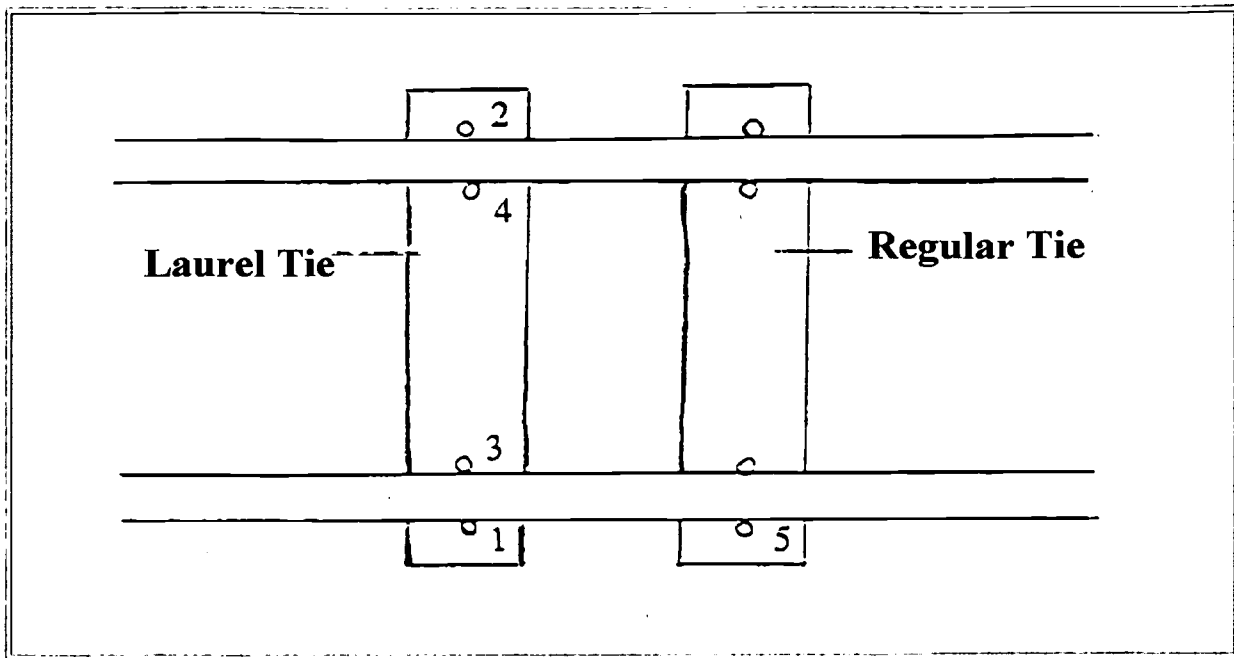
Teachers are encouraged to make copies of the attached script (**grades 4-6** or **grades 7-9**) and assign roles, to both boys and girls, to reenact the skit when they visit Golden Spike NHS. The students do not necessarily have to memorize all of their lines, they can read their scripts. But they should know them well enough that they can keep up without getting lost.

Some props are available on site for the skit such as hats, a telegraph key, spikes, mauls, etc.

Those not assigned a specific role can portray the army band, the Mormon band, and the original audience, cheering at the appropriate times.

STAGE:

The diagram indicates the places where each spike is placed in the pre-drilled holes. Tracks run east to west. If one looks east, the rail on the right is the south rail.



Legend:

Laurel tie

1. Hewes golden spike, "Last Spike" - given to Durant by Harkness
2. Second golden spike, "San Francisco Spike" -given to Durant by Harkness
3. Silver spike, "Nevada Comstock Lode Silver Spike" - given to Stanford by Tittle
4. Combination spike, "Arizona Spike" - given to Stanford by Safford
5. The last spike, "Iron Spike", wired to the telegraph line

*If the class come to Golden Spike during the time the locomotives are in operation, the reenactment will take place between the two locomotives. The "Jupiter" will be on the west and the "119" will be on the east.

"THE LAST SPIKE IS DRIVEN"

A Reenactment Script for the Golden Spike Ceremony

Adapted For Use By School Groups

Grades 4-6

Cast of Characters

Narrator: Telegrapher

Edgar Mills: Sacramento Banker and Master of Ceremonies

Dr. Harkness: Sacramento Newspaper Editor and Publisher

Reverend Todd: Reporter of the Boston Congregationalist

Leland Stanford: President of the Central Pacific Railroad and Ex-Governor of California

Dr. Durant: Vice-President of the Union Pacific Railroad

General Dodge: Union Pacific Railroad Chief Engineer and former Civil War General

Mr. Tritle: U. S. Railroad Commissioner and Candidate for Governor of Nevada

Governor Safford: Governor of the Territory of Arizona

Major Cogswell: 21st Infantry Band Leader

Mormon Band Leader: Leads the Salt Lake City Mormon Band

Railroad Worker: Who drives the last spike

(The Narrator sits at the telegrapher's key and the rest of the cast stands between the two locomotives. The audience quietly murmurs and then becomes quiet as the Narrator begins to speak.)

Narrator: The date is May 10, 1869. The place is Promontory Summit, Utah Territory. It is a happy gathering, awaiting the great moment when a common railroad spike driven into an ordinary tie will join a continent. A gentle breeze blows under an almost cloudless sky. It is 69 degrees in the shade. Above the voices can be heard the sound of the steam locomotives. A polished tie has been placed in its spot by the construction superintendents of the two railroads. Edgar Mills, a rich banker from Sacramento steps

forward, and signals for silence. The drama of men's hopes and dreams begins on this the 10th day of May 1869, and YOU ARE HERE!

(If desired, Major Cogswell and the Mormon Band Leader lead the audience in song at this time. Divide the audience down the center into two equal groups and have each half portray a different band.)

Mills: Ladies and gentlemen, I welcome you. We are gathered here to join the ends of the earth, to join the raw riches of the American West with the finished products of the industrial East. We also meet with mixed feelings; with joy that the work of thousands of men has joined the railroad, and with sorrow we remember the hundreds of men who gave their lives in building the railroad. They finished six years ahead of the time allowed. We are honored to see a number of Pacific Railroad officials here today. We are pleased to have reporters from some of America's great newspapers. The telegrapher, Mr. Shilling, is keeping the entire nation informed of today's events. We are happy to have the soldiers of the 21st U.S. Infantry here with their band, commanded by Major Cogswell. A second band, with their new instruments, is from the Mormon Church in Salt Lake City. Now, to give thanks to God, may I welcome Reverend Todd from Massachusetts.

(Reverend Todd comes forward. Todd and Mills shake hands.)

Narrator: *(Tapping the key as he speaks.)* Bulletin! Almost ready. Hats off! Prayer is being offered.

Todd: Let us pray. *(Everyone stands quietly for one moment of silence.)* Amen.

Narrator: *(Tapping the key as he speaks.)* Bulletin! We have got done praying. The spike is about to be presented.

(Reverend Todd steps back and Mills steps forward)

Mills: Thank you Reverend Todd. Now I present Dr. Harkness from Sacramento, who will give to Dr. Durant, Vice-President of the Union Pacific, two railroad spikes. Dr. Durant will then place these spikes in holes already made in the polished laurel wood tie *(Mills points in the direction of the tie)*. Ladies and gentlemen, these are not every day spikes, these are GOLDEN SPIKES MADE FROM PURE CALIFORNIA GOLD! *(The audience Oohs and Aahs)*. Dr. Harkness...

(Harkness steps forward and shakes hands with Mills as audience cheers.)

Harkness: Mr. President: The last rail needed to complete the greatest railroad of the world is about to be laid; the last spike needed to join the Atlantic and Pacific is about to be driven. The East and the West have come together. California, where the Pacific Railroad was begun wants to express her appreciation. From her mines of gold she has

given a spike, and from her forest she gives the last tie. With them accept the hopes and wishes of her people to the success of your railroad.

(The audience cheers. Harkness gives the spikes to Durant who places them in the prepared holes in the laurel tie, at the outside of each rail.)

Mills: Thank you, Mr. Harkness and Dr. Durant. Now we welcome the gift of two other spikes. One made of silver from Nevada, given by Mr. Tritle (*Tritle bows*), a candidate for governor of that new state. A spike of iron, silver, and gold given by Governor Safford (*Safford bows*), the new governor of the Territory of Arizona. Both spikes will be given to Governor Stanford President of the Central Pacific Railroad.

Mr. Tritle: To the iron of the East and the gold of the West, Nevada adds her silver spike to span the continent and wed the oceans.

(Audience cheers. Tritle shakes hands with Stanford and gives him the spike.)

Governor Safford: Arizona presents her gift to the railroad that has banded the continent and made a new pathway to commerce.

(Audience cheers. Safford shakes hands with Stanford and gives him the spike.)

(Stanford raises the two spikes into the air, showing them to the audience. Then he places them in the holes of the laurel tie, on the inside of the rails.)

