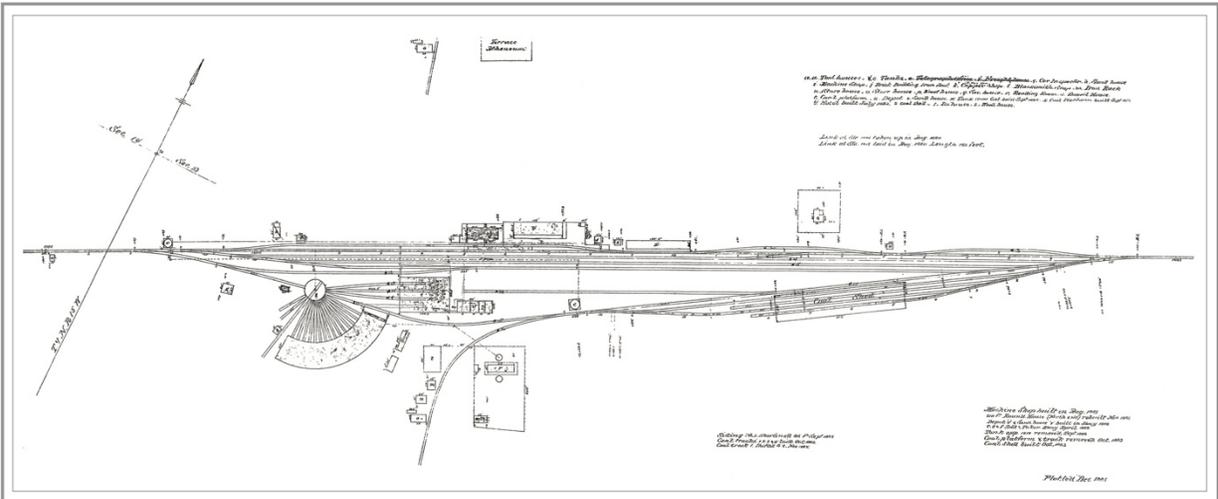


Teaching Guide: *Archaeological Excavation at Terrace, Utah*



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ASIA CENTER

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ORGANIZING QUESTIONS

- Why was there a Chinatown in Terrace, Utah?
- What can we learn about the past from an archaeological site like Terrace?
- How did Chinese railroad workers shape Utah's economy and society?

INTRODUCTION

This lesson introduces students to the recent archaeological excavation of Terrace, Utah, railroad town that played a key role in the history of the transcontinental railroad and Utah's Chinese community but has been abandoned for more than a century. In learning the history of Terrace, the story of how state archaeologists and the descendants of Chinese railroad workers decided to excavate the site, and the artifacts they found, students gain memorable insight into how forgotten places and peoples can be rediscovered. Students work directly from artifacts from the Chinese railroad workers at Terrace to understand how these workers came to work on the railroad, what their lives were like, and how they maintained aspects of their homeland's culture even as they contributed to the history of Utah and the United States.

OBJECTIVES

In this lesson, students will learn:

- how scholars interpret the past without written primary sources
- what material culture can teach us about the past
- the limitations of relying on recorded history to understand the past
- the central contributions that Chinese railroad workers made to the first Transcontinental Railroad
- how Chinese railroad workers shaped Utah's economy and society
- the push/pull factors that led Chinese laborers to immigrate to the United States and Utah in the 1800s
- the benefits of Chinatowns for Chinese railroad workers

SEPARATE MATERIALS

- Video: "[Terrace, Utah](#)" (running time: 14 minutes, 18 seconds)
- Presentation: Artifacts from Terrace, Utah [separate PDF file]
- *OPTIONAL*: Engineering drawing of Terrace rail works from 1885 printed in long, scroll format
- *OPTIONAL*: [Teaching trunk: Archaeological Excavation at Terrace, Utah](#)

INCLUDED MATERIALS

Click or select any resource below to jump to its location in this teaching guide.

- **Handouts:**
 - [Background to Chinese Workers on the Transcontinental Railroad](#)
 - [Note-taking Sheet for Terrace Video](#)
 - [Investigating Artifacts from Terrace](#)

- [First-Day Reflections](#)
- [Reconstructing Terrace](#)
- [Sending a Letter and Memento Back to China](#)
- [Transcript: “Terrace, Utah” Video](#)
- [Answer Key: Note-taking Sheet for Terrace Video](#)
- [Slide Script: Artifacts from Terrace, Utah](#)
- [Teacher Background: Why Was Terrace Abandoned?](#)
- [Reference: Connection to Utah State Core Standards](#)

EQUIPMENT

- Computer with Internet access and a Flash-enabled or HTML5-supported web browser
- Computer projector and screen
- Computer speakers
- Colored markers or highlighters

TEACHER PREPARATION

Instructions and materials are based on a class size of 30 students and a 50-minute class period. Adjust accordingly for different class sizes and class lengths.

