



# Chinese Workers on the Transcontinental Railroad

GRADE 7

# Chinese Workers on the Transcontinental Railroad

By Christopher Merritt, Ph.D.

## Summary

Chinese workers made a significant contribution to the construction of the first transcontinental railroad during the 1860s. Historians estimate 12,000 Chinese immigrants worked for the Central Pacific Railroad, blasting tunnels and laying track from Sacramento, through the Sierra Nevada Mountains, and into Utah. Chinese people comprised about eighty percent of the total workforce on the transcontinental railroad, far outnumbering Irish, Mormon, and others who worked primarily for the Union Pacific. This lesson draws on the science of archaeology, focusing on Chinese material culture to explore the lives of these workers.

## Main Curriculum Tie

**UT Standard 2.2:** Students will compare the causes and lasting effects of various non-Mormon groups' migrations to Utah. (history)

## Additional Curriculum Ties

**UT Standard 2.5:** Students will construct an evidence-based argument to explain how the development of transportation and communication networks across the state changed Utah's economy and human geography. (economics, geography)

**UT Standard 2.6:** Students will explain how agriculture, railroads, mining, and industrialization created new communities and new economies throughout the state. (economics, geography)

## Time Frame

2 time periods that run 45 minutes each.

## Group Size

Slides may be shown and discussed with the entire class in addition to printing the materials for small group or individual work. Students may complete the activities and worksheets individually or in pairs/small groups to facilitate discussion.

## Life Skills

Aesthetics     Character     Communication     Employability  
 Social & Civic Responsibility     Systems Thinking     Thinking & Reasoning

## Bibliography

Heath, Earle. "A Railroad Record that Defies Defeat." *Southern Pacific Bulletin* 16:5 (1928), pp. 3-5.

Stanford, Leland. "Statement to the President of the United States," in "Message of the President of the United States and Accompanying Documents to the Two Houses of Congress at the Commencement of the First Session of the Thirty-Ninth Congress." Washington: Government Printing Office, 1865, pp. 990.

<https://books.google.com/books?id=8mEvAQAAMAAJ&dq>

Maniery, Mary L. *Finding Hidden Voices of Chinese Railroad Workers*. The Society for Historical Archaeology. 2016.

<http://www.lulu.com/shop/mary-l-maniery/finding-hidden-voices-of-the-chinese-railroad-workers/hardcover/product-22745731.html>

Nordhoff, Charles. *A Book for Travellers and Settlers*. New York: Harper & Brothers Publishing, 1873.

<http://cdn.loc.gov/service/gdc/calbk/202.pdf>

## Materials

Readings, photos of Chinese artifacts, worksheets, and activities.

PowerPoint of the artifacts is available to allow projection of the images.

## Background for Teachers

Teachers should understand that the first transcontinental railroad stretched 1,776 miles from Nebraska to California, and was built by two railroad companies. The Union Pacific built westward from Omaha, Nebraska, while the Central Pacific built eastward from Sacramento, California. The two companies met at Promontory Summit, Utah, on May 10, 1869, completing the nation's first coast-to-coast rail network.

This huge undertaking relied on the physical labor of thousands of workers. According to sources from the time, the Central Pacific employed more than 18,000 workers, eighty percent of whom were immigrants from China. However, the contributions of Chinese workers were rarely recognized and they were not included in the iconic photographs taken at the meeting of the rails.

This lesson uses archaeological science to explore the culture of these workers. The black-and-white checkerboards next to the artifacts are measuring tools: each block = 1 square centimeter.

Teachers should discuss the racist terminology found in the primary sources, such as "coolie" and "John Chinaman," in advance with their students. Although these terms were commonly used during the 19<sup>th</sup> century, they were demeaning and disrespectful to Chinese immigrants at the time, and are inappropriate to use today.

## Student Prior Knowledge

Students should understand that the first transcontinental railroad stretched 1,776 miles from Nebraska to California, and was built by two railroad companies. The Union Pacific built westward from Omaha, Nebraska, while the Central Pacific built eastward from Sacramento, California. The two companies met at Promontory Summit, Utah, on May 10, 1869, completing the nation's first coast-to-coast rail network.

This huge undertaking relied on the physical labor of thousands of workers. According to sources from the time, the Central Pacific employed more than 18,000 workers, eighty percent of whom were immigrants from China. However, the contributions of Chinese workers were rarely recognized and they were not included in the iconic photographs taken at the meeting of the rails.

## Intended Learning Outcomes

Students will analyze historic documents and artifacts and draw conclusions about how the items were used, and how they are similar/different to similar objects from their own lives. Students will analyze the attitudes of white Americans toward Chinese immigrants during the 1860s.

## Instructional Procedures

### Day 1

- Students read the introductory reading and accompanying two primary sources.
- Using what they have learned, students complete the Write a Letter Home to China activity.

## Day 2

- Teacher leads the class through the Chinese Material Culture Archaeology activities. Teacher may show the artifact slides and lead a whole-group discussion using the discussion questions. Alternatively, students can use the printed packet in small group discussions and analysis.
- Students complete the Chinese Material Culture Archaeology Worksheet.
- Students complete the Archaeology Investigation activity. An answer key is provided at the end of the lesson plan.

## **Strategies for Diverse Learners**

Students may be invited to share stories from their own families' immigrant generation.