Mills: Now Friends, I present a man of vision and courage. Ladies and gentlemen, the president of the Central Pacific Railroad, Governor Stanford.

(Audience applauds and cheers.)

Stanford: Gentlemen: The Pacific Railroad Companies accept with pride and satisfaction these golden and silver spikes. (*While Stanford speaks Durant gets a severe headache, suddenly shows it, and steps over to whisper in Mill's ear*). The day is not far away when THREE tracks will be necessary to provide transportation for commerce and travel across the continent (*people murmur in disbelief*). Now, gentlemen, with your help we will lay the last tie, the last rail, and drive the last spike.

(Audience cheers.)

Mills: Thank you, Governor Stanford, for your remarks. We regret that Dr. Durant has asked not to speak. In his place General Dodge, Chief Engineer, will now speak for the Union Pacific. General Dodge...

(As Dodge come forward, he hands a silver maul to Mills and shakes his hand.)

Dodge: Gentlemen, Senator Benton said that some day a giant statue of Columbus should be built on the highest peak of the Rocky Mountains, pointing westward to the great route across the continent. You have made this a fact! THIS IS THE WAY TO INDIA! (*He raises his hand with the spike and points to the West*).

(Excitement grows and cheers increase).

Mills: Thank you, General Dodge. Ladies and gentlemen, we have just about reached that moment for which you and the nation have been waiting for - the driving of the last spike. This silver plated maul donated by Mr. Coe, president of the Union Express Company, will now be used by Governor Stanford and Mr. Durant to make a few taps on the gold and silver spikes.

(Mills gives the silver maul to Governor Stanford who makes a few taps. Stanford then hands the maul to Durant who also taps the spikes).

Mills: At this point we should explain that the last spike is a regular iron spike which can be driven with a maul. Both the spike and the maul are wired to the transcontinental telegraph wire so that the entire nation can hear the blows as the spike is driven. Now ladies and gentlemen, the time has arrived. As Mr. Shilling, the telegrapher, gives the signal over the wire, that the spike is driven, bells and whistles will sound across the nation. Dr. Durant and Governor Stanford will now share the honor of driving the last spike in the Pacific Railroad. Gentlemen, are you ready?

Stanford and Durant: *(In unison).* We are ready!

Narrator: *(Tapping the key as he speaks).* Bulletin! All ready now. The spike will soon be driven. The signal will be three dots for the start of the blows.

(Stanford swings the maul and misses the spike. Everyone laughs. Stanford hands the maul to Durant).

(Durant takes the maul, swings and misses. Everyone laughs and cheers).

Durant: Will someone lend a hand? Here, you try it! *(The railroad worker steps forward and takes the maul from Durant. With a few swings the iron spike is driven).*

Narrator: *(Tapping the key as he speaks).* Promontory to the country. Bulletin: D-O-N-E Done!

(The audience cheers especially loud, exclaiming "it is finished! and "it is driven!").

Durant: Let's give three cheers for the Central Pacific Railroad! Hip, hip... *(everyone: HURRAY!).* Hip, hip... *(everyone: HURRAY!).* Hip, hip... *(everyone: HURRAY!).*

Stanford: Let's give three cheers for the Central Pacific Railroad! Hip, hip... (*everyone: HURRAY!*). Hip, hip... (*everyone: HURRAY!*). Hip, hip... (*everyone: HURRAY!*).

"THE LAST SPIKE IS DRIVEN"

A Reenactment Script for the Golden Spike Ceremony

Adapted For Use By School Groups

Grades 7-9

Cast of Characters

Narrator: Telegrapher, Mr. W. N. Shilling

Edgar Mills: Sacramento Banker and Master of Ceremonies

Dr. H. W. Harkness: Sacramento Newspaper Editor and Publisher

Reverend Dr. John Todd: Reporter of the Boston Congregationalist

Leland Stanford: President of the Central Pacific Railroad and Ex-Governor of California

Dr. Thomas C. Durant: Vice-President of the Union Pacific Railroad

General Grenville M. Dodge: Union Pacific Railroad Chief Engineer and former Civil War General

Mr. F. A. Tritle: U. S. Railroad Commissioner and Candidate for Governor of Nevada

Governor A. P. K. Safford: Governor of the Territory of Arizona

Major Milton Cogswell: 21st Infantry Band Leader

Mormon Band Leader: Leads the Salt Lake City Mormon Band

Railroad Worker: Who drives the last spike

(The Narrator sits at the telegrapher's key and the rest of the cast stands between the two locomotives. The audience quietly murmurs and then becomes quiet as the Narrator begins to speak.)

Narrator: The date is May 10, 1869. The location is Promontory Summit, Utah Territory - an unlikely place for the completion of the Pacific Railroad. The gathering is both festive and anxious, awaiting that moment of miracle when a common railroad spike driven into an ordinary tie will link a continent. A gentle breeze blows under an almost cloudless sky. The thermometer in the shade registers 69 degrees. Above the babble of

voices can be heard the hissing of the steam locomotives. A polished tie has been placed in its ceremonial position by the construction superintendents of the two railroads. Then Edgar Mills, a rich banker from Sacramento steps forward, and signals for silence. The drama of men's hopes, prayers and dreams begins on this the 10th day of May, 1869, and YOU ARE HERE!

(If desired, Major Cogswell and the Mormon Band Leader lead the audience in song at this time. Divide the audience down the center into two equal groups and have each half portray a different band.)

Mills: Ladies and gentlemen, in behalf of the officials of both railroads, I bid you welcome. We are assembled here to link the ends of the earth, to complete a new and shorter route between Europe and the Orient, and to join the raw riches of the American West with the finished products of the industrial East. We are also met today with mixed emotions; with joy that the brains, the sweat, and the muscle of thousands of men have joined together this great adventure under the guidance of Almighty God. It is also with profound sorrow we remember and pay respect to the hundreds of men who gave their lives in building the railroad that you and I might share this moment. It is noteworthy that this Pacific railroad has been completed six years ahead of the time allotted for its construction. We are honored to see a number of Pacific Railroad officials in addition to those taking part in the ceremony. We are pleased to have reporters from some of America's great newspapers. Of utmost importance is the telegrapher, who is keeping the entire nation informed of these proceedings as they happen. He is Mr. W. N. Shilling, Western Union operator from the Ogden, Utah office. We take pride in the presence of the battalion of the 21st U.S. Infantry with their Regimental Band, under the command of Major Milton Cogswell. A second band, with their new instruments, is from the Mormon Church Tenth Ward in Salt Lake City. Now, to give thanks to our Creator, may I introduce Reverend Dr. John Todd of Pittsfield, Massachusetts.

(Reverend Todd comes forward. Todd and Mills shake hands.)

Narrator: *(Tapping the key as he speaks.)* Bulletin! Almost ready. Hats off! Prayer is being offered.

Todd: Let us pray. *(Everyone stands quietly for one moment of silence.)* Amen.

Narrator: *(Tapping the key as he speaks.)* Bulletin! We have got done praying. The spike is about to be presented.

(Reverend Todd steps back and Mills steps forward)

Mills: Thank you Reverend Todd. Now it is my pleasure to introduce a fellow resident of Sacramento, Dr. H. W. Harkness from Sacramento, who will present to Vice President Thomas C. Durant of the Union Pacific, two railroad spikes. Dr. Durant will then place these spikes in holes already made in the polished laurel wood tie *(Mills points in the direction of the tie)*. Ladies and gentlemen, these two spikes are no ordinary spikes,

Ladies and gentlemen, these are GOLDEN SPIKES
MADE FROM PURE CALIFORNIA GOLD! (*The audience Oohs and Aahs*). Dr.
Harkness...

(Harkness steps forward and shakes hands with Mills as audience applauds).

Harkness: Mr. President: The last rail needed to complete the greatest railroad enterprize of the world is about to be laid; the last spike needed to unite the Atlantic and Pacific by a new line of travel and commerce is about to be driven. The East and the West have come together. California, where the Pacific Railroad was begun wants to express her appreciation. From her mines of gold she has given a spike, and from her laurel woods she has hewn a tie. With them accept the hopes and wishes of her people to the success of your enterprise.

(The audience applauds. Harkness gives the spikes to Durant who places them in the prepared holes in the laurel tie, at the outside of each rail.)

Mills: Thank you, Dr. Harkness and Dr. Durant. It is my pleasure at this time to acknowledge the presentation of two other spikes of precious metal - a silver one from the state of Nevada, presented by Mr. F. A. Tritle (*Tritle bows*), a U. S. Railroad Commisioner and candidate for governor of that great new state. A spike of iron, silver, and gold presented by the Honorable Anson P. K. Safford (*Safford bows*), the new appointed governor of the Territory of Arizona. Both spikes will be given to Governor Leland Stanford, President of the Central Pacific Railroad.

Mr. Tritle: To the iron of the East and the gold of the West, Nevada adds her link of silver to span the continent and wed the oceans.

(Audience cheers. Tritle shakes hands with Stanford and gives him the spike).