1. View the video, “Terrace, Utah” and review the transcript.
2. Make one copy of each handout for each student in your class.
3. Familiarize yourself with the content of all materials.
4. Set up and test computer, projector, and speakers. Confirm ability to play audio and video and project sound audibly to students.
5. OPTIONAL: Check out the Terrace, Utah teaching trunk from [the University of Utah’s Asia Center](#).
6. OPTIONAL: From the digital file, print the engineering drawing of Terrace rail works from 1885 in a long, scroll format to display on a classroom wall during the lesson.

TIME

Four 50-minute class periods, plus preparation and homework

PROCEDURES

PREPARATION

To prepare for the lesson, distribute one copy of “Background to Chinese Workers on the Transcontinental Railroad” to each student. Assign this as reading in preparation for the first class period.

DAY ONE

1. Distribute one copy of “Note-taking Sheet: Introduction to Terrace” to each student.
2. Play the “Terrace, Utah” video (running time: 14 minutes, 18 seconds). Ask students to take notes on the handout as they watch the video.

3. Divide the class into groups. Distribute one copy of “Investigating Artifacts from Terrace” to each student. Provide the “Artifacts from Terrace, Utah” PDF to students. Allow groups the rest of the class period to review the images of the artifacts and complete the tasks on the worksheet.

ALTERNATIVE: If you have the physical teaching trunk, pass these items to the class and use the guide included with the trunk to explain the items to students.

4. Distribute the “First-Day Reflections” handout and ask students to complete this as homework.

DAY TWO

1. Collect “Note-taking Sheet for Terrace Video” and “First-Day Reflections” for assessment.
2. Use a projector to display the images in “Artifacts from Terrace, Utah” to the entire class. Use the Slide Script to reveal each artifact to the class and ask follow-up discussion questions. Students should complete the last two columns of the artifact worksheet as you discuss each artifact.
3. If you have time once you finish walking through the artifacts, use the following questions to lead a discussion:
 - How do the objects we discussed, both from today and the past, reflect different cultures?
 - What can we learn about the Chinese railroad workers from these artifacts and objects?
4. Collect responses to the artifacts worksheet in “Investigating Artifacts from Terrace” for assessment.

DAY THREE

1. Divide the class into 6 groups of 5 students each. Distribute one copy of “Reconstructing Terrace” to each group. Inform the class that they will work in groups to complete the project as described on the handout. Review the instructions as a class and answer any questions students have.
2. Allow groups the remainder of the class period to complete the task described on the handout, checking in with students as needed.

DAY FOUR

1. Ask students to reconvene in their groups of 6. Allow them about 5 minutes to prepare for their presentation to the class
2. Allow approximately 3 minutes for each group to present and explain its entry to the class.
3. Once all groups have presented, take a class vote on the winning entry. Announce the winner.
4. Collect group entries for assessment.
5. Lead the class in a concluding discussion based around this question: “What did you learn from this activity and the presentations?”
6. Distribute one copy of “Sending a Letter and Memento Back to China” to each student and instruct them to complete this individually as homework.

ASSESSMENTS

The following are suggestions for evaluating student work in this lesson:

1. Evaluate student responses to “Note-taking Sheet for Terrace Video”
2. Evaluate student responses to the worksheet in “Investigating Artifacts from Terrace”

3. Evaluate group presentations in response to the “Reconstructing Terrace” assignment
4. Evaluate student responses to “Sending a Letter and Memento Back to China”

Handout: Background to Chinese Workers on the Transcontinental Railroad

Credit: “Chinese Workers on the Transcontinental Railroad” lesson plan, Christopher Merritt, Ph.D., 2019.

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 19th 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.

Handout: Note-taking Sheet for Terrace Video

- 1. What made the first transcontinental railroad so important to the United States?**
- 2. Why did Terrace fade away as a town after 1904?**
- 3. Why was Terrace selected as a location for a railroad town?**
- 4. What types of buildings were likely in Terrace during its heyday?**
- 5. How did water get to Terrace?**
- 6. Why is it so important to leave archaeological sites and artifacts undisturbed?**
- 7. What tools did the archaeological team use to excavate Terrace in 2020 and 2021?**
- 8. What artifacts from China did the team find during the excavation?**
- 9. How did the excavation team mark the completion of their work?**

Handout: Investigating Artifacts from Terrace

Like an archaeologist, you now get to investigate several items similar to those found in the Terrace excavation!

Chinese railroad workers brought with them a unique set of materials to continue their traditional life and foodways. Ceramics imported by Chinese immigrants in the United States included tableware, serving ware, and storage vessels.

Archaeologists discovered 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 you'll investigate were made in China and imported to the United States by Chinese immigrants.

Instructions

1. Read the page titled "Food and Supplies at a Chinese Railroad Store, 1873."
2. Review the images of 16 objects similar to those found at Terrace, Utah. Try to guess what each object is. What might it be used for? In what ways is it similar to objects you use? You can discuss your responses with members of your group.
3. Write your guess in the "What do you think this is?" column of the artifact worksheet.

