The La Grange Mine: Changing the Landscape in the Quest for Gold

Located on the slopes of the Trinity Mountains, the La Grange Mine serves as a silent reminder of what people will do in their quest for gold. Today, all that remains of this mine are some discarded things left by the miners. Only the scars on the land and the isolated items left behind can tell us the story of this once-great mine.

The La Grange Mine story began in the late 1860s. It was during this time that the mountains west of Weaverville in Trinity County became a center for hydraulic gold mining. The gold found in this area was in such low amounts that special methods were needed to remove it from the ground. The method used was known as hydraulic mining. It involved washing the dirt with large amounts of water. In order to make sure that there was enough water for hydraulic mining to take place, in 1873 a group of local miners got together to form the Weaverville Ditch and Hydraulic Mining Company.

This company was bought by Baron Ernest de La Grange for $250,000. Between 1893 and 1915, the La Grange Mine became the largest hydraulic mine in California. By the early 20th century, it had become one of the largest gold mines in the world.

Baron La Grange ran the mine until the rising costs of labor, powder, and steel after World War I resulted in a loss of money. The mine closed in August 1918 and much of the equipment was sold for scrap. By the time it closed,

(Top photo shows La Grange Mine circa 1930s; Bottom photo shows the La Grange workers with gold bars recovered from mine - California Department of Conservation, Division of Mines and Geology Library, and Trinity County Historical Society Archives Photos.)

the La Grange Mine produced $3,500,000 worth of gold. Some 100 million cubic yards of earth and gravel had been washed from the slopes of Oregon Mountain in order to get the precious metal. In places, the tailings (waste rock) left behind from the La Grange mining operation range from 40 to 120 feet deep. By asking questions about what was left behind we are able to learn many things about the past that were not written down. It is this ability to learn about the past that makes the La Grange Historic Mine District an important archaeological site.

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This lesson focuses on the La Grange Historic Mine District, one of the thousands of properties and districts determined eligible for listing on the National Register of Historic Places and California State Historical Landmarks. It was developed by the California Department of Transportation for use in the local schools.

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About This Lesson

This lesson is based on *the Oregon Mountain Summit and La Grange Mine Historic Properties* by Julia G. Costello and Stephen R. Wee, and *Positive Archaeological Survey Report for the Oregon Mountain Curve Correction Project, Trinity County, California* by Blossom Hamusek. The lesson was prepared by Blossom Hamusek, California Department of Transportation, Heritage Resource Coordinator for the Redding District Office.

Where it fits into the curriculum

Topics: This lesson is one that brings the important stories of California's historic places into the classrooms. It could be used in U.S. history course units on the late 19th to early 20th century mining boom, effects of industrialization on the environment, and historical archaeology.
Time Period: Late 19th to Early 20th Century
Relevant United States History Standards for Grades 3 – 4 and 5 – 12.

Objectives for students

1. To outline the basic process of hydraulic mining.
2. To describe the significance of hydraulic mining and its effects on the environment.
3. To explain the role of historical archaeology in learning about the La Grange Mine and the people who lived and worked there.
4. To research other mines in the local area and their impact on California's economy and environment.

Materials for students

The materials listed below can be used directly on the computer or can be printed out, photocopied, and distributed to students.

1. Three maps showing routes to California gold fields and the La Grange Mine.
2. Three readings about the Gold Rush in California, gold mining technology in California, the history of the La Grange Mine and Baroness de La Grange's memoirs, and Historical Archaeology at the La Grange Mine.
3. One map demonstrating the topography at the mine.
4. Three photographs of mining operations, structures, and artifacts found at the La Grange Mine.

Visiting the site

Most of the land which was once owned by the La Grange Mine Company is now under private or federal ownership. However, you can still visit the La Grange Mine California State Historical Landmark monument and view some of the equipment that was once used at the mine. The monument is located in central Trinity County, just to the west of the town of Weaverville on State Route 299.

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United States History Standards for Grades 3 – 4 and 5 – 12

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The La Grange Mine:
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relates to the following National Standards for History:

Era 6: The Development of the Industrial United States (1870-1900) and Era 7: The Emergence of Modern America (1890-1930)

Grades 3 - 4

- Standard 3D – The student understands the interactions among all these groups throughout the history of their state.
- Standard 8A – The student understands the development of technological innovations, the major scientists and inventors associated with them and their social and economic effects.