Students may need to work with partners for reading and discussion.

## **Extensions**

Students may complete the Chinese Railroad worker crossword puzzle.

## **Assessment Plan**

Assessment can include the three worksheets as well as respectful participation in group discussions.

## Reading: Chinese Workers on the Transcontinental Railroad

When the Central Pacific Railroad Company (CP) started building its half of the Transcontinental Railroad in Sacramento, California, in 1864, the workforce was largely made up of unemployed gold miners and immigrants. However, these men proved unreliable, leading the CP to look for another labor source. In January 1865, the CP experimented with a group of 300-400 Chinese workers to build a section of track and it was a great success.

In a statement to President Andrew Johnson in 1865, CP president Leland Stanford (future governor of California and founder of Stanford University), said "The greater portion of the laborers employed by us are Chinese, who constitute a large element in the population of California. Without them it would be impossible to complete the western portion of this great national enterprise, within the time required by the Acts of Congress.... We have assurances from leading Chinese merchants, that under the just and liberal policy pursued by the Company, it will be able to procure during the next year, not less than 15,000 laborers."

As the railroad moved into the Sierra Nevada Mountains on the border of California and Nevada, nearly 11,000 Chinese workers helped to cut tunnels through solid granite, build towering wooden trestles (bridges for trains), build 30 miles of wooden sheds over the railroad to protect the trains from avalanches, and do the majority of the other construction efforts. By 1868, the Central Pacific Railroad left the Sierra Nevada Mountains and the workers raced across Nevada, building nearly 650 miles of track in that year and reaching Utah in March of 1869.

In Utah Territory, CP's engineer J.H. Stobridge estimated that between 5,000 and 7,000 Chinese were continuing the construction towards completion of the railroad. These Chinese workers, many of them already veterans of the Sierra Nevada mountains and Nevada, were building nearly four miles of track per day. Irish and other workers built certain other parts of the railroad or hauled supplies, but the majority of the labor for the hardest work was supplied by the Chinese.

In a bet made between Charles Crocker of the Central Pacific and Thomas Durant of the Union Pacific, Crocker claimed that his mostly-Chinese crew could build 10 miles of track in one day in Utah. With a \$10,000 wager, the Central Pacific organized nearly 4,000 workers, nearly all of them Chinese, to beat the old record of seven miles in one day. Between 7:00 am and 7:00 pm, with a short lunch, the workers completed the ten miles, and an extra 56 feet, laying nearly one mile of track per hour. To this day this construction feat has never been beaten.

By the time the golden spike was driven on May 10, 1869 at Promontory Summit, Utah Territory, hundreds of Chinese workers were already working back toward California to improve and repair the quickly built rail line. Because the railroad was built quickly for the 'race' between the two railroads, many of the trestles, culverts, and other features needed to be improved and upgraded before trains began moving freight and passengers later in 1869. Because of the successful contribution of Chinese workers on the Central Pacific, the Union Pacific hired hundreds of now unemployed Chinese laborers to maintain and improve their half of the line all the way back to Nebraska. Chinese railroad workers contributed not only to the construction of our nation's first transcontinental railroad, but also remained the primary workforce to maintain it for the next 30 years.

Ironically, as much as Leland Stanford benefitted from the hard work of Chinese people on the Central Pacific Railroad, he led efforts through the 1860s and 1870s to stop the legal immigration of Chinese to the United States. This resulted in the Chinese Exclusion Act of 1882, which banned further immigration of Chinese workers into the United States, and was not repealed until 1943. This is the reason Chinese people stopped being the main maintenance workforce for the railroad by 1900. They were replaced by immigrants from Japan, Italy, Greece, and Mexico.

Because of the racism of the 19<sup>th</sup> century, historians and archaeologists have little first-hand information from the Chinese workers who built the first transcontinental railroad. Today there are no letters, diaries, or personal accounts in museums or libraries from the Chinese workers. But many Chinese living in China and in the United States today are descendants of these important workers.

To fill in the stories missing from history books, archaeologists can look at what the Chinese railroad workers left behind along the railroad grade to tell their story. Archaeologists are scientists that study the objects left behind by people that

came before us. For America's Chinese railroad workers, these artifacts are the only physical things left from the time, other than the railroad itself, that can tell their story. By identifying the artifacts these workers left behind along the railroad route, archaeologists can understand what the workers ate, what they did for fun, and how they adapted to a foreign country and landscape.

Today, most of the Chinese railroad worker's archaeological sites are located on federal and public lands managed by the Bureau of Land Management. You can drive the railroad grade built by thousands of Chinese workers more than 150 years ago. Unfortunately, some people who visit these sites pick up the artifacts and pieces of the past that the Chinese workers left behind. Every time someone takes an artifact from a site, it is like ripping the page out of a really great book or novel, because we will never have the chance to understand what these objects can share about the lives of these people. If you visit these sites remember the contributions of these immigrant workers to the history of the railroad and Utah, and respect what they left behind for us to remember them by.

### **Primary Source 1**

Comments by Leland Stanford, President of the Central Pacific Railroad Company, 1865

"A large majority of the white laboring class on the Pacific Coast find more profitable and congenial employment in mining and agricultural pursuits, than in railroad work. The greater portion of the laborers employed by us are Chinese, who constitute a large element in the population of California. Without them it would be impossible to complete the western portion of this great national enterprise, within the time required by the Acts of Congress.