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 19th Century was demeaning and disrespectful to Chinese people. **It is inappropriate to use today.**

Artifacts Worksheet

Object	What do you think this is?	Correct Answer	How does this object compare with similar items you might use in your home?
A			
B			
C			
D			

E			
F			
G			
H			
I			

J			
K			
L			
M			
N			

O			
P			

Handout: First-Day Reflections

Instructions: As homework, write two paragraphs in response to each of these prompts. Your teacher will collect these at the beginning of the next class period.

1. What was most interesting or surprising to you about the history of Terrace, Utah, or the archaeological work done to excavate the site?

2. What other artifacts would you want to find to learn more about life in Terrace's Chinatown? Why did you choose these artifacts?

Handout: Reconstructing Terrace

Background: A historical society has announced a contest to create a restored map of Terrace, Utah to show the public what the town looked like when it was fully operational in the 1880s and 1890s.

The society will review several entries and award the winning commission to the entry that it deems most accurate based on existing historical records.

Instructions:

As a group, prepare an entry for the commission that meets the following criteria:

- Shows a representation of Terrace in the time of the Transcontinental Railroad, whether as a map or drawing. Clearly label all buildings and locations.
- Explains the purpose of each building and location
- Cites the sources for your map and representations. What leads you to believe that this was how Terrace looked?

Once your entry is done, select one person in your group to present it verbally to the commission. Presentations must be three minutes or less.

Resources

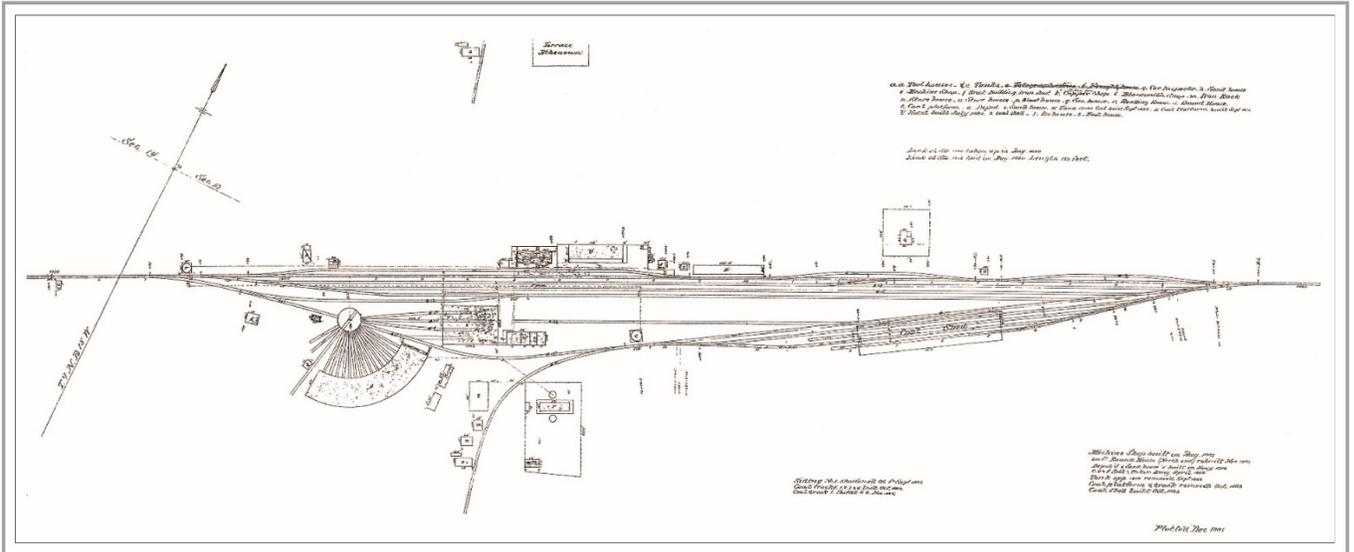
1. Review the original and edited engineering maps of Terrace on the next page
2. Examine the three photographs from Terrace in the 19th century on the page after that
3. Watch the “Terrace, Utah” video again for representations of what the town may have looked like in its heyday