Governor Safford: Ribbed with iron, clad in silver and crowned with gold, Arizona presents her offering to the enterprize that has banded the continent and dictated the pathway to commerce.

(Audience cheers. Safford shakes hands with Stanford and gives him the spike.)

(Stanford raises the two spikes into the air, showing them to the audience. Then he places them in the holes of the laurel tie, on the inside of the rails.)

Mills: Now Friends, it is my honor to present a man of vision and courage. Ladies and gentlemen, the president of the Central Pacific Railroad, Governor Leland Stanford.

(Audience applauds and cheers.)

Stanford: Gentlemen: The Pacific Railroad Companies accept with pride and satisfaction these golden and silver spikes tokens to this great railroad that is so important to our

nation. (*While Stanford speaks Durant gets a severe headache, suddenly shows it, and steps over to Mills and whispers in his ear*). The day is not far distant when THREE tracks will be necessary to provide transportation for commerce and travel across the continent (*people murmur in disbelief*). Now, gentlemen, with your assistance we will proceed to lay the last tie, the last rail, and drive the last spike.

(Audience cheers).

Mills: Thank you, Governor Stanford, for your remarks. We regret that Dr. Durant has asked to be excused from speaking (*Durant smiles weakly and waves a hand to the audience*). In his place General Grenville M. Dodge, Chief Engineer, will now represent the Union Pacific with a few remarks. General Dodge...

(As Dodge come forward, he hands a silver maul to Mills and shakes his hand).

Dodge: Gentlemen, Senator Benton proposed that some day a giant statue of Columbus should be built on the highest peak of the Rocky Mountains, pointing westward to the great route across the continent. You have made this a fact!
THIS IS THE WAY TO INDIA! (*He raises his hand with the spike and points to the West*).

(Excitement grows and cheers increase).

Mills: Thank you, General Dodge. Ladies and gentlemen, we have just about reached that moment for which you and the nation have been waiting - the driving of the last spike. However, a final presentation in the form of this silver plated spike maul is a gift from Mr. L. W. Coe, President of the Union Express Company. Governor Stanford and Mr. Durant will now make a few taps with it on the gold and silver spikes.

(Mills gives the silver maul to Governor Stanford who makes a few taps. Stanford then hands the maul to Durant who also taps the spikes).

Mills: At this point we should explain that the last spike is a regular iron spike which can be driven with a maul. Both the spike and the maul are wired to the transcontinental telegraph wire so that the entire nation can hear the blows as the spike is driven. Now ladies and gentlemen, the moment has arrived. As Mr. Shilling, the telegrapher, gives the signal over the wire, announcing that the last spike is driven, bells and whistles will sound across the nation. Dr. Durant and Governor Stanford will now share the honor of driving the last spike in the Pacific Railroad. Gentlemen, are you ready?

Stanford and Durant: (*In unison*). We are ready!

Narrator: (*Tapping the key as he speaks*). Bulletin! All ready now. The spike will soon be driven. The signal will be three dots for the start of the blows.

(Stanford swings the maul and misses the spike. Everyone laughs. Stanford hands the maul to Durant).

(Durant takes the maul, swings and misses, much to the merriment of the group).

Durant: Will someone lend a hand? Here, you try it! *(The railroad worker steps forward and takes the maul from Durant. With a few swings the iron spike is driven).*

Narrator: *(Tapping the key as he speaks).* Promontory to the country. Bulletin: D-O-N-E Done!

(The audience cheers especially loud, exclaiming "it is finished! and "it is driven!").

Durant: Let's give three cheers for the Central Pacific Railroad! Hip, hip... *(everyone: HURRAY!).* Hip, hip... *(everyone: HURRAY!).* Hip, hip... *(everyone: HURRAY!).*

Stanford: Let's give three cheers for the Central Pacific Railroad! Hip, hip... *(everyone: HURRAY!).* Hip, hip... *(everyone: HURRAY!).* Hip, hip... *(everyone: HURRAY!).*

Mills: Mr. Shillings, send this telegram: General U. S. Grant, President of the United States, Washington, D.C. Sir: We have the honor to report the last rail laid and the last spike driven. The Pacific Railroad is finished.

Narrator: At this moment one era ended and another began. The golden spike became a symbol of hope for a better way of life. Thank you, ladies and gentlemen, for being with us today.

The First Transcontinental or Pacific Railroad



The tunnel of the Central Pacific

Instructions

THEME: The history of the railroad is an interesting one. These are many important people who organized the railroad, and many obstacles they and their employees (the railroad workers) had to overcome.

SUBJECTS: Social Studies, Art, Spelling, Language Arts, Geography, Physical Education.

OBJECTIVES: Students will be able to name some of the railroad officials and list some construction feats of each railroad.

METHOD: The students will accomplish the learning objectives by first discussing the background information with the teacher. Then the students can get some exercise by doing the activity outlined below, the worksheet, or any combination you wish to use.

BACKGROUND: This information is attached as a worksheet or can be found at <http://www.nps.gov/gosp/research/linkpage.html>

PROCEDURE: Either read the background information on the web site or make copies of it and hand it out. It contains the information needed for the worksheet that accompany this activity.

If you wish to do an active activity, you must convey some information about the hardships of construction to the students. First, explain that for the Chinese of the Central Pacific the hardest construction was found in the Sierra Nevada Mountains. They had to build fifteen tunnels through solid granite, causing them to toil in the mountains for two years, constructing only 39 miles of

track.

The Union Pacific had problems too, in the plains of Nebraska. They had to cross many streams and rivers, and in the spring when there were a lot of floods, the track kept getting washed away. So they had to back and reconstruct. They also had to reconstruct the track that the Native Americans (American Indians) tore up. While trying to protect their land from encroachment.

Once the student understand this information, split the class into two teams and explain the rules of this game:

- The teams start on two different ends of the field and race toward each other.

-The Central Pacific team must make human bridges all the way to the finish in the center (see illustration at top of page). The first kids grasp hands in the air. The next kids go under the bridge and do the same, making the tunnel longer. They follow this process until all the kids are a part of the tunnel. Then, the kids who are at the back go through the tunnel to the front, and then grasp hands and add to the tunnel. They continue this process until the tunnel reaches the finish line.

-The team of the Union Pacific forms a train by standing in a single column line with each person putting their hands on the shoulders of the person in front of them. The leader guides the train in first taking five steps forward and then two steps back. They continue this until the leader reaches the finish line.

Hopefully the Union Pacific team will win. This will demonstrate to the class why the Union Pacific was able to build more miles of track than the Central Pacific, because the Central Pacific toiled in the mountains for so long. Explain this to the class after the game is completed.

EXTENSION:

*Use any combination of worksheet and game.

*For upper grades, an essay or oral report can be assigned. Have the students each choose one of the subjects underlined on the background information page ("The First Transcontinental or Pacific Railroad") that interests them. The essay should be 1 to 5 pages long (you determine the length) and should describe the importance of the chosen topic to the construction of the transcontinental railroad.

EVALUATION: The students can be evaluated on the completion of the worksheets, and on their understanding of why the Union Pacific built more track than the Central Pacific.

Grades: 1-7

Duration: one to two class periods

Group size: any

HISTORY OF THE FIRST TRANSCONTINENTAL OR PACIFIC RAILROAD

In the 1860s a Railroad was planned that would tie the West Coast to the rest of the United States, boost trade, greatly shorten travel time and allow the army to control American Indians unhappy with western expansion. Theodore Judah, a young engineer, surveyed a route over the Sierra Nevada Mountains of California and persuaded some wealthy Sacramento merchants to form the Central Pacific Railroad in 1861. These Sacramento merchants became known as the Big Four of the Central Pacific Railroad: Leland Stanford, Collis Huntington, Charles Crocker and Mark Hopkins. Stanford became president, Huntington vice-president, Crocker field manager and Hopkins treasurer of the Central Pacific Railroad.

In 1862 Congress passed the Railroad Act, which was signed by President Lincoln. This Act established the Union Pacific Railroad. Thomas Durant became the vice-president and active head of this railroad. Oaks Ames became the principal financial backer during the construction years.

The Central Pacific started building railroad from Sacramento, California in January, 1863, and the Union Pacific started building from Omaha, Nebraska in December, 1863. Though construction officially started in 1863, it wasn't until 1865 that the companies started building track in earnest.

After building a few miles of track, the Central Pacific ran into the Sierra Nevada Mountains which greatly slowed construction. Most of the supplies and equipment for the Central Pacific had to be shipped around the Cape Horn at the tip of South America. This meant that if they ran out of something, like iron rails, they had to order it from the East and wait from three to seven months or longer for it to be shipped to them. Because workmen kept disappearing to the gold and silver mines, the Central Pacific hired Chinese laborers to build their part of the Railroad. Beginning in 1865 it took the Central Pacific three long years to build track through the Sierra Nevada Mountains. By 1868 they were through the Mountains and building railroad across the Great Basin country of Nevada. This was Paiute and Shoshone Indian country and the Central Pacific offered the American Indians jobs working on the railroad. Also to reduce conflict with the American Indians James Strobridge, the construction superintendent of the Central Pacific, gave them free rides on the train. The Central Pacific built track through California, Nevada and into Utah Territory.