Grades 5 - 12

- Standard 1A – The student understands the connections among industrialization, the advent of the modern corporation, and material well-being.
- Standard 1C – The student understands how agriculture, mining, and ranching were transformed.
- Standard 1D – The student understands the effects of rapid industrialization on the environment and the emergence of the first conservation movement.
- Standard 2A – The student understands the sources and experiences of the new immigrants.

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Inquiry Question

(Trinity County Historical Society Archives)

What appears to be happening here?

What might these people be doing? Why?

Click here for Photo Analysis Worksheet

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Throughout history, gold has been sought after because it's durable and because beautiful objects can be made from it. Gold is scarce, but it can occur in many different kinds of rocks and in different places. Gold can occur in two ways – as lode gold (primary) or placer gold (secondary) deposits.

Placer deposits occur as a result of erosion of gold-bearing rocks. Streambeds are the most common places to find placer deposits. Water transports and deposits the gold, and because gold is heavier than water, it settles down through the lighter sands and gravels of a streambed. Lode gold is found embedded in solid rock as pockets or as veins in quartz.

California began a new era when James Wilson Marshall found gold in the tailrace of Sutter's Mill on January 24, 1848. Nearly overnight, news from the California mines reached across the United States claiming that anyone could "get rich without working." This rush for the precious metal dramatically changed any area where gold was found. Upon entering California, most of these early gold-seekers left for the easily-worked stream deposits in the Sierra Nevada. Trinity County did not escape this first flood of miners either. The local streams of the Klamath Range also had large deposits of placer gold. By the spring of 1852 there were miners working every 'river bar' along the Trinity River. Even the smaller streams that led into the Trinity River were being worked by these miners.

Once the easily reached placer gold began to decline, mining technology and equipment had to change in order to get to the deeply-buried deposits. One of these new methods was hydraulic mining. This method uses a stream of water to break up the placer deposits found in gravel banks. It was first developed to reduce labor costs and allow lower grade gold deposits to be worked cheaply. But hydraulicking quickly became a method that needed many people for it to work well. Miners would join together to form a group in order to have enough money to build and maintain the system of dams, ditches, flumes, reservoirs, and machinery. By the 1890s, hydraulic mining was near its end in the Sierra Nevada, but it was just beginning in the Trinity River area. The mountains west of Weaverville became the center of hydraulic gold mining in the Trinity River area. The La Grange Mine, located on the west side of Oregon Mountain, was by far the largest and most successful of these mines. For many years it was known as the largest operating hydraulic mine in the world.

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Map 1: Travel Routes to California