As a class they are quiet, peaceable, patient, industrious and economical—ready and apt to learn all the different kinds of work required in railroad building, they soon become as efficient as white laborers. More prudent and economical, they are contented with less wages. We find them organized into societies for mutual aid and assistance. These societies, that count their numbers by thousands, are conducted by shrewd, intelligent business men, who promptly advise their subordinates where employment can be found on the most favorable terms.

No system similar to slavery, serfdom or peonage prevails among these laborers. Their wages, which are always paid in coin, at the end of each month, are divided among them by their agents, who attend to their business, in proportion to the labor done by each person. These agents are generally American or Chinese merchants, who furnish them their supplies of food, the value of which they deduct from their monthly pay. We have assurances from leading Chinese merchants, that under the just and liberal policy pursued by the Company, it will be able to procure during the next year, not less than 15,000 laborers. With this large force, the Company will be able to push on the work so as not only to complete it far within the time required by the Acts of Congress, but so as to meet the public impatience."

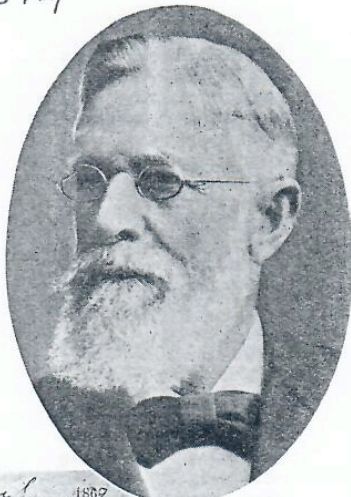
"Central Pacific Railroad Statement Made to the President of the United States, and Secretary of the Interior, on the Progress of the Work." Sacramento: H.S. Crocker & Co., Printers. 10 October 1865. Pg. 990.

SOUTHERN PACIFIC BULLETIN  
 Vol. XVI, No. 5 May  
 1928, pp. 3-5

# A Railroad Record That Defies Defeat

How Central Pacific laid ten miles of track in one day back in 1869

By ERLE HEATH, Associate Editor



**FIFTY-NINE** years ago a squad of eight Irishmen and a small army of Chinese coolies made a record in track laying that has never been equalled. In one day, on April 28, 1869, these men, fired with the enthusiasm of the greatest railroad construction race in the history of the world, laid ten miles and fifty-six feet of track in a little less than twelve hours to bring the railroad of the Central Pacific three and one-half miles from Promontory, Utah, where connection was made a few days later with the Union Pacific to form the first transcontinental railroad.

The names of the Irish rail handlers have been passed down through the years. Their super-human achievement will be remembered as long as there is railroad history.

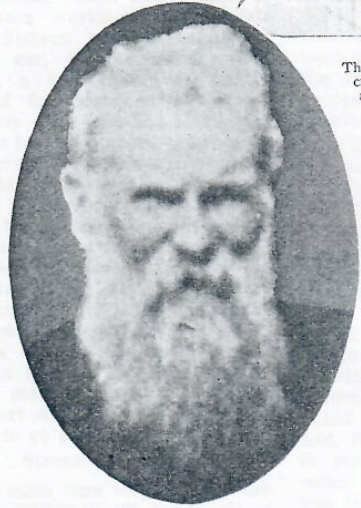
ing 14,000 men, had pierced the snow-covered, granite walls of the high Sierra and extended their trail of iron over the barren plains 675 miles eastward. For more than five years the Union Pacific had been building westward. Officers of both roads were awake to the future advantages that would accrue to the company having the longest mileage. This rivalry ex-

TIME BOOK FOR THE													MONTH OF <i>April</i> 1869																		
NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
<i>George Coley</i>																															
<i>George Elliott</i>																															
<i>Edward Kelleen</i>																															
<i>Thomas Daley</i>																															
<i>Mike Stout</i>																															
<i>Mike Sullivan</i>																															
<i>Mike Kennedy</i>																															
<i>Frederic McParmaire</i>																															
<i>Petrach Jace</i>																															
<i>William Carnton</i>																															
<i>Peter Egan</i>																															

*The above are the names of the crew that laid 10 miles and 56 feet of track on April 28<sup>th</sup> 1869. Began Station 549. Total Finished 1077 52807.56 feet*

**close together.** The story is told that Vice President Durant of the Union Pacific bet \$10,000 that it could not be done, and that his money was "covered."

For several days Crocker and his construction superintendent, J. H. Strobridge, marshalled their forces and laid their plans. Ties were hauled ahead by two-horse teams and distributed along the right-of-way. For some distance the ties were spaced on the already graded road bed. Rails and track materials were moved up from the rear and held



So, too, will that day's work of "John Chinaman" be recalled as the most stirring event in the building of the railroad.

During six years the builders of the Central Pacific, at times number-

This is a page copied from the time book kept by George Coley, foreman of the Central Pacific crew that laid ten miles and fifty-six feet of railroad track in one day on April 28, 1869, setting a record that has never been equalled. The foreman's notations give the mileage stations between which the track was laid, and the names of the men who did the job, also the fact that the men received four days' pay for the day's work. The last two men on the list handled the track gauges for the eight rail handlers. The original book has been preserved by Coley's daughter, Mrs. Jennie Yeates, of Oakland, Cal., who also has the tape measure used by her father. The picture of Coley (left) was taken in 1911, not long before he died, while on the pension rolls of Southern Pacific. J. H. Strobridge (above) was construction superintendent in charge of the Central Pacific forces during the building of the first transcontinental railroad.

tended through the ranks from the presidents to the track laborers. There followed some marvelous feats of track laying.