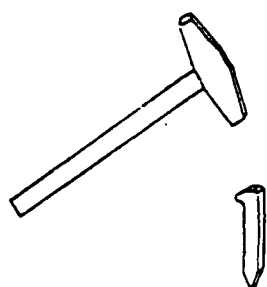
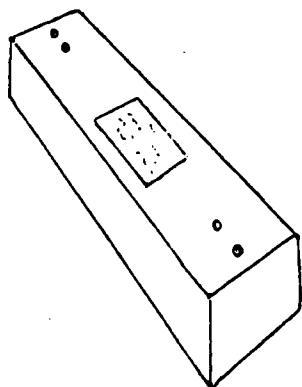
The Civil War slowed construction of the Union Pacific, but after the war ended in 1865, the Union Pacific began to build railroad at a fast pace from Omaha across the flat ground of Nebraska. Many of the Union Pacific Railroad workers were Irishmen who had served as soldiers in the Civil War. Jack Casement supervised the Union Pacific construction crews and Grenville Dodge was the chief engineer. The Union Pacific workmen ran into large Buffalo herds which they used as a source of food. They also had many confrontations with angry Sioux, Cheyenne and Arapaho Indian warriors. These warriors often tore up the track of the Union Pacific. Their track was also washed out by spring floods on many occasions. This slowed the construction of the Union Pacific

because they had to go back and repair the track. The Union Pacific built track through Nebraska, Wyoming and into Utah Territory.

In 1869 the two companies decided that they would join their track at a place called Promontory Summit, Utah. This place is located on the north side of the Great Salt Lake. Just before completion of the Railroad the Central Pacific set a record 10 miles of track laid in one day, a record that has never been surpassed by man or machine.

At the celebration held on May 10th, 1869 there were four precious metal spikes used to commemorate the completion of the first transcontinental railroad. It was a momentous occasion and a major turning point in American history.

WORD SEARCH WORKSHEET



W	P	T	R	V	E	X	A	I	B	H	G	S	X	T	R	O
E	R	R	N	W	X	O	H	S	I	E	A	C	T	Y	I	W
P	O	E	U	D	K	W	E	N	G	I	N	E	E	R	E	M
F	E	S	G	I	O	L	I	E	F	M	A	P	R	R	T	A
G	H	T	C	I	S	T	S	A	O	R	J	W	D	P	O	U
K	J	L	O	N	T	R	C	O	U	Q	U	U	O	Z	I	L
W	D	E	A	G	R	A	D	E	R	S	C	F	D	G	L	F
R	T	S	G	J	R	C	D	E	R	V	E	O	G	A	I	A
T	R	A	B	R	S	K	E	E	S	T	E	F	E	R	H	R
S	P	I	K	E	T	L	E	W	S	J	L	O	E	Y	I	Y
E	Y	R	T	E	S	A	O	K	S	T	I	M	H	H	O	L
H	S	T	R	E	M	Y	N	N	O	F	A	B	B	C	O	P
W	Z	E	G	F	A	E	L	M	O	N	E	N	E	T	T	A
A	F	I	G	J	R	R	P	O	W	C	T	R	F	M	O	W
W	A	F	W	F	I	S	H	P	L	A	T	E	I	O	B	X
Q	T	I	E	W	W	X	A	T	T	L	A	M	L	T	R	A
A	T	R	A	E	C	X	O	W	T	P	G	S	L	T	A	D
U	G	E	O	S	U	R	V	E	Y	O	R	S	S	O	K	U
P	O	B	A	R	T	L	P	S	W	T	A	L	E	P	E	R
J	A	O	O	W	S	V	L	S	X	R	D	W	E	W	M	A
R	Y	X	G	P	T	I	U	W	E	X	E	F	A	L	A	N
O	R	J	O	N	A	I	D	W	O	I	S	R	O	L	N	T
S	T	R	O	R	P	A	R	S	A	M	B	A	N	R	D	A

Directions: Hidden in this puzzle are key words associated with Pacific Railroad history. The words are hidden across, up, down, and diagonally. The words can also be found underlined in the sentences below. See if you can locate them all.

People of the First Transcontinental Railroad

1. Theodore Judah was an early promoter of the Pacific Railroad and surveyed a route through the Sierra Nevada Mountains.
2. Leland Stanford was one of the Big Four, and officer of the Central Pacific Railroad.
3. The Chief Engineer of the Union Pacific Railroad was Grenville Dodge.
4. T. C. Durant was Vice President of the Union Pacific Railroad.

Building the Pacific Railroad

1. Spike drivers used a maul to drive a spike into a tie.
2. Surveyors outlined the route for the Railroad.
3. Graders leveled the road bed for the tracklayers.
4. Fills, cuts and trestles were used to level the grade for the railroad.

Railroad Workers

1. The engineer drove the locomotive.
2. Shoveling fuel into the firebox was the job of the fireman.
3. The brakeman coupled cars together with a link and pin.

WORD SEARCH

W	P	T	R	V	E	X	A	I	B	H	G	S	X	T	R	O
E	R	R	N	W	X	O	H	S	I	E	A	C	T	Y	I	W
P	O	E	U	D	K	W	E	N	G	I	N	E	E	R	E	M
F	E	S	G	I	O	L	I	E	F	M	A	P	R	R	T	A
G	H	T	C	I	S	T	S	A	O	R	J	W	D	P	O	L
K	J	L	O	N	T	R	C	O	U	Q	U	U	D	Z	I	L
W	D	E	A	G	R	A	D	E	R	S	C	F	D	G	L	F
R	T	S	G	J	R	C	D	E	R	V	E	O	G	A	I	A
T	R	A	B	R	S	K	E	E	S	T	E	F	E	R	H	R
S	P	I	K	E	T	L	E	W	S	J	L	O	E	Y	I	Y
E	Y	R	T	E	S	A	O	K	S	T	I	M	H	H	O	L
H	S	T	R	E	M	Y	N	N	O	F	A	B	B	C	O	P
W	Z	E	G	F	A	E	L	M	O	N	E	N	E	T	T	A
A	F	I	G	J	R	R	P	O	W	C	T	R	F	M	O	W
W	A	F	W	F	I	S	H	P	L	A	T	E	I	O	B	X
Q	T	I	E	W	W	X	A	T	T	L	A	M	L	T	R	A
A	T	R	A	E	C	X	O	W	T	P	G	S	L	T	A	D
U	G	E	O	S	U	R	V	E	Y	O	R	S	S	O	K	U
P	O	B	A	R	T	L	P	S	W	T	A	L	E	P	E	M
J	A	O	O	W	S	V	L	S	X	R	D	W	E	W	M	A
R	Y	X	G	P	T	I	U	W	E	X	E	F	A	L	A	N
O	R	J	O	N	A	I	D	W	O	I	S	R	O	L	N	T
S	T	R	O	R	P	A	R	S	A	M	B	A	N	R	D	A

Name _____

Date _____

Golden Spike National Historic Site: Worksheet

1- What United States President signed the Railroad Act of 1862; that made the building of the Transcontinental possible?

2- What two railroad companies were involved in the building of the Transcontinental Railroad?

3- Name two ethnic groups that worked on the Transcontinental Railroad?

4- What types of obstacles did railroad workers have to face?

5- What record did the Central Pacific Railroad workers set in laying track in one day?

6- On what month, day, and year was the Transcontinental Railroad completed?

7- What are the names of the two locomotives that were facing each other at the "Last Spike" ceremony?

8- What type of fuel source did each of the two locomotives in question 7 use?

9- What type of material was the "Last Spike" made of?

10- Name at least two important people that were present at the "Last Spike" ceremony?

11- What word did the telegrapher spell out to tell the country that the Transcontinental Railroad was completed?

12- What was the significance of the completion of the Transcontinental Railroad?

13- How was Utah changed by the completion of the Transcontinental Railroad?

14- How were the Native Americans effected by the Transcontinental Railroad?

15- Name some of the birds and plants you see while at Promontory?

16- What women were known to have worked on the grading of the Transcontinental Railroad?

17- What tribe of Native Americans were used to help keep security on the Union Pacific Railroad?

18- What ethnic group was hung in baskets over cliffs to build a road bed?

19- How was the Buffalo effected by the Transcontinental Railroad?

Name _____

Date _____

Golden Spike National Historic Site: Worksheet

Where did the Jupiter and 119 meet?

- A) Promontory Point B) Ogden
- C) Corinne D) Promontory Summit

Where did the Central Pacific start from?

- A) San Francisco B) Sacramento
- C) Portland D) Omaha

Where did the Union Pacific start from?

- A) Omaha B) New York
- C) Oakland D) San Francisco

When was the railroad completed?

- A) 1896 B) 1869
- C) 1863 D) 1836

T or F: There were 4 precious metal spikes presented at the ceremony.