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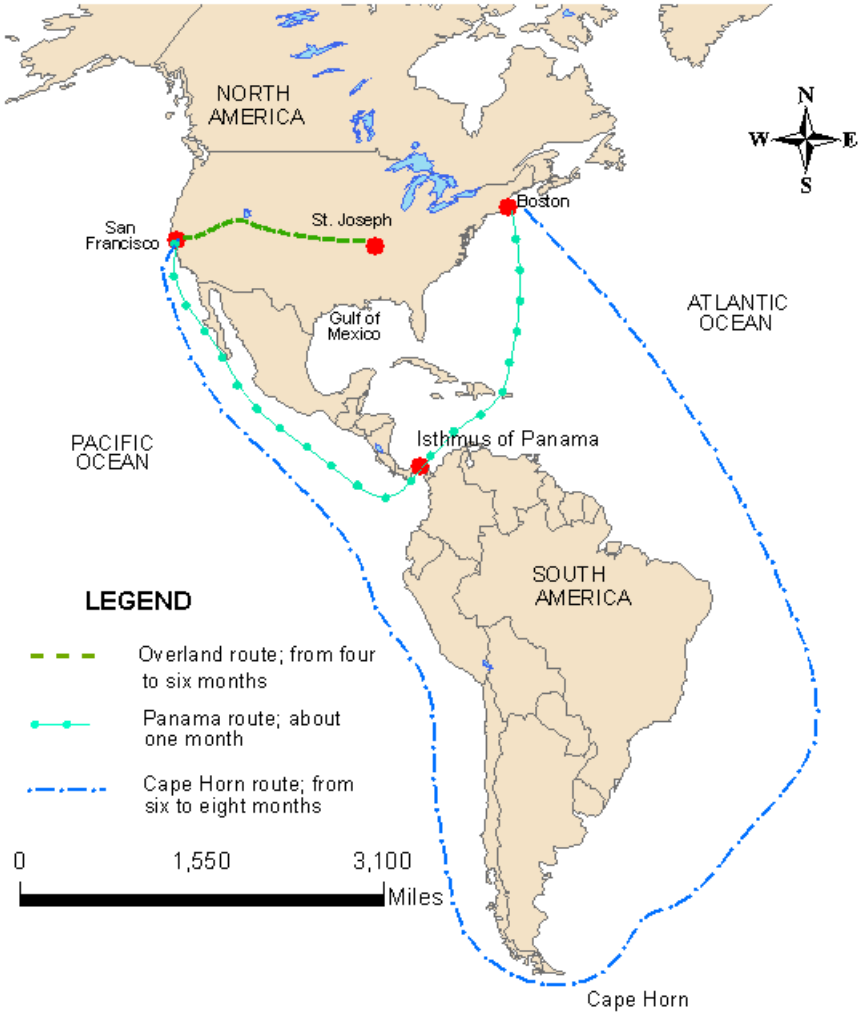

Getting to California in 1849 was not easy. Those living in the eastern United States had three options: by way of Panama, around Cape Horn, or via the Overland Trail. The quickest way to get to California was sailing to Central America and crossing the Isthmus of Panama on mule or foot. Once across the Isthmus they would board another ship for passage to San Francisco. In the beginning, the average travel time from New York to San Francisco along this route was three to five months. It was later reduced to four to six weeks. Travelers on this route risked malaria, yellow fever, cholera and many other tropical diseases. In contrast, to sail around Cape Horn, it took six to eight months to complete the 18,000 nautical mile trip. The trip around the Cape was expensive and the ships were crowded and uncomfortable. Food was often in short supply and the fierce storms off the Cape were a constant danger.

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By far the most popular routes to the gold fields were overland. In the early 1800s, fur trappers and traders had established these routes. Emigrant wagon trains bound for Oregon and California used these same trails. Beginning from trailheads in St. Joseph or Independence, Missouri, or Kanesville, Iowa, the journey of 2,200 miles took approximatily four to six months. It involved crossing very difficult terrain. The biggest risk on the Overland Trail was disease and was responsible for nine out of every ten deaths. Cholera was the greatest problem, but scurvy, typhoid fever, and dysentery took their toll on the early travelers as well. Fatal accidents also added to the death toll. It has been estimated that as many as 5,000 people died on the way to the gold fields in 1850 alone. Many emigrants used the overland route even with these risks since it did not require much money to get started.

Questions for Map 1

1. Using Map 1, locate the United States and California.

2. Locate San Francisco, St. Joseph, Cape Horn, and the Isthmus of Panama on Map 1. Use the scale provided to approximate the distance from Boston to San Francisco using an overland route.

3. Trace the three main routes to the gold fields of California from the eastern United States. What are the advantages and disadvantages of each route?

4. Why was San Francisco a likely place for the miners to depart for the gold fields?

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Map 2: Routes to California Gold Fields

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Once in California, the hopeful miners' traveling days were not over. They still had to make it to the gold fields. Most of the miners headed for the rich placer deposits in the Mother Lode region of the Sierra Nevada. But, the northern parts of the State did not escape this initial influx of miners either. The streams and rivers flowing out of the Klamath Mountains in Trinity County also had large deposits of placer gold. Attracted by the accounts of rich placers, hundreds of gold-seekers headed for the northern mines. Newspapers reported that in the northern mines "the diggings were the newest, the richest, … and would not be crowded because of the difficulty of access."