Definitions

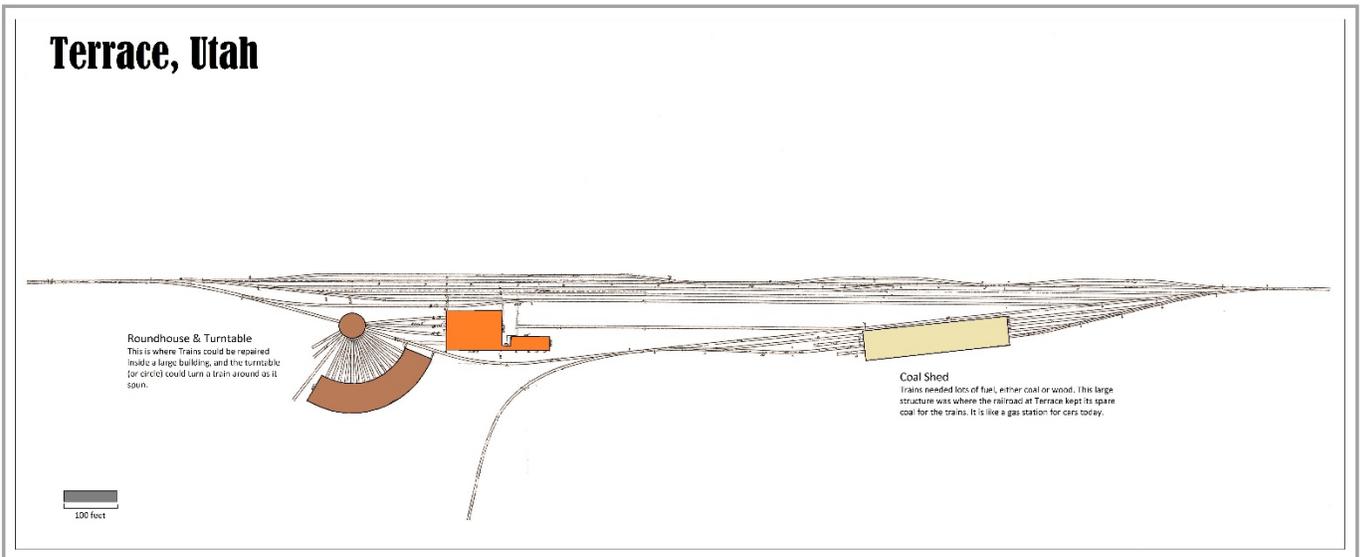
Here are definitions for some terms you may come across:

- **Train depot:** another name for a train station, which is a terminal where trains load or unload passengers or goods
- **Railway turntable or wheelhouse:** device for turning locomotives (or other trains) around to orient them in a different direction
- **Railway roundhouse:** building used to repair and store locomotives, usually located next to a turntable
- **Coal shed:** building for storing spare coal, which served as the fuel for many trains

Engineering drawing of Terrace rail works (original, December 1885)



Simplified version of engineering drawing (created by Chris Merritt, 2022)



Photograph of Terrace rail lines in the late 1870s



Photograph of buildings in Terrace in the late 1870s



Photograph of the outskirts of Terrace in 1875



Handout: Sending a Letter and Memento Back to China

Instructions: Imagine you were one of the Chinese railroad workers in Terrace and who wanted to send a letter back to your family in China along with a memento from your life in Terrace. Write a 1-2 page letter to your family that addresses the following:

- What is Terrace, Utah like? How did you end up living there?
- How do you like the most about working on the railroad? The least?
- What is your life like when you aren't working?
- What do you like most about living in Terrace?
- What do you miss the most about home?
- What item are you sending your family as a memento of your life in Terrace? Why did you choose this?
- What do you want to do and where do you want to go when you finish working on the Transcontinental Railroad?

Remember that your family has never left home or seen a country like the United States, so you'll have to be very descriptive!

For inspiration, view the following portions of interviews with two descendants of Chinese railroad workers:

- [2013 interview with Russell Low](#), from 00:33 to 05:35
- [2013 interview with Connie Young Yu](#), from 4:12 to 08:06 and from 25:22 to 30:51

Transcript: “Terrace, Utah” Video

Narrator: Chris Merritt, Ph.D.

Hello! My name is Chris Merritt and I’m an archaeologist here at the State of Utah. And today I’m going to be talking to you about the town of Terrace, Utah, located in the very northwestern corner of our state. Terrace was a major booming railroad town between the 1870s and 1900, and then slowly faded away. The last few years we’ve spent many, many months excavating and researching this town’s history and exploring the Chinese railroad worker component of that history. We’ve partnered with the land manager, the Bureau of Land Management, to do these investigations, along with the Chinese Railroad Workers Descendants Association.

So to put this into context: when the Transcontinental Railroad was finished on May 10, 1869, the railroad spanned from Sacramento, California on the west to Omaha, Nebraska on the east---the first true transcontinental connection of railroads, allowing freight and passengers to move freely between these two parts of our country. The section here in Utah---not only were we the end of the line when the construction completed on May 10, 1869---but it was also one of the more picturesque and difficult parts of the journey. From 1869 until about 1904, most railroad traffic heading east or west to the center part of our country came through this landscape.

The map on the screen right here shows 87 miles of the Transcontinental Railroad stretching from Golden Spike National Historical Park on the east to the Nevada border on the west. Today this landscape is actually managed by the Bureau of Land Management, as the railroad abandoned this segment in 1904 when they constructed the cut-off that went across Great Salt Lake. That cut-off allowed a lot faster train travel and avoided some of the steep passes and mountains. And between 1904 and the 1940s, this landscape slowly faded. The railroad used it less and less until it was completely abandoned. The town of Terrace there on the left was a major booming community on this stretch of railroad until finally its demise as well.

This is an example of one of the intact railroad trestles that you can still see on this landscape. Because this is on federal land, public land, you can go visit this landscape any time of year and learn more about that railroad history, and also see the landscape of which the railroad workers lived and died.