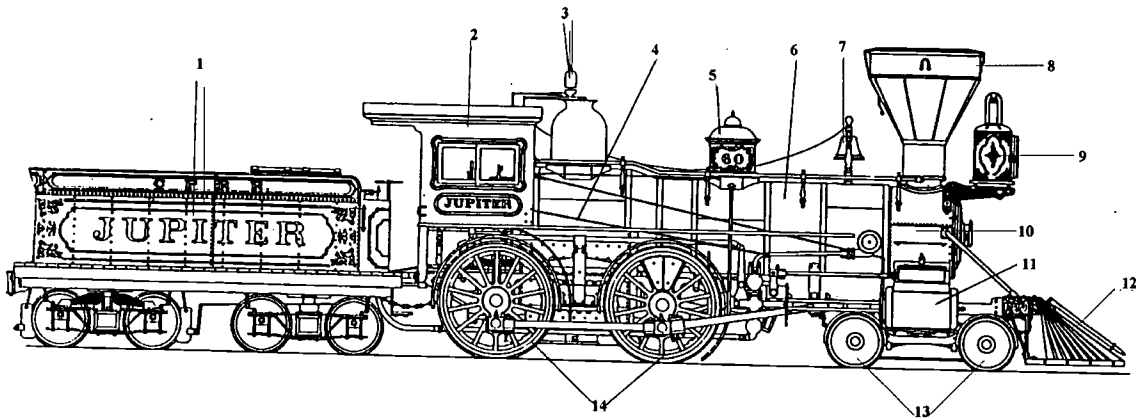
T or F: Leland Stratford was the President of the Central Pacific Railroad.

The Operation of the Steam Locomotive

On a steam locomotive the pilot was used to prevent anything on the tracks from getting under the wheels and derailing the locomotive. The smokebox was located directly below the smokestack. The boiler, the core of the locomotive, was the large tube located directly behind the smokebox extending all the way back to the firebox. The firebox was located directly in front of the cab. A fire was started in the firebox. This would heat tubes in the boiler changing water to steam. Smoke from the burning fuel would collect in the smokebox and be released through the smokestack. The bell and the sand dome are located on top of the boiler. The fireman would ring the bell to warn anyone at a railroad crosswalk. The engineer could release sand from the sand dome through brass pipes to the rails to give a starting locomotive traction or to slow down when coming to a stop. The covered cab was the place where the engineer and fireman operated the locomotive. The driving wheels were the big wheels that moved the locomotive. The piston, located above the leading truck wheels, pushed the driving wheels. The leading truck included four wheels at the front of the locomotive that turned on a swivel to follow the track. The tender was the car attached to the rear of the locomotive. The kerosene headlight was located in front of the smokestack so that the engineer could see ahead when he operated the locomotive at night.

The engineer was the boss of the locomotive. He was one who drove the train. The fireman was the one who shoveled fuel to the firebox to keep it burning and hot.

Locomotive Worksheet



Identify Parts of the locomotive with the following words:

Pilot - Smokestack - Sand Dome - Cab - Piston

Smokebox - Bell - Firebox - Tender - Leading Truck

Headlight - Boiler - Whistle - Driving Wheels

Locomotive Worksheet Answers

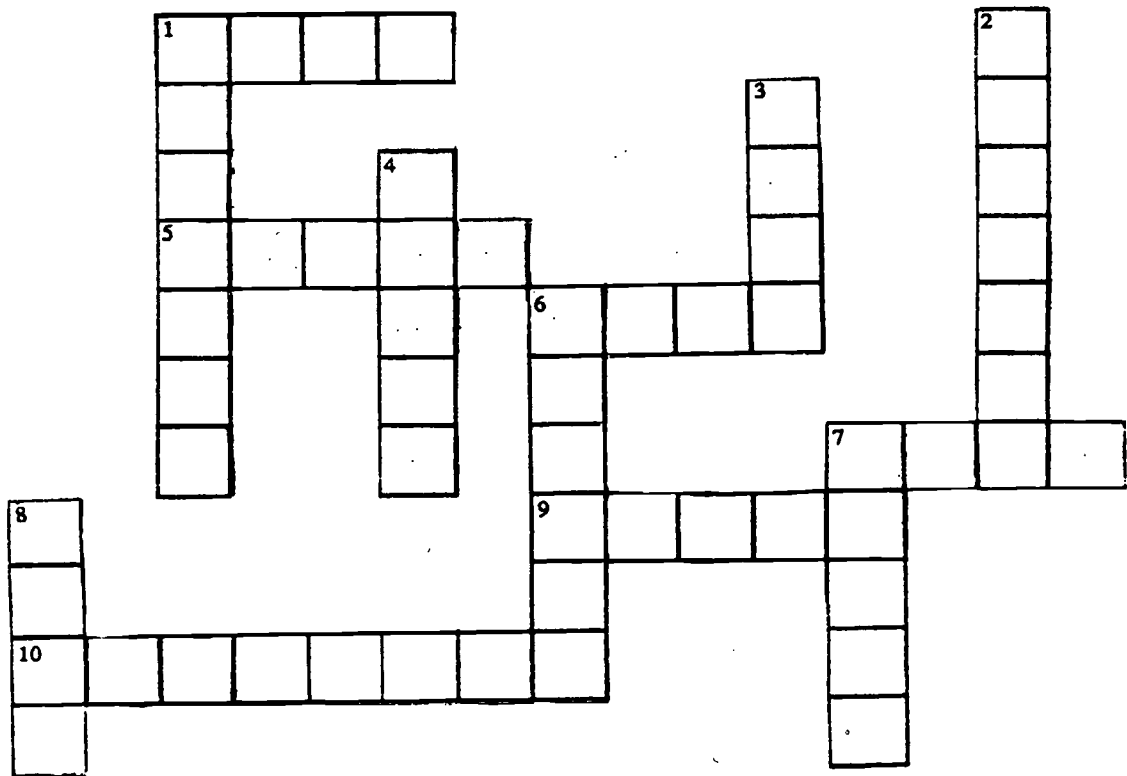
1. Tender
2. Cab
3. Whistle
4. Firebox
5. Sand Dome
6. Boiler
7. Bell
8. Smokestack
9. Headlight
10. Smokebox
11. Piston
12. Pilot (commonly called Cow Catcher)
13. Leading Truck
14. Driving Wheels

LOCOMOTIVE CROSSWORD PUZZLE

From the word bank fill in the crossword puzzle

whistle - stack - engineer - light - steam - bell - boiler

wood - fuel - water - coal - fireman - sand



DOWN

1. The engineer blows the _____ to let people know the train is coming.
2. The _____ adds fuel to the fire box.
3. The "119" locomotive burns _____ to heat up the water.
4. The boiler is filled with _____.
6. The water is heated inside the _____.

7. Smoke blows up through the _____.

8. _____ burns in the fire box.

ACROSS

1. The "Jupiter" locomotive burns _____ to heat up the water.

5. The locomotive is powered by _____.

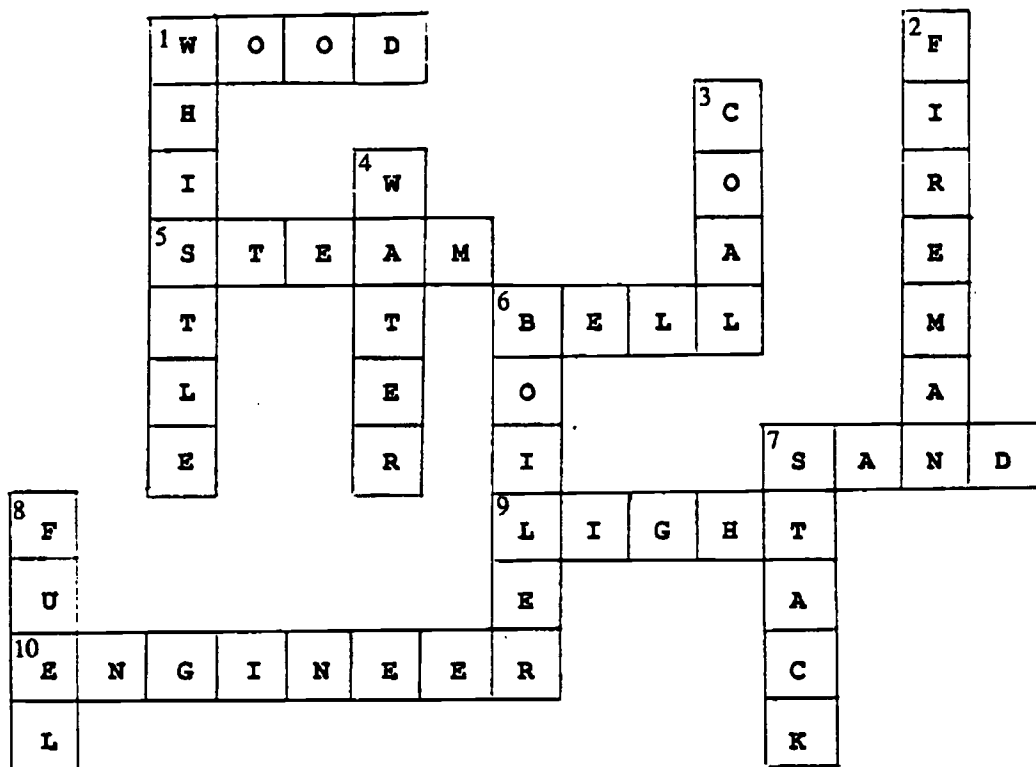
6. The fireman rings the _____.