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There was more than one route to the Trinity mines. Many people chose to continue sailing north up the coast from San Francisco to end up at Trinidad Bay. The landing at Trinidad Bay was dangerous and difficult. The miners then had to cross the mountains and follow the Klamath and Trinity Rivers to the mines on foot or by mule. In 1848, Pierson B. Reading mined for gold on the Trinity River near Douglas City. Reading's claim became known as Readings Bar. On his return to the valley, Reading blazed the Shasta-Weaverville Road. The road went from the Weaverville basin up Rush Creek, over Trinity Mountain, then down to Old Shasta. By the end of 1848, mining near the town of Old Shasta was well underway. Old Shasta became the largest town in the northern area and served as a center for mining.

Questions for Map 2

1. Using Map 2, find San Francisco, Sacramento, Old Shasta, Weaverville, and Trinidad Bay.

2. Using a map of California, look at the landforms (mountains, valleys, rivers) which surround Weaverville. How would you describe Weaverville's location?

3. Using a California State map in your classroom or library, locate Douglas City. Trace the 1848 route that P.B. Reading took on his return from Readings Bar to Old Shasta.

4. What are some of the other routes that miners could have used to get to the Trinity Gold Fields?

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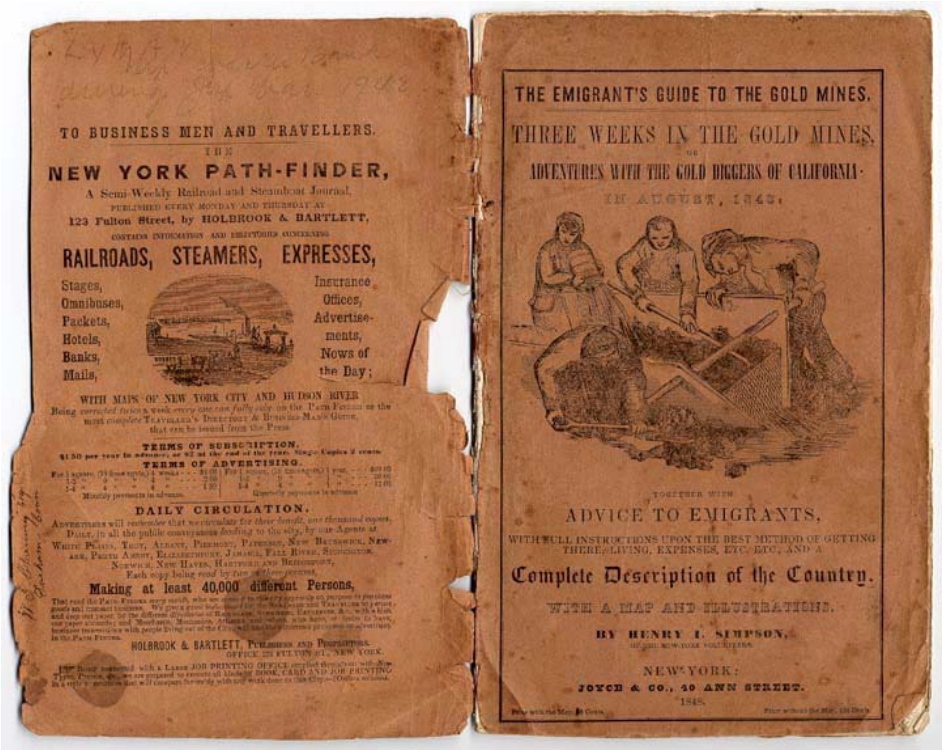
Reading 1: The Rush Was On



The rush to the California gold fields began during the winter and early spring of 1849. The sea routes drew the heaviest traffic in the early months of the Gold Rush. In the end, most people from the eastern United States ended up taking the overland routes. By the end of 1849, nearly 85,000 people had made the trip to California – 40,000 by ship, 15,000 via Mexico, and 30,000 via the Overland Trail.

Several factors led to the rapid spread of gold fever. After winning the Mexican-American War in 1848, California officially became part of the United States. There were also very exaggerated press reports that created the fantasy that every gold digger would become rich – unless they were too lazy to bend down and pick up gold. It did not take long for California to become the subject of books, maps, and schemes that often spread stories that were not true. Unfortunately,

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many emigrants quickly found out that the trip was often the best part of their experience. They soon learned that placer mining was backbreaking work.