So, Terrace: Terrace was started in April of 1869 as the Central Pacific Railroad crews were moving eastwards towards Promontory Summit. Even at this point, the railroad knew that they had to establish a large maintenance community somewhere in western Utah. This is because if you have a steam engine and it breaks down, you can’t waste days or hours hauling it to a community 400 miles away. And the location of where Terrace became constructed was just a nice middle point between Elko, Nevada on the west and Ogden, Utah on the east. The maintenance would also have included, you know, not only just fixing of steam engines, but you would have had your coal and wood dumps to fire them, you would have had a water depot there, you would have had large railroad crews and maintenance crews, so staff. And so very quickly the town of Terrace grew from nothing on the desert to a bustling community of up to 500 to 600 people at its peak.

This historic photograph on the right shows the large two-story train depot that was the main fixture of Terrace’s main street, and you can see the businesses there behind it on the right. The railroad is right there on the left of the photo, and that is the main line that was going between Sacramento and Omaha.

When we look at the census records, which is where we go and count folks in our community, in 1870, Terrace had the third largest Chinese population in the state, and this speaks to how important the Chinese were to the railroad's construction, but also its maintenance.

This is sort of an artist's reconstruction of that main street view of ... a lot of times we think of the west and these ghost towns that have disappeared as fairly bland, fairly blank places ... but in reality they had lots of people, bustling, many different languages being spoken and, of course, color. Color was a thing that people don't think about because we only see the 19th century largely through black and white photos. On Terrace's main street there were two large hotels so travelers on the railroad could stop, stay overnight, have a meal. There were saloons, there was a bakery, a meat market, dry goods stores, and now through the archaeology we think we've actually even identified a Chinese business, whether that's a laundry or a restaurant, there on main street.

Water was incredibly important. Because this is the desert, there's not a lot of water there at Terrace, so the railroad actually had to construct a 13-mile pipeline to go from the mountains to the west and develop some springs and collect spring runoff from the snow and then pipe it all the way into Terrace so it could be used for the trains, so they could be firing the steam engines, but then secondarily for people to drink water, and then for beautification because there are planted trees in Terrace. And so that's a lot of investment to bring water to a community.

So the reality of Terrace's abandonment is it largely was erased from the map by the early 20th century. In this aerial image, you can see it on Google Earth, you see the roundhouse right here so this is a big ... and this scale is really high, this is about a 100-foot diameter ... and that's where you could pull a steam train off and turn it around. And then these are maintenance bays that are still, you can still see, on the ground. The structures are all gone but you can still see imprints. You see the main line of the railroad cutting across it from left to right, and then over here you see all these little pits. These are the main street businesses that were in those photos and reconstruction drawing. And then on the very, very far corner --- this little line of dark spots --- these are Chinese homes. Chinatown was actually on the back side of the industrial works and on the other side of the town from the white side of the community.

We've had a lot of problems out at these sites because people like to go out and dig, looking for artifacts that they can take or sell, or shooting of signs or piling of artifacts. This is all really bad behavior. Think of your favorite history book: your favorite history book has all these really great stories and if you rip pages out, if you shuffle pages around, you change the story and that's what archaeology does, is we try to take the story that's on the ground and interpret it because a lot of this doesn't exist in history books. And the more you damage those sites through digging or looting, the more we can't tell that story.

Now I said earlier the excavations we've done at Terrace were part of a collaborative effort with the Chinese Railroad Workers Descendants Association, including Utah's first Chinese-American state legislator Karen Kwan and Margaret Yee, who's been in Utah for 55-plus years as a community and business leader. These folks were instrumental into our understanding of the story and also to urge us to go do archaeological work.

So in 2020 and 2021, we did excavations and we used all the tools and trade of archaeology. We used ground penetrating radar, which sends radar waves into the ground looking for buried features. It's a non-invasive way for us to look for things. Then we did excavations, the classic square holes and shovels and trowels and we found an intact Chinese home. We did collect artifacts on the surface but we mapped them, we photographed them, we described them, and it's really an important, slow process.

This is an example of what a ground penetrating radar looks like and this is a slice looking down. You can see those little dark spots are something buried underground, so that's where we targeted excavations. As we started excavations, we do one-by-one-meter squares, so three-foot-by-three-foot squares, a standard archaeology practice in the world, not just the United States. And so the very first unit we started excavating down and as we got a few layers down we started noticing lots and lots of artifacts and lots of lots of charcoal from a burning event. And as we got to the very bottom of that unit, it actually found intact floorboards. So think of those wooden floorboards in old houses, at the bottom of our unit but those were laid down by a Chinese railroad worker probably in the 1870s before they lived in that house for maybe 20 years, and then it was abandoned when the town was abandoned.

And that just gives you a scale of that house. It wasn't very big. And this is the first fully excavated Chinese home on the Transcontinental Railroad. Archaeology is not usually that exciting to the outside world because we are very slow, we are very patient, we are very methodical, and that allows us ... that allows us to do very good work. So we take lots of notes, lots of paperwork, we screen everything through these little screens in the center to capture even the smallest artifacts and then in the worst or the smallest case we might be using little teeny dental picks and bamboo shoots to clean small, small artifacts so we don't damage them. These simple stories are really important for us and being as careful as possible is really important.