### The Challenge

One day the Union Pacific broke all records by laying six miles of track. Charles Crocker and his Chinese "pets" were invited to match that. They beat it by a mile. Then the Union Pacific came back with seven and a half miles, working from three in the morning until almost midnight. But the Central Pacific was not to be beaten.

Crocker declared his men would lay ten miles of rail in a day. Such a ridiculous thing was scoffed at in the rival camps, which were now drawing

in trains ready to advance. More than 4000 men and hundreds of horses and wagons were on the spot. Every man knew his particular job, taught by many months of track work. No one would get in the other fellow's way. In the Central Pacific camp, the patient and methodical Orientals were stirred to a pitch of excitement never shown before, and shared with the few hundred whites the anxiety to "get at the job."

### Mishap First Day

April 27, 1869, was the day selected, but an engine off the track early in the proceedings compelled a postponement until the next day. This mishap brought many laughs from the Union Pacific side, but only served

to arouse the determination of Crocker's men. Bright and early the next morning they were set again and at 7:00 o'clock the great task began.

Here is the way it was done, according to a reporter for the San Francisco Bulletin, who was on the scene, and verified by Joseph M. Graham, now living in Berkeley, California, who was an assistant engineer on construction during the building of the Central Pacific:

#### How It Was Done

A train of sixteen cars loaded with iron rail and materials for two miles of track was pushed up to the front. Men climbed on top and threw off the fish plates and kegs of bolts and spikes. Others punched side stakes out of the right and left alternate cars. The rails were then rolled off and in eight minutes the sixteen cars were cleared with a noise like the bombardment of an army. The train was then pulled back out of the way and another train of rails brought into position.

As soon as the material train was gone, small iron hand cars were put on the tracks. Each had a crew of six Chinese working under white bosses. Sixteen rails were loaded on each car, together with a keg of bolts, a keg of spikes, and a bundle of fish plates. Two horses with riders were attached to the car in tandem by a long rope. As soon as the car was loaded and the crew on top, the horses were off on the jump. One side of the roadway was kept clear for the horses racing ahead with the material cars. On a down-grade the horses were detached and the car went flying along with one of the crew acting as a brakeman. The horses ran alongside and, when a level was reached, the nearest rider hooked on again. The first car out from the material dump only had to go a short distance, while the last cars had to go perhaps two miles.

#### Stream of Iron

At the same time empty cars were returning on the single track, all of them at full speed. As a full car came closer, the crew on the empty car jumped off and lifted their car from the rails, while the loaded car went past without slacking speed. There was no halt in the continuous stream of materials to the front.

When the loaded car neared the

# Southern Pacific Bulletin

F. Q. TREDWAY, Editor

Published monthly by Southern Pacific Company Bureau of News, in the interest of and distributed free to active and retired employees. Signed contributions are invited and should be addressed to the Editor, Southern Pacific Bulletin, 65 Market Street, San Francisco, Calif. Manuscripts and photographs will be returned if requested.

VOL. XVI

MAY, 1928

NO. 5

## Table of Contents

Cover—Driving of the "last spike" at Promontory, Utah, May 10, 1869, when the Central Pacific and Union Pacific were connected in the first transcontinental railroad. The picture is copied from an original made by Savage & Ottinger, Salt Lake City.

A Railroad Record That Defies Defeat . . . . .	By Erle Heath	3
Tucson Employee Plays Championship Polo . . . . .	By Leroy Magers	6
Annual Report Shows Good Work Done by All . . . . .		7
Champion Fuel Savers Rewarded with Prize Trip . . . . .		9
Sacramento Shopman Heads Pensioned Veterans . . . . .		10
Traffic Men "Step up" in Freight Department . . . . .		11
Your Doctor . . . . .		12
From Trail to Rail . . . . .		13
El Paso Takes Safety Banner for Shops . . . . .		16
Fine Work Done in Freight Protection . . . . .	By R. G. Fagan	17
Traffic "Minute Man" Gets Business and Makes Friends . . . . .		17
Motorist's Part in Grade Crossing Accidents . . . . .		18
Here and There Along the Line . . . . .		20
Leaders in Fuel Saving . . . . .		22
Young and Old Frolic at P. F. E. Picnic . . . . .		24
Portland Ends Bowling Season With Banquet . . . . .		31

rail-head, its gang stepped off and another gang jumped on with picks. They broke open the kegs and cut the fastenings on the fish plates. The keg of bolts was thrown to one side to men who filled their buckets and distributed the bolts. Other men distributed the fish plates. The spikes were poured out over the rails and as the rails were removed the spikes dropped through the floorless car and distributed themselves.

At this point the picked crew of Irish rail handlers, working under Track Foreman H. H. Minkler and Gang Foreman George Coley, came into the picture. A single horse pulled the car up to rail-head, where it was blocked by a wooden-framed iron track gauge. Four men worked on each side of the track. Two men seized the forward end of the rail with their tongs while the two rear men slipped the rail to the side of the car so it rested on iron rollers. The two forward men trotted ahead the length of the rail, thirty feet, the rear men dropping the rail in place, where it was bolted and spiked by the track gang. The car was then pulled forward to the next track gauge and the procedure repeated.