(Original Lithograph, circa 1850; New York: Kelloggs and Comstock)

There was also a humorous side when it came to looking for gold. The gold craze of 1848 to 1849 inspired a number of satirical cartoons such as the one shown above. The title of this lithograph is the "*Independent Gold Hunter on His Way to California.*" The cartoon's caption says, "I am sorry I did not follow the advice of Granny and go around the Horn, through the Straights or by Changres (Panama)." Wearing a cooking pot, the spectacle-wearing gold hunter is loaded down with every possible tool he might need. He is shown here with a set of gold scales from which hangs a string of sausage, dried fish, and a teakettle.

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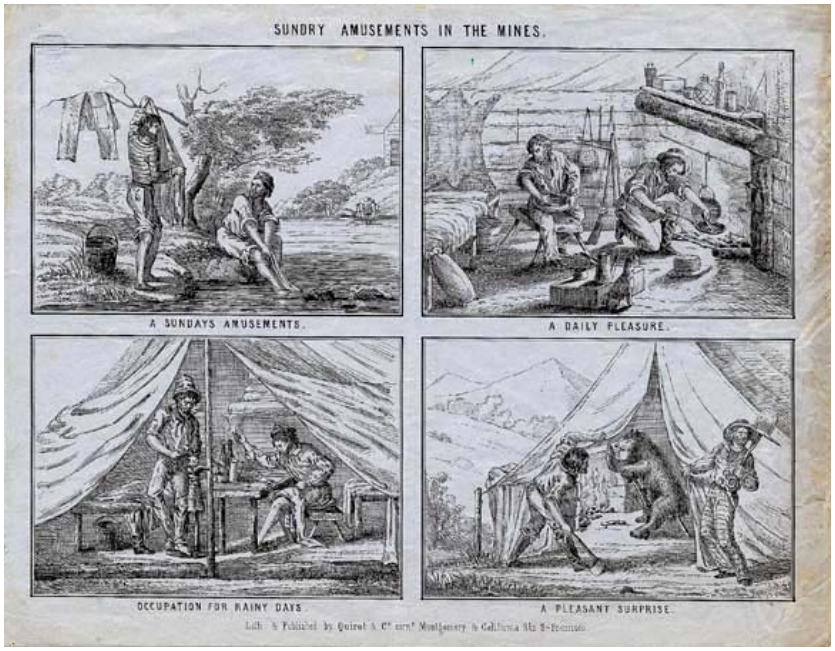
Gold fever extended beyond the borders of the United States. The fever gripped Europe, Asia, Canada, Mexico and South America as well. Dame Shirley, a noted author of the time writing from the California gold fields to her sister back east, noted that,

> "You will hear in the same day the soft melody of the Spanish language, the piquant polish of the French . . . the silver, changing clearness of the Italian, the harsh gargle of the German, the hissing precision of the English, [and] the liquid sweetness of the Kanaka."

Another trend that grew out of the Gold Rush was the creation of unique stationery known as a letter sheet. The letter sheet was a lightweight blue, gray, or white writing paper along with a printed picture, known as a lithograph. Produced mainly in the 1850s, letter sheets joined pictures with stationery. Many historians refer to these letter sheets as the first postcards. Common subjects included mining camps and towns, cities, mining scenes, natural wonders, and events such as fires. Most letter sheets were never used for their intended purpose – letter writing. Instead, they were saved as mementos.



(Lithographed and Published by Quirot & Co., San Francisco)

Continue

Questions for Reading 1

1. What are some of the various factors that led to the rapid spread of "gold fever" in the United States?

2. Using the glossary, look up the definition for the word "satirical." Why do you think that "Gold Mania" was satirized in newspapers and magazines of the day?

3. What is a "letter sheet?" Describe what might be taking place in each scene using the one provided on the previous page.