7. When the track is slick, the engineer puts _____ on the track from the dome on the top of the locomotive.

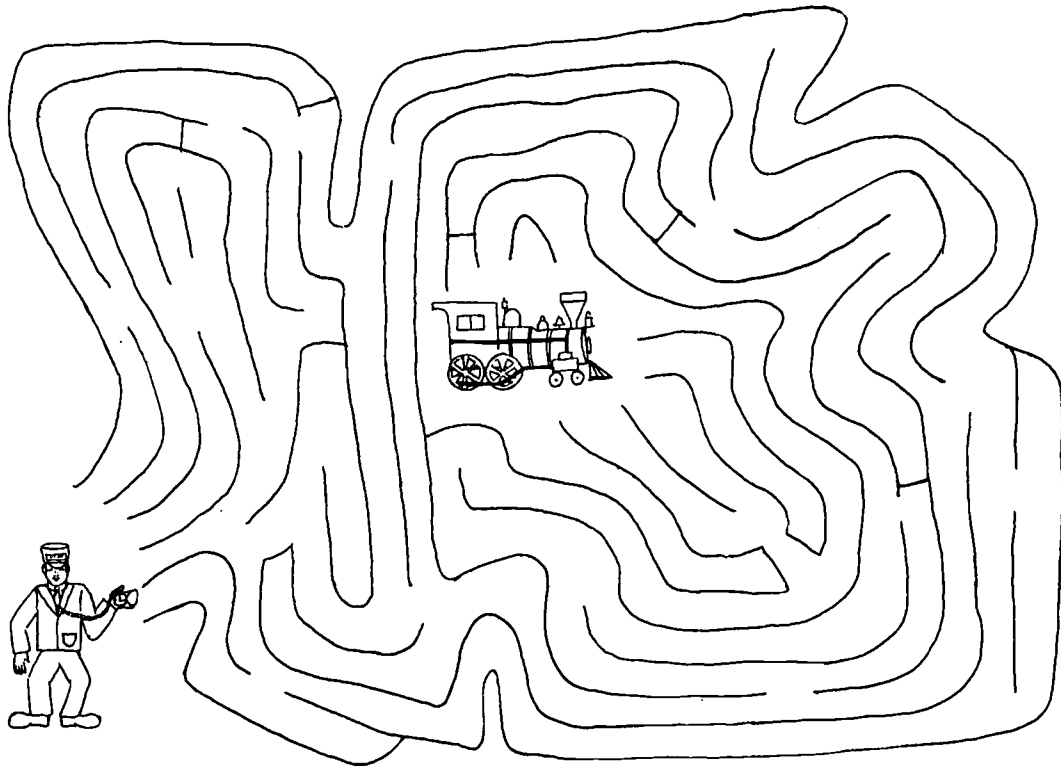
9. Kerosene burns in the _____.

10. The _____ drives the locomotive.

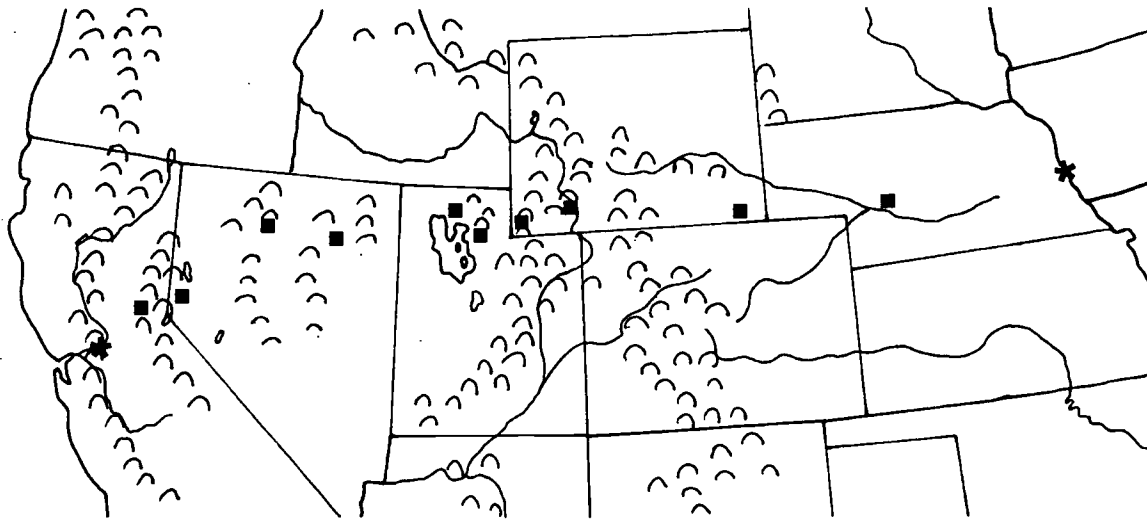
LOCOMOTIVE CROSSWORD PUZZLE



HELP THE CONDUCTOR FIND THE TRAIN



MAKING TRACKS



Connect the dots to find the route of the transcontinental railroad.

Optional: Name each of the cities the dots represent.

Letter Game

How many words, 2 letters or more can you make from the block of letters? When making a word each letter must touch another letter up, down, forward, diagonally. An individual letter may be used only once in a word. There are a minimum of 110 words.