The track went forward at the rate of almost a mile an hour. A correspondent for the Alta, another San Francisco newspaper, timed the track layers. He wrote: "I timed the movement twice and found the speed to be

as follows: The first time 240 feet of rail was laid in one minute and twenty seconds; the second time 240 feet was laid in one minute and fifteen seconds. This is about as fast as a leisurely walk and as fast as the early ox teams used to travel over the plains."

#### At the Front

But the rail handlers were only eight of several hundred men at the front, everyone of whom was an important cog in the smooth-working machinery. Ahead were three "pioneers," the most advanced men, who, with shovel and by hand, butted the ties to a rope line measured from the track-center spikes set by the surveyors. About half the regulation number of ties were placed at first to insure having sufficient for the ten miles.

Just behind the rail layers came the spikers, bolters, and those who distributed the materials. Then came the

gang that surfaced the track by raising the ends of the ties and shoveling enough ballast to hold them firm. Immediately following was a "reverend looking old gentleman" who sighted the line of the rails and, by motion of his hands, directed the track straighteners. Then the tampers, 400 strong, with shovels and tamping bars.

#### Mile an Hour

The scene was an animated one. From the first "pioneer" to the last tamper, about two miles, there was a line of men advancing a mile an hour; iron cars with their load of rails and humans dashed up and down the newly-laid track; foremen on horseback were galloping back and forth. Keeping pace with the track layers was the telegraph construction party. Alongside the moving force, teams were hauling tool and water wagons. Chinamen with pails dangling from poles balanced over their shoulders were moving among the men with water and tea.

Farther back, locomotives were waiting with their cars of materials. Five train loads were used on that day. When one section was completed, the next material train was moved up as far as possible on the new track and materials for another two miles unloaded. In the rear of all this was the boarding house train and quarters of officers, a long line of wood houses built on flat cars, looking like a small



town stretched out. In the valley below, continuous trains of wagons and mounted work shops moved along in parallel lines. It could only be compared to the advance of an army.

When a halt was called for the mid-day meal, six miles of track had been laid and the men were confident they would reach their goal. A number of Union Pacific officers had lunch with Stanford, Crocker, and others of the Central Pacific. They were ready to extend congratulations. "Victory" was the name given the spot where lunch was taken. The station is now called Rozel.

#### Grades and Curves

After lunch the work went on, but not so rapidly. The ascending grade on the west slope of Promontory Mountain was more difficult than the section covered during the morning and there were many curves. Considerable time was lost in bending rails, which was done by placing the rail on two blocks and forcing it into the desired curve by blows of a heavy hammer.

When the forward march was halted at 7 o'clock, ten miles and 56 feet of new track had been added to the Central Pacific. Jim Campbell, boarding boss and later superintendent of the division, jumped into a locomotive and ran it back over the new line at a clip of 40 miles an hour just to prove that the job had been well done.

If the roadway had been perfectly level and straight, these men could have laid fifteen miles of track. The task had involved bringing up and putting into position 25,800 ties, 3520 rails averaging 560 pounds each, 55,000 spikes, 14,080 bolts, and other material making a total of 4,462,000 pounds.

#### Workers Acclaimed

Each of the rail handlers lifted 125 tons of iron during the day, in addition to carrying the weight of their heavy rail tongs. They walked many feet more than the ten miles forward. Their's was a wonderful exhibition of skill and strength, and they richly deserved the acclaim showered on them when they proudly rode in a wagon as a feature of Sacramento's railroad celebration a few days later. When the parade was over, their wagon was filled with flowers thrown to them by men and women, boys and girls.

Ten miles of railroad track laying in one day! It is a record that will probably never be challenged. It is not likely there will ever again be such a spirited race for railroad supremacy as the one that inspired the Central Pacific and Union Pacific to such marvelous feats in those early days. Never will there be assembled such an army of railroad workers.

With the eight sons of Erin and the sons of "John Chinaman" rest the palms of a great track-laying victory.

**Name:**

## **Write a Letter Home to China**

Chinese employed by the Central Pacific Railroad in the 1860s left behind their families in China in search of jobs and opportunity in the United States. For nearly all of these Chinese workers this was their first time being out of their home country and in a foreign land. Think about how they would have seen the United States from their point of view: not understanding the language, unable to read the newspapers or signs, or understand the foodways and habits of other people.

Workers were able to send letters home now and then, to let their families know about their lives in the United States and the work on the railroad. Families sent letters too but they might be months or years apart. Historians have very few of these letters today, so we have few ways to understand what the workers saw or thought in their years on the railroad.

How would you feel to know that your family is thousands of miles away across the Pacific Ocean and relying on you to send money home for food and shelter? What would you say to your family if you were new to Utah and did not speak the language or understood its customs? In the space below write a letter home to your family about your life in Utah on the railroad crews. Tell them about the work that you do and the people you meet. Remember that your family has never left home or seen a foreign country like the United States.