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Reading 2: Mining Technologies in California

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(Original Lithograph "Gold Washing in the Sierra Nevada")

The earliest methods of gold extraction were used on shallow, easily reached deposits and involved simple equipment. Mining equipment generally consisted of a large, shallow, flat-bottomed tin pan for washing gold, a shovel, and a pick. Squatting by the side of a river or a stream, the miner would fill his pan with what he hoped would be "pay dirt." He would then hold the pan under the surface of the water and swirl it about with a gently rotating motion for several minutes. With one side of the pan lower, the water would wash away the lighter dirt and sand, leaving behind the heavier gold particles – if there were any – in the bottom of the pan. Panning was a dull, backbreaking job. A bucket of "washed" dirt might yield 10 cents in gold. The miners needed to wash 160 buckets a day in order to make $16.00 – the average price of an ounce of gold.

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During the early days of the Gold Rush, the miners working the placers could afford to be very choosy where they mined since there was so much gold. As one placer played out, the miners would simply move on to the next "diggins." However, by 1855 the placer deposits along California's streambeds had begun to give out, requiring a change in mining technology. One of these methods was "ground sluicing."

Water was used to break down the banks of streams and rivers along with the aid of shovels and picks. The eroding forces of water and gravity allowed the miner to reach the deeper river gravels. This allowed for the capture of less accessible placer gold. Washing the river gravels through an open wooden trough or sluice box, such as a "long tom," trapped the gold.

(Miners Work the Long Tom, unknown artist, circa 1850s).

The use of ground sluicing spread rapidly. According to an 1898 Trinity County newspaper "Money was plentiful and times were good" between the years 1855 and 1860. During this period, mining mainly took place in low-lying areas near sources of water. Water brought in from lakes and streams high in the mountains was also used to work the upper mountain slopes. Extensive water systems that tapped into these higher sources of water were built using a series of ditches, wooden flumes and metal pipes, known as penstocks. Over time, gold became even scarcer. Rich deposits of the precious metal still remained far below the surface but in order to recover the gold; more complex and destructive methods were required.

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(Monitors in use at Hocumac Hydraulic Mine, circa 1896. Previously published CG, V39, no. 8, p 181)

Perhaps the most dramatic of these new mining methods was hydraulicking. This method used a stream of water under pressure to expose the gold-bearing gravels found far beneath the ground's surface. First used in the gold fields in the Sierras, hydraulic mining was a true California invention. In 1853, Anthony Chabot, a former sailmaker, built a canvas hose, and Edward E. Matteson invented a tapered nozzle of sheet brass. This device became known as a monitor or 'giant.' Water shooting out of the monitor's nozzle with great force was aimed at the gold-bearing hillside. The hillside would dissolve into a huge muddy mass. Using a long sluice box, the soils containing gold were then processed. The concept was simple. Matteson had merely copied nature, where over geologic time the watercourses would cut down through ancient gravel beds, digging out gravel containing gold and depositing that gold behind rocks and logs in the existing streambed. For the next three decades, hydraulicking was the chief form of mining in northern California.

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California mining companies spent millions of dollars developing hydraulic mines. By 1870, these companies had built hundreds of storage reservoirs high in the mountains and thousands of miles of ditches, tunnels, and flumes. These features were built to supply the water that was needed for this type of mining. Hydraulic mining projects were among the largest engineering ventures in California at the time. The projects were carried out using private funds and did not have rules or regulations imposed on them by the State.

Matteson's invention changed the way mining was done in California. It also brought about one of the greatest environmental disasters of the 19th century. Great volumes of muddy water carrying millions of cubic yards of debris moved down through the sluices and drains, pouring into the streams and rivers flowing out of the Sierras. Each winter this mass of material moved out of the mountain canyons to be deposited in the relatively flat streams and overflow basins of the Sacramento and San Joaquin valleys. The muddy waters caused widespread flooding and destruction of agricultural land in the Sacramento Valley.

Valley farmers appealed to the courts for relief. After many years of debate, the courts finally ruled in favor of California farmers. Known as the "Sawyer Decision of 1884," the law banned miners from releasing tailings into streams that led to the Sacramento River. The passage of the "Caminetti Act" in 1893, allowed miners to use hydraulic methods if debris dams were used. But, large-scale hydraulic mining never regained its former importance in the Sierra Nevada.

Questions for Reading 2

1. Name three different methods of gold mining used in California. Describe the equipment that is necessary for each method.