And then this is what we opened, this fully excavated Chinese house. There's its footprint. It's only about a little over 6 feet wide by about 9 feet long, so a small, modest house for a Chinese railroad worker. And then this just gives you an idea of sort of the size, you know, just large enough for a couple men, maybe two to four Chinese men would have lived in this house with a door on that downhill side. You can see that the back walls are vertical wood and you can still see those floorboards that we had started with.

The artifacts themselves gave us a big story. And these are the artifacts that tell the story of those residents. We have on the left, that's a Chinese rice bowl, a wintergreen style, which is a really nice, beautiful green glaze. Then on the right is a Chinese coin. The Chinese coins in this time came from China, probably minted in the 1600s, 1700s and it wasn't really used for money like we use money. It was more of like a good luck charm, so think about having a rabbit's foot or some of those aspects, and it was used more in those contexts.

We did find lots of evidence of food. When the Chinese came here to work on the railroad or other businesses, they did bring a lot of their culture with them. So we do see---like that center and right photo, in the soil, which is a great place to preserve, people don't think that this stuff preserves well--- peanut shells, coconut shells, Chinese olive pits, melons like watermelon. This is all brought by the Chinese workers from China in dried or pickled form and then used in traditional cooking, same as if you went to a Chinese restaurant today, a South China style, that's why you see peanuts. That tells us a bit about the diet and the residents continuing a lifestyle that they would have seen at home.

The stories here are also personal. A lot of the Chinese we don't see in historical records, we don't have diaries, we don't have letters. And so how do we tell the personal stories? And artifacts allow us that glimpse into those. And the image on the left is a Chinese inkstone. That is a fragment we found inside the house. On the bottom is an example of the whole Chinese inkstone. And the Chinese had sort of these long squared sticks of solid ink and you would put a little bit of water on that platform and grind it to make it liquid again and then you could do calligraphy or brush painting. This tells us that the resident of that home was likely literate. He was likely writing letters home, maybe helping his friends there in

Chinatown write letters home to describe their experiences to their loved ones. And so that gives us a nice connection of like, "While they're so far from their families, they're still able to maybe send letters home, but did they ever receive them back?" and so it gives us that personal, personal story.

At the close of the excavation---this is really important---when we do excavations it's not just to go dig and find things; it's to uncover important stories. And in the case of our relationship with the Chinese Railroad Workers Descendants Association, we honored their story, their past, by honoring the people that worked and lived in Terrace. By excavating their homes, we can tell their story. In archaeology, once we're done digging, we put the dirt back where we were so it protects what we didn't excavate or protects it from deterioration so the next generation of archaeologists can come back. That's a very respectful thing to think about for your ancestors, is protecting their legacy. And so before we did our backfilling, filling the hole back in, the Chinese community led us through a ceremony to honor the ancestors and we all, you know, thought about the lives of those workers and how they still are in that place.

And I thank everybody that participated in the excavation and that has allowed us to work on lesson plans and to tell a broader story using the hard work of archaeologists and descendant community members to tell a more broad story of the impact of the Chinese workers and the lives of those that live there in Terrace. So thank you all, and I hope you continue to explore.

Answer Key: Note-taking Sheet for Terrace Video

1. What made the first transcontinental railroad so important to the United States?

It was the first form of mass transportation that ran coast-to-coast, allowing freight and passengers to move safely and much more quickly across the country. The completion of the railroad led to greater economic growth and movement of people, news, and ideas across the country.

2. Why did Terrace fade into abandonment after 1904?

In 1904, the railroad completed a new stretch of line called the cut-off that ran across the Great Salt Lake. This line was a more direct road and avoided several mountain passes, making it faster than the original line that went through Terrace. The railroad used the stretch of line that went through Terrace less and less. Since Terrace was a railroad town, it declined with the fall in rail traffic and by the 1940s the town was completely abandoned.

3. Why was Terrace selected as a location for a railroad town?

The Central Pacific Railroad, which was building that portion of the Transcontinental Railroad, needed a train maintenance facility somewhere in western Utah so that they could repair any engines or equipment that broke down without having to haul it hundreds of miles away. The location of Terrace happened to be a middle point between the two nearest existing rail communities of Elko, Nevada on the west and Ogden, Utah on the east.

4. What types of buildings were likely in Terrace during its heyday?

Terrace had several buildings dedicated to railroad work: the train depot, roundhouse, and maintenance bays. For travelers, there were two hotels. There was also housing for the railroad workers, separated into two areas: one area for the white workers and another for the Chinese workers. The town also had a bakery, a meat market, dry goods stores, and possibly even a Chinese business, whether a laundry or a restaurant.

5. How did water get to Terrace?

The railroad company built a 13-mile pipeline to the mountains to the west and developed some springs to collect spring runoff from the snow. This was then piped all the way into Terrace.

6. Why is it so important to leave archaeological sites and artifacts undisturbed?

Archaeology uses artifacts to tell the story of the past. Any alteration of artifacts or archaeological sites distorts the historical information that archaeologists use to try to understand the past.

7. What tools did the archaeological team use to excavate Terrace in 2020 and 2021?

The archaeological team used ground-penetrating radar, square holes, shovels, trowels, screens, dental picks, and bamboos shoots to do the excavation work.