# Chinese Material Culture Archaeology

Chinese railroad workers brought with them a unique assemblage of material culture in order to continue their traditional life and foodways. Ceramics imported by Chinese immigrants in the United States included tableware, serving ware, and storage vessels. Archaeologists discover sherds of all these styles at sites in Utah and anywhere else that the Chinese went in search of jobs in the 1800s. While less common than ceramics, personal items such as coins, gaming pieces, and writing tools are sometimes found in archaeological sites. All of the items described in this document were made in China and imported to the United States for the use and consumption of Chinese immigrants.

Source: Artifact images A through I provided for educational purposes only, courtesy Kam Wah Chung State Heritage Site, Oregon State Parks and Recreation Department.

## Vocabulary

- Archaeology: Study of humans through the physical remains of what they left behind.
- Material Culture: This is the physical expression of culture.
- Archaeological Site: A place where humans lived, worked, or played and material was deposited.
- Artifact: Any object made, modified, or used by humans.
- Diagnostic Artifact: An item that indicates a certain group of people, a certain time period, or a specific function.
- Ceramic: Pottery, or clay that has been fired in a kiln.
- Porcelain: White, highly fired ceramic made from special clay.
- Stoneware: Dark, heavy, and highly fired ceramic made to be durable.
- Foodways: What types of food people ate, how they prepared it, what kinds of social activities were involved, and how they acquired the supplies.
- Pot Sherd: A piece of broken pottery, such as what archaeologists typically find.

## Instructions

1. Read "Food and Supplies at a Chinese Railroad Store, 1873".
2. Study each picture and the short description. Ask yourself these questions:
  - How did Chinese railroad workers use this item in their daily lives?
3. Reflect on your own life. For each object:
  - Think of a similar object from your own home.
  - Why did your family select the objects you use at home?
  - Where were your family's objects made and purchased?
4. Compare and contrast:
  - What are the similarities and differences between objects in your home and the Chinese workers?
  - What observations can you make about Chinese tableware in comparison to typical American tableware?
5. Draw conclusions
  - What did Chinese railroad workers eat? What did they do for fun?
  - How do the objects (both from today and the past) reflect different cultures?
  - What can we learn about the Chinese railroad workers from these artifacts and objects?

Name:

## Chinese Material Culture Archaeology Worksheet

Object	Name	Function	Similar Object in Your Home	Compare/Contrast
A	Bamboo Style Bowl	Used to hold food for one person.	Bowls used for eating soup, cereal, ice cream.	Chinese workers ate from bowls at every meal. We use bowls for some food and plates for other foods.
B				
C				
D				
E				
F				
G				
H				
I				
J				

Draw Conclusions

## Food and Supplies at a Chinese Railroad Store, 1873

*A book published in 1873 describes the types of food and supplies that Chinese workers had during the construction of the railroad. Because historians and archaeologists have no letters or remembrances from Chinese railroad workers, the following list of food, along with the objects workers left on the ground along the railroad grade, are the only evidence we have showing what types of food the workers ate, and what kinds of personal items they bought.*

“They buy their supplies at a store kept in several cars near the end of the track; and this shop was a great curiosity to me. Here is a list of the food kept and sold there to the Chinese workmen:

Dried oysters, dried cuttle-fish, dried fish, sweet rice crackers, dried bamboo sprouts, salted cabbage, Chinese sugar (which tasted to me very much like sorghum sugar), four kinds of dried fruits, five kinds of desiccated vegetables, vermicelli, dried sea-weed, Chinese bacon cut up into salt cutlets, dried meat of the abelona shell, pea-nut oil, dried mushrooms, tea, and rice. They buy also pork of the butcher, and on holidays they eat poultry.

Compare this bill of fare with the beef, beans, bread-and-butter, and potatoes of the white laborers, and you will see that John [sic] has a much greater variety of food.

At this railroad store they sold also pipes, bowls, chop-sticks, large shallow cast-iron bowls for cooking rice, lamps, joss paper, Chinese writing-paper, pencils and India ink, Chinese shoes, and clothing imported ready-made from China. Also, scales—for the Chinaman is particular, and reweighs everything he buys as soon as he gets it to camp. Finally, there was Chinese tobacco. The desiccated vegetables were of excellent quality, and dried, evidently, by a process as good as the best in use with us.”

Nordhoff, Charles. *A Book for Travellers and Settlers*. New York: Harper & Brothers Publishing, 1873.

<http://cdn.loc.gov/service/gdc/calbk/202.pdf>

### Vocabulary

- Cuttle-fish: one type of squid
- Desiccated: dried
- John: short for “John Chinaman.” This racist term used during the 19<sup>th</sup> Century was demeaning and disrespectful to Chinese people. It is inappropriate to use today.

## Artifact A. “Bamboo” Style Bowl

This was the worker’s most common style bowl during the construction of the railroad as it was both durable and cheap. The bowl is made from a thick porcelain, and was decorated by a blue hand-painted pattern that reflects shoots and flowers of Bamboo. The worker would have used this bowl as their main eating dish for breakfast, lunch and dinner. Some even had the workers’ initials scratched into the bottom.



### Discussion Questions

- What do you use in your own home that serves the same function as this bowl?
- Why would railroad workers carve their initials into their bowls?
- How does the Bamboo pattern on the bowl reflect Chinese culture?

## Artifact B. “Celadon” or “Wintergreen” Style Bowl

This common style is named for the greenish blue glaze on the outside of the objects. Celadon style is made to look like the types of objects that the Emperor would have had in their palace, but was cheaper and made for the common person to own. Unlike the “bamboo” style bowl, celadon appears as many different types of objects such as bowls, cups, saucers, and even spoons. This ceramic was nicer and more expensive than the bamboo pattern, but was still common on railroad worker sites.



### Discussion Questions

- Why do you think the color of the glaze was so important?
- Do you have any bowls at home that are nicer than the rest? When do you use the nicer types of bowls or plates?
- Why do you think this was nicer or more expensive than the “Bamboo” style?

## Artifact C. “Four Flowers” or “Four Seasons” Style Spoon and Bowls

This style is the most decorative and colorful of the ceramics that Chinese railroad workers owned. Similar to the “celadon” vessel, this pattern came in a variety of forms such as spoons, tea cups, plates, bowls, and others. Each of the four different flowers represent different seasons. These flowers are Plum Blossom (Winter), Orchid (Spring), Bamboo (Summer), and Chrysanthemums (Fall).



### Discussion Questions

- How does this style compare to the “Bamboo” and “Celadon” objects?
- Why do you think Chinese people painted flowers and seasons on their ceramics?
- What plants or flowers do you think of to represent the different seasons?



## Artifact D. Brown-Glazed Stoneware Barrel Jar

Chinese storage jars are generally a brown-glazed stoneware that can come in a variety of shapes and sizes depending on what the vessel originally held. Like most immigrants, Chinese railroad workers in the U.S. continued to eat the foods they were accustomed to. To do this they imported many types of foods and spices directly from China. This large jar was about the size of a 5-gallon bucket. It likely held pickled vegetables or eggs, dried foods, rice, or sugar.



### Discussion Questions

- Would a single person own something this big or do you think this would be for sharing or at a store? Explain your opinion.
- Where you and your family shop what kinds of packaging are used for pickled vegetables, dried rice, or sugar?

## Artifact E. Spouted Jar

While this small jar looks like a teapot, it is actually a container for soy sauce, vinegar, or vegetable oil. These three condiments are important in Chinese cooking, just like cooking oil and ketchup are for many American families. The top of the jar was sealed with a cork and a clay stopper to prevent it from leaking. Oftentimes Chinese workers would re-use this jar after it was emptied to hold water, oil, or even as a tea pot.



### Discussion Questions

- Does your family use soy sauce or have you seen it at the store? What type of jar does it come in now and how does the size compare?
- What kinds of food would you still want to eat if you were a long way from home and your family?

## Artifact F. Spice Jars

This stoneware jar and lid, covered in a rich green glaze, held dried, candied, or powdered spices, such as citrus or ginger root. Ginger root is a main flavoring in many Chinese dishes, and is an important part of Chinese cooking. Ginger is also used as a treatment for stomachache. The red label reads “dried orange peel.”



### Discussion Questions

- Why would the Chinese use stoneware jars for spices, dried vegetables, and other products?
- What are common spices at your home and what do they come in?
- Does your family use orange or lemon peel in cooking or baking?
- What do you eat to make your stomach feel better?

## Artifact G. Cleaver

Chinese railroad workers used tools similar to those of their non-Chinese neighbors. At many Chinese worker camps pieces of knives are found near trash dumps and cookhouses. This cleaver (*da dao*) was used for slicing, dicing, and light-duty chopping. Cooks cut ingredients into bite-sized pieces according to the style of foodways from southern China. The Chinese cleaver has a long, square shaped steel blade and short wooden handle, where American styles have a shorter and more curved blade.



### Discussion Questions

- Why do you think that Chinese workers used imported knives from home and not those that were made in the U.S.?
- How does this compare to the kitchen knives you have at home?

## Artifact H. Chinese Coin

Brass and copper coins have been made in China for nearly 3,000 years, and many of these came to the United States and Utah with the Chinese railroad workers. These coins were not used as money (to buy things), but were used in games, as good luck charms, and during special events and rituals such as funerals. These coins usually show the name of the Emperor who was in power at the time it was made on one side, which helps date the artifacts. The square holes allowed the coins to be held together on a string. The Chinese also believed that evil spirits would be caught in the square hole, protecting the coin's owner.



### Discussion Questions

- How does this simple coin tell us something about Chinese workers and their culture?
- Do you have good luck charms or other things to protect you from bad spirits or dreams?
- Does your family have coins that are not used as money? If so, what are they and what are they used for?

## Artifact I. Ink Stone and Ink Stick

To make the elaborate and beautiful characters of the Chinese written language, they would grind dry ink sticks in a stone tray like these, then mix with water to make ink for writing and art. Chinese writers used calligraphy brushes, which look very much like small, pointed paint brushes. While some of the workers arriving in the United States for the railroad could not write, many of them had years of education and could write letters home to the families they left behind. Non-Chinese writers of the same time used liquid ink from bottles and special types of pens.



### Discussion Questions

- How do these artifacts help you think about the Chinese worker's relationship to their family back home?
- What types of objects in your own life do you use to write with? Do you still use ink?

## Artifact J. Wei-Chi Pieces

The game of Wei-Chi (or Go, as it is known in Japan), is thought to be the oldest board game in the world, dating back more than two thousand years to early China. Chinese workers brought this traditional game with them to the United States. To play the game you would need white and black glass or ceramic pieces and a wooden game board divided into a grid. The point of the game is for two players to alternate turns, each attempting to capture territory on the game board. It is similar to the American game Othello. Chinese railroad workers would have played this game in the evenings or on their days off to pass the time and to relax.