2. Examine the illustrations provided in this section. Which of the three methods discussed above would require the greatest number of people to carry out.

3. Which of the gold mining methods discussed in this reading resulted in the greatest effect to the environment. What were these effects and what was the result?

4. Identify an environmental concern that is currently in the news today and discuss the potential effects to the environment.

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Reading 3: The History of the La Grange Mine

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(Monitors in use at La Grange Mine, near Weaverville, California, circa 1940)

Mines in the Trinity River Basin escaped the ban against hydraulic mining ordered by the Sawyer Decision for several reasons. Unlike the mines in the Sierra, debris from the Trinity mines was dumped into rivers where it was carried directly out to the Pacific Ocean insteadof into the valleys. Also, the Trinity River area was not suitable for farming. Because of these reasons, there was no legal basis to extend the ban by Congress into this part of the State. So, while large-scale hydraulic mining in the 1890s was near its end in the Sierra Nevada, it was in its infancy in the Trinity River area. The major factor holding back the hydraulic mining industry in this portion of the State during the 1890s was the lack of extensive ditch systems like those that served the central Sierran mines.

To overcome this problem, a group of local miners formed the Weaverville Ditch and Hydraulic Mining Company in 1873. This company built a network of ditches that supplied enough water to make hydraulic mining possible in Oregon Gulch. In 1879, the group sold out to the Trinity Gold Mining Company (TGMC). The TGMC continued to wash gold from the western slope of Oregon Mountain until they sold the company. Baron de La Grange bought the mine in 1892 for $250,000. The La Grange Hydraulic Gold Mining Company had its main office in Denver. The owners, a group of French and Colorado investors, operated the mine until 1905.

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(Baron Ernest de La Grange)

(Baroness Clémentine and their children, Amaury and Emilie)

Like his wife, Clémentine, the Baron Ernest de La Grange belonged to the French nobility. But, the rituals of French high society and the life they led began to strike them as "frivolous and useless." Ernest complained that managing the family castle, *La Motte au Bois*, did not keep him busy enough. Clémentine swore that she would follow him wherever he decided to go, even to the ends of the earth. At that time, fabulous reports about the gold and diamond mines of the Transvaal filled the French newspapers. For a brief period, the Baron thought seriously of going to Africa. In 1892, the Baron and his family decided to come to the United States. They left behind a France that was in political, social and economic turmoil.

It appears that the Baron was much like Theodore Roosevelt in his pursuit of the rugged outdoor life. The Baron, Clémentine, and their two young children, Emilie and Amaury, left on the *SS Rotterdam* for a 17-day voyage across the Atlantic Ocean. Upon their arrival in New York, the Baron and his family set out for the West. They were searching for a ranch or industrial property that would become the family home and business. Their travels eventually led them to Weaverville where they rented a small house from which to run their newly-acquired mine.

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(This photo was taken around 1895 of the La Grange Hydraulic Gold Mining Company's inverted siphon across East Weaver Creek. The Baron and Baroness de La Grange are standing on the left side of the pipeline. Photo on file at Trinity County Historical Society).

The Baron had help in managing the mine. The Baroness Clémentine de La Grange was very much a "hands-on" partner. She was often involved in the day-to-day operations of the mine. It was not odd to find the Baroness on inspection tours of ditch-building sites or cleaning the gold from the muddy sluice boxes. In her memoirs, the Baroness' own words clearly reveal her devotion to the mine.

October 16, 1893

For the last several days, I've gone on long mountain excursions to inspect the job from one end to the other. They've done excellent work. The ditch is fourteen and a half miles long and has been fortified on one side with a wide bank of dirt, whereas the other side is solidly supported by the mountain. Barring a horrendous avalanche, I believe it will withstand winter storms. The trail along the ditch is so narrow that our little horses need all their skill to stay on it. One false step would send steed and rider into the abyss. I admire the grace with which my chestnut mare changes feet to avoid a pile of rubble that would bring her close to the edge of the cliff.

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November 14, 1893

I'm all-alone at the mine: Ernest and the engineers are in San Francisco… This morning for the first time I took my gun and beat the bushes in the valley. I sighted three hares within reasonable shooting range, but I was incredibly clumsy and killed only one. How popular I