8. What artifacts from China did the team find during the excavation?

The team found many artifacts that the Chinese railroad workers brought from China. These included a glazed rice bowl, Chinese coins, remains of food (peanut shells, coconut shells, olive pits, melons), and fragments of a Chinese inkstone.

9. How did the excavation team mark the completion of their work?

At the end of the excavation, the team filled in all of the holes they created and returned everything back to the state they found it. They also joined members of the Chinese Railroad Workers Descendants Association in a ceremony to honor their ancestors.

Slide Script: Artifacts from Terrace, Utah

After students view the artifacts and write their initial guesses on the artifacts worksheet, facilitate a class discussion about the images using the script below. Let students provide their observations first, then provide additional information. Direct students to record additional notes on their handouts. Please note that more focus is spent on certain artifacts than others.

Artifact A: Melons, Peanuts, and Olive Pits (Foodways)



Most Chinese immigrants in the 19th century came from southeast China, where Cantonese cuisine formed the basis of most meals. Archaeologists can find remains of what people ate by looking at the seeds left behind. At Terrace, archaeologists found many food items imported from China such as watermelon seeds likely from dried fruit snacks, olive pits from a pickled Chinese variety, and peanut shells (think of Kung Pao chicken dishes at today's Chinese restaurants). These types of foods would have been brought to the United States inside the brown-glazed stoneware jars found at the site.

Discussion Questions:

- What did you have for dinner last night? Did you have any parts of the meal that you didn't eat, like a seed, pit, or even a bone? What does that tell future archaeologists about what you ate?
- These seeds and pits stayed in the ground for over 130 years. What does that tell you about how important this site is for telling us a complete story of the Chinese?
- What foods do you eat that you import from a long way because you enjoy them so much?

Artifact B: Coconut Shells (Foodways)



Along with melon seeds and peanuts, coconut shells have been found at several archaeological sites in the American West, including Terrace. The tough and sturdy shells of a coconut made them easy to transport, but imagine how far that coconut traveled to Utah before being eaten and then trashed. Coconut meat (the white part of the inside of a coconut) was a great addition to many Chinese meals, and even the milk inside was a way to flavor food.

Discussion Questions:

- Have you ever tried to open a coconut still in its shell? What tools did you need and what does that tell you about what tools the Chinese must have had?
- Do you have any favorite foods that use coconut in its recipes? How does that reflect on your life and your family?
- What other types of foods come in such a tough protective shell, and how does that help people transport them?

Artifact C: Broken Glass Bottles (Foodways)



Many foods and drinks came in glass bottles in the 19th century. While glass bottles were rarely imported from China, Chinese immigrants would have supplemented their diet with goods from the U.S. or Europe. For example, archaeologists found many types of bottles in the Terrace excavations including those that held ketchup, mustard, pickles, and even ink for writing. The color and shape of bottles can tell us a lot about their contents even if they are broken. Archaeologists rarely

find whole bottles given that they were trash!

Discussion Questions:

- What kinds of food in your refrigerator or cabinets are in glass bottles?
- Look at the labels of those food bottles and see where they come from. How does that help you understand your connection to the greater world?
- Today we store most items in plastic containers. How does that compare with glass bottles in terms of durability or breakage?

Artifact D: Porcelain Teapot (Food Preparation)



Tea has deep roots in Chinese society and is the most popular drink in China. There are many stories of how Chinese railroad workers avoided getting sick from drinking creek water by boiling it first to make tea. Tea itself would have come in large metal boxes, but it would have been brewed in delicate porcelain tea pots. Archaeologists discovered fragments of a

tea pot in the excavations at Terrace, highlighting this common drinking habit.

Discussion Questions:

- What have you been taught about the need to boil water to kill bacteria if you are out hiking or camping?
- Do you or your family and friends drink tea? If so, what kind of tea, and where does it come from?
- Why do humans decorate simple items like tea pots with beautiful floral patterns or symbols?

Artifact E: “Bamboo” Style Bowl (Food Preparation)



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 F: “Celadon” or “Wintergreen” Style Bowl (Food Preparation)



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 G: “Four Flowers” or “Four Seasons” Style Spoon and Bowls (Food Preparation)



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 H: Brown-Glazed Stoneware Barrel Jar (*Food Preparation*)



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 I: Spouted Jar (*Food Preparation*)



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 J: Spice Jars (Food Preparation)



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 K: Cleaver (Food Preparation)



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 L: Personal Items Box (Cultural Connections)



The Terrace excavation uncovered a small wooden box in the corner of a house that measured only 8 inches by 12 inches. This box was unfortunately empty, but given its location archaeologists assume that it was used to hold personal items for the houses' occupants. It may also have been part of a Buddhist shrine that many Chinese had in their homes as part of their religious practice.

Discussion Questions:

- Do you have a trunk, shoebox, or other box to hold items that are personally important to you? What is in there, and what does that say about you?
- Where do you keep that box in your room? Is it easy to find or is it hidden? And why?
- If this were a personal items box, what do you think the Chinese owner would have had inside?