### Discussion Questions

- Why do you think the Chinese would bring a game like Wei-Chi with them to the railroad?
- What games do you play at home and how does playing games help you and your family bond and pass the time?

## Archaeology Investigation

An archaeologist rarely finds whole objects. Usually, they find only small broken pieces on the ground. They match each piece to known types of objects, glue together pieces of artifacts to understand how they fit together as a whole, and finally, think about how all the pieces fit together to tell a story that helps us understand the past. Given what you have learned about Chinese artifacts, identify the broken sherds and artifacts below and explain what these artifacts are telling us about Chinese railroad workers' lives.





Name:

## Archaeology Investigation Worksheet

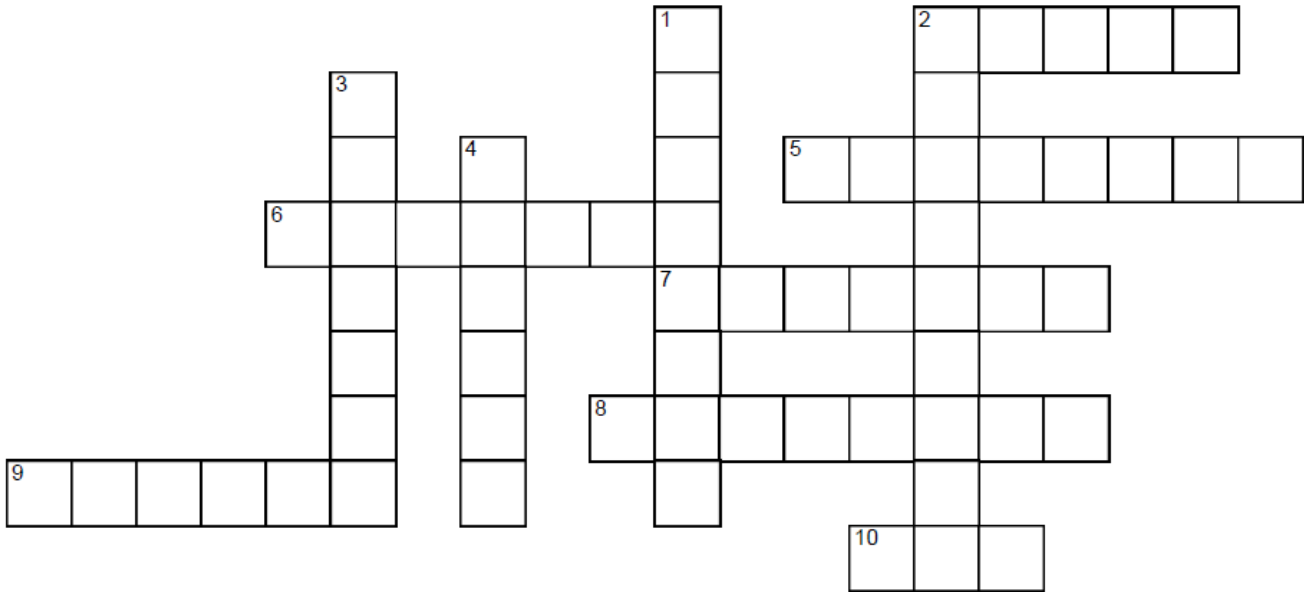
Many of these artifacts you have already seen. In the spaces below identify the object and its function. For the mystery object, Artifact #2, describe it, look at its details, and try to figure out its function and how it fits into the larger story.

Now imagine that some of these artifacts were taken away from the site where they were found. How would that change the story you can tell? People who take artifacts from sites without permission are called looters. Looters take these important stories away from the places that can provide critical details to the larger story. That is why it is important to leave artifacts where you find them.

Artifact	What is it?	What function did it serve?
1		
2		
3		
4		
5		
6		

How do these artifacts fit together to tell a story? What do the artifacts tell us about Chinese railroad workers' lives?

## Chinese Railroad Worker Crossword



**ACROSS**

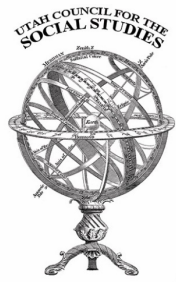
- 2 Broken piece of pottery
- 5 term for eating customs and traditions
- 6 Porcelain with light green glaze
- 7 Pottery style "Four\_\_\_\_\_"
- 8 Object made or modified by people
- 9 Popular spicy root that came in jars
- 10 Miles built in one day in 1869

**DOWN**

- 1 President of the Central Pacific Railroad
- 2 Heavy ceramic used for storage
- 3 A special tool for cutting meat
- 4 Name for blue pattern on porcelain bowl

## Archaeology Investigation Answer Key

1. Brown Glazed Stoneware Barrel Jar
2. Mystery Artifact: Kerosene Railroad Lantern
3. Bamboo Style Bowl
4. Celadon/Wintergreen Bowl
5. Four Flowers/Four Seasons Bowl
6. Spice Jar



Lesson plans on the Transcontinental Railroad created with the support of Spike150, the Utah Division of State History, and Utah Council for the Social Studies.