L D K I O

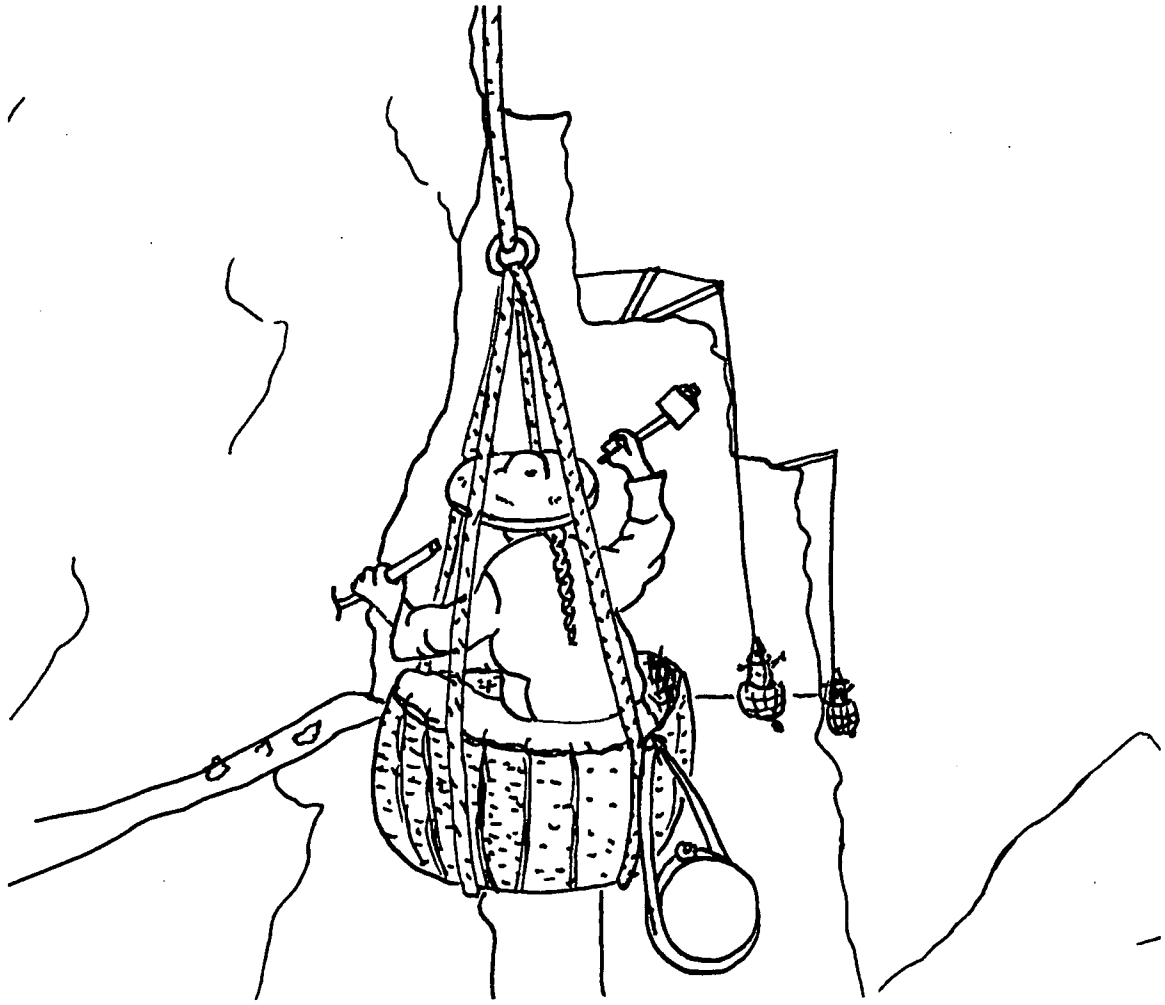
O E P N T

G S N A A

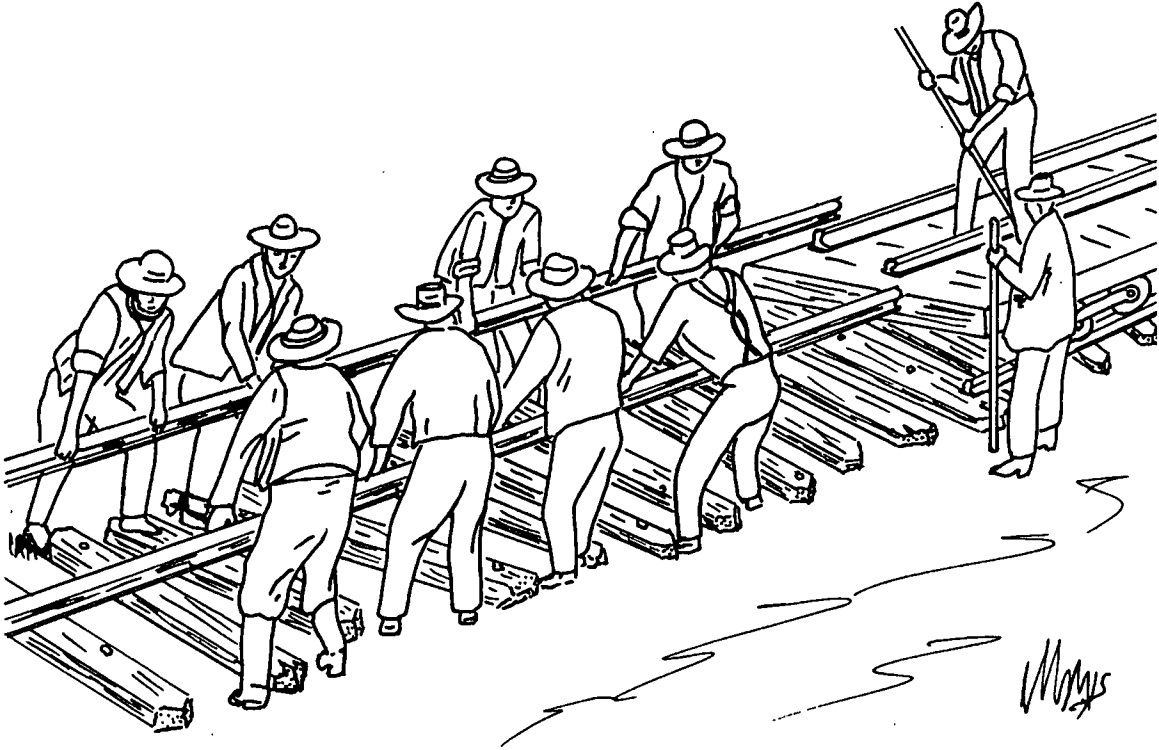
T C I H L

O R I T E

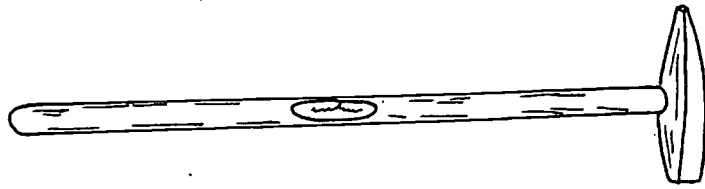
Chinese Workers Coloring Page



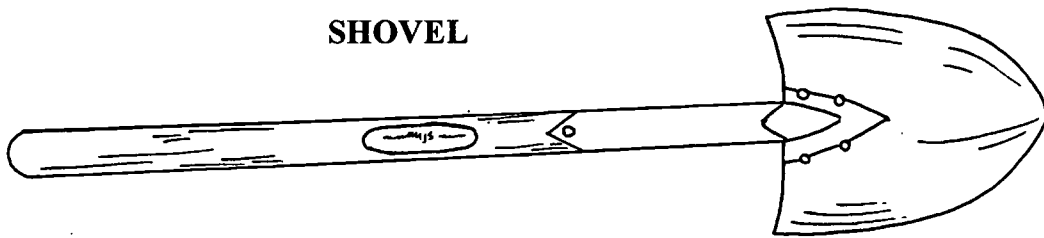
Irish Workers



Shovel and Maul

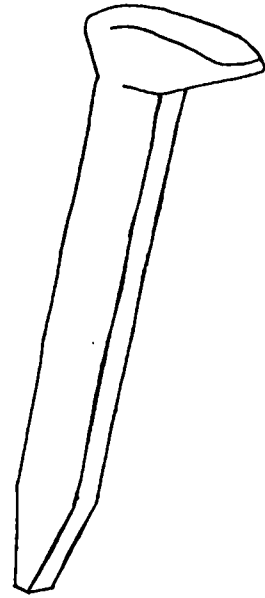
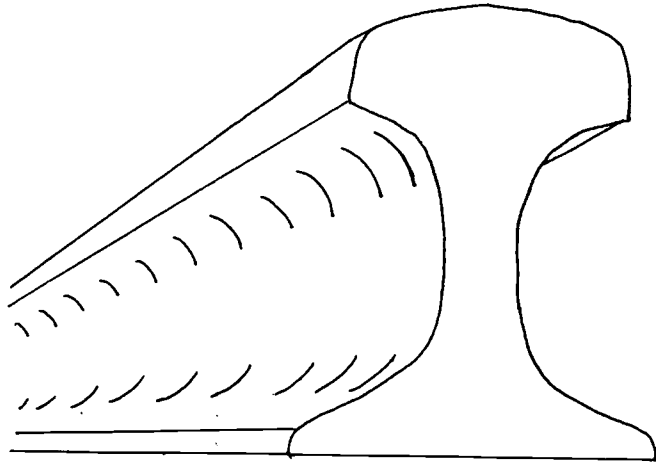


MAUL



SHOVEL

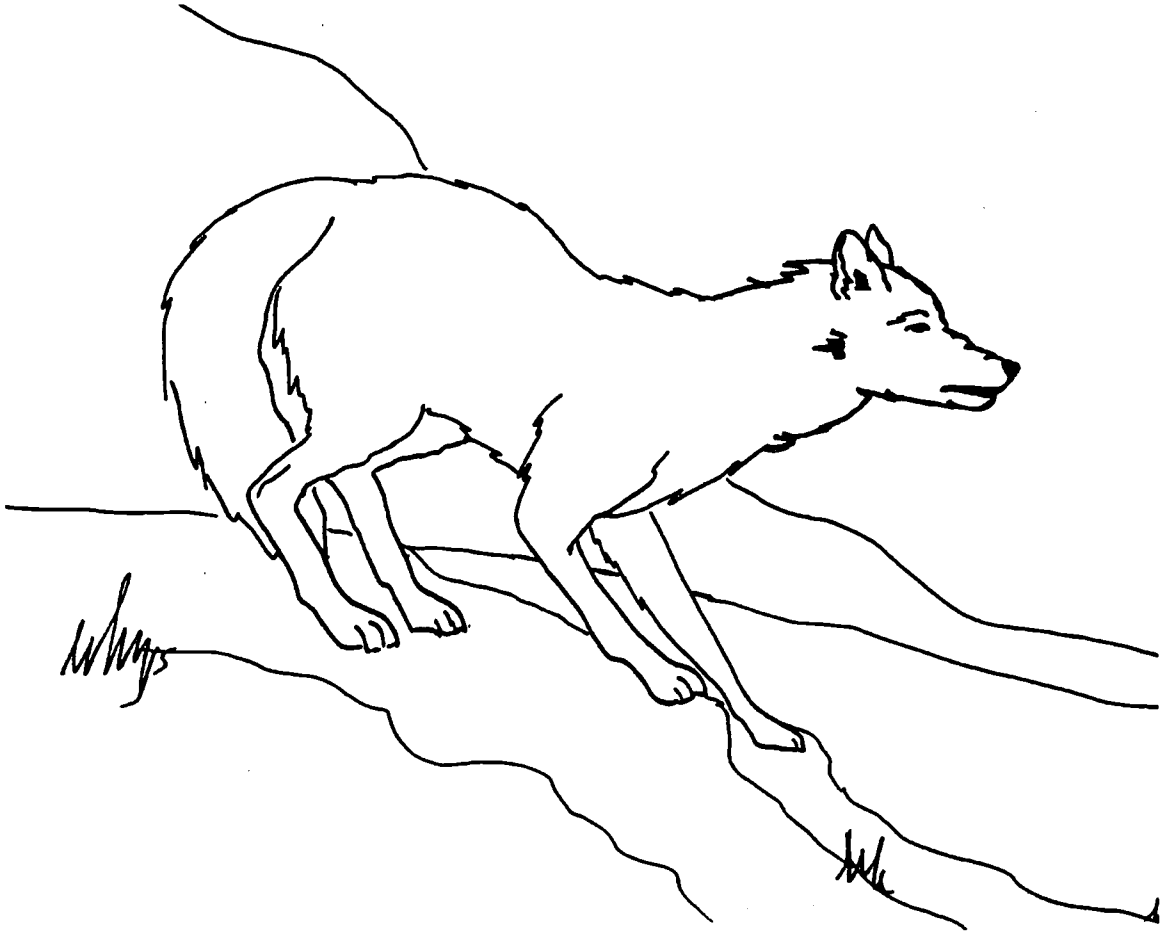
Rail and Spike



The wheels of a train sit on the rails.