Artifact M: Inkstone and Ink Stick (Cultural Connections)



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 N: Chinese Coin (Cultural Connections)



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 O: Wei-chi pieces (Cultural Connections)



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?

Artifact P: Medicine Bottle (Health)



Chinese Traditional Medicine uses a mixture of herbs, minerals, and even animal parts to treat each person's unique ailments. The Chinese brought herbal medicine to the United States when they arrived in the 19th century. Herbal medicine is now sold in nearly every supermarket and drug store. A medicine bottle found near Terrace still had some of the medicine in it from the 19th century. When archaeologists tested it, they found that it was a mineral drug that was intended for relieving internal bleeding.

Discussion Questions:

- Have you had to take medicine because of a cold? What kind of bottle does it come in?
- What does the type of herbal medicine found in Terrace tell us about the lives of those Chinese workers?
- Have you ever broken a bone or gotten a bad scrape? You probably went to the hospital, but what would you have done if there were no hospitals like for the Chinese railroad workers in Terrace?

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

ADDITIONAL RESOURCES

You might find this organization by categories useful in helping the class understand how the artifacts were used:

Foodways

1. Melons, peanuts, and olive pits
2. Coconut shells
3. Broken Glass Bottles

Food Preparation

1. Porcelain teapot
2. "Bamboo" style bowl
3. "Celadon" or "Wintergreen" style bowl
4. "Four Flowers" or "Four Seasons" style spoon and bowls
5. Brown-glazed stoneware barrel jar
6. Spouted jar
7. Spice jars
8. Cleaver

Cultural Connections

1. Personal items box
2. Inkstone and ink stick
3. Chinese coin
4. Wei-chi pieces

Health:

1. Medicine bottle

Vocabulary

- **Archaeology:** Study of humans through the physical remains of what they left behind.
- **Archaeological Site:** A place where humans lived, worked, or played and material was deposited.
- **Artifact:** Any object made, modified, or used by humans.
- **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.

Teacher Background: Why Was Terrace Abandoned?

Terrace owed its life, and death, to the presence of the railroad the freight, passengers, and business it brought. In the 1890s, the Southern Pacific Railroad who now owned the line in northern Utah decided to construct a new railroad line across the middle of Great Salt Lake. This bypass would cut nearly 40 miles off the distance and also avoid three steep mountain passes that slowed trains and used lots of fuel. In anticipation of the new railroad opening most of the railroad structures (roundhouse, turntable, machine shops) were moved to Ogden, Utah or Montello, Nevada by 1904.

The Lucin Cutoff, as the new railroad line was soon to be called, opened in 1904 and Terrace and all the other towns along the original Transcontinental Railroad were largely forgotten. While trains still used the original branch of the railroad after 1904, almost all the rail traffic now used the straight and flat Lucin Cutoff.

Even before the cutoff, a fire ravaged Terrace destroying most of its downtown businesses in 1901. By 1910, the Federal Census only shows about 50 people still living in and around Terrace, a small number compared to the 500-600 that lived there only ten years earlier. There were no Chinese railroad workers left in Terrace by 1910.

The railroad finally abandoned all of the northern arm of the Transcontinental Railroad in 1942, ripping up the rail to melt down for World War 2. The old railroad became a dirt road for cars and trucks, and now you can visit this forgotten landscape as it is managed by the federal government's Bureau of Land Management, as a Backcountry Byway.



A view of the Lucin Cutoff and Mid Lake Station in the middle of Great Salt Lake. This railroad bypass is what led to the end of Terrace. *Courtesy of the Utah Historical Society.*

Reference: Connection to Utah State Core Standards

7-12 Social Studies: Utah Studies

UT Strand 2: Utah's Diverse Peoples (Ca. 1847-1896)

- UT Standard 2.2
Students will compare the causes and lasting effects of various non-Mormon groups' migrations to Utah. (history)
- UT Standard 2.6
Students will explain how agriculture, railroads, mining, and industrialization created new communities and new economies throughout the state. (economic, geography)

7-12 Social Studies: United States History 1

U.S. Strand 6: Expansion (Ca. 1783-1890)

- U.S. Standard 6.3
Students will identify the economic and geographic impact of the early Industrial Revolution's new inventions and transportation methods, such as the Erie Canal, the transcontinental railroad, steam engines, the telegraph, the cotton gin and interchangeable parts.

7-12 Social Studies: United States History 2

U.S. II Strand 1: Industrialization (Ca. 1880-1920)

- U.S. II Standard 1.2
Students will explain the connections between the growth of industry, mining and agriculture and the movement of people into and within the United States.

7-12 Social Studies: World History

WH Strand 5: Revolutions, Industrialization, and Empires (Ca. 1750C.E. – 1914 C.E.)

- WH Standard 5.2
Students will analyze the underlying and immediate causes and the immediate and long-term effects of the Industrial Revolution on nations that industrialized versus those that did not.
- WH Standard 5.3
Students will use a variety of data to identify push and pull factors affecting migration during the Industrial Revolution.