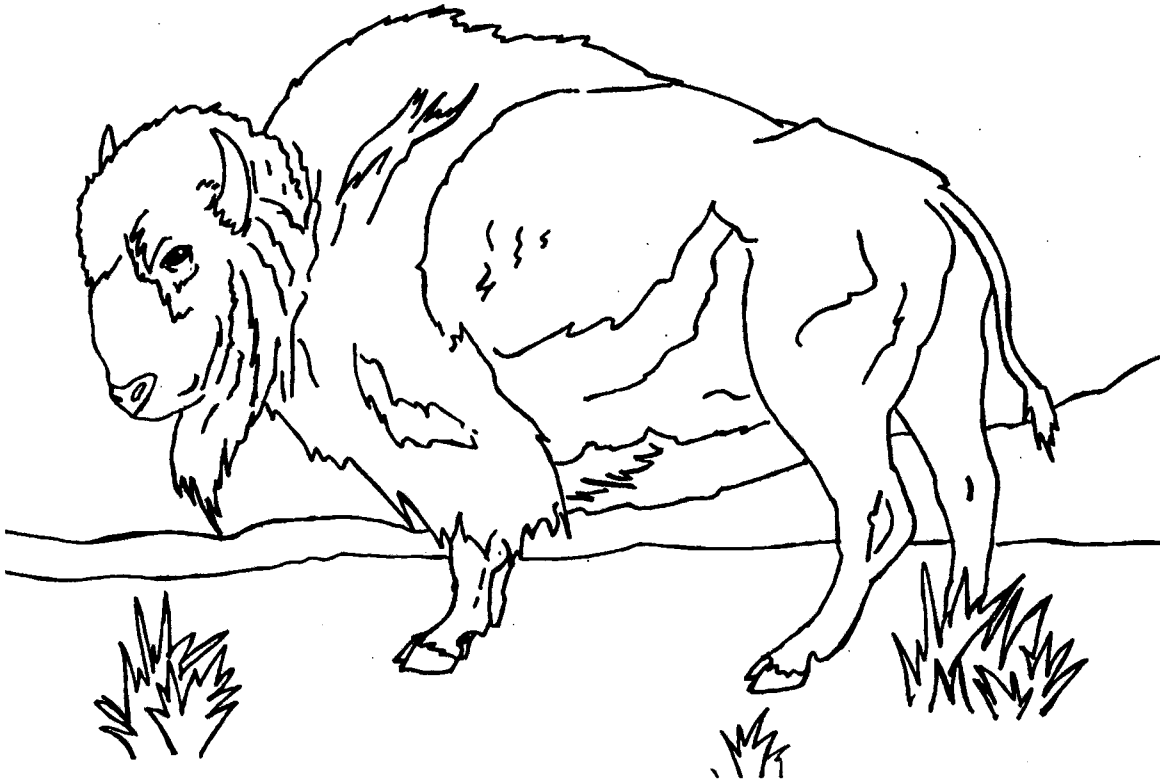
The spikes hold the rails in place.

Coyote



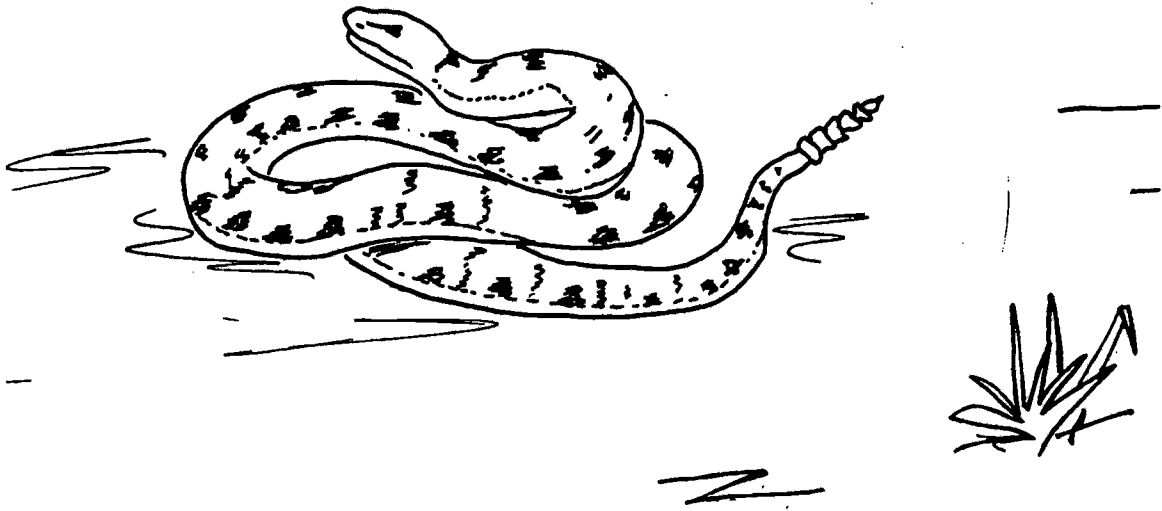
Many coyotes lived on the Great Basin and Great Plains where the railroad was built.

Bison



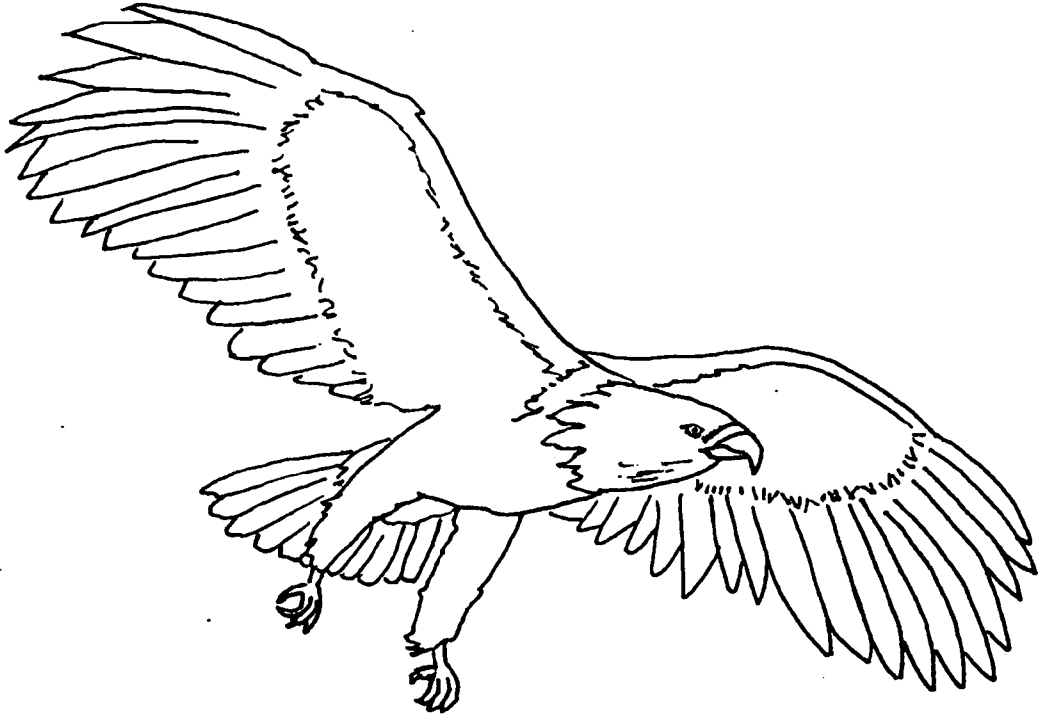
Many bison were killed by railroad workers for food, and by people who rode the trains for sport.

Rattlesnake



The surveyors and workers had to watch out for rattlesnakes while they built the railroad.

Bald Eagle



The men building the railroad saw bald eagles and many other birds.



*U.S. Department of Education
Office of Educational Research and Improvement (OERI)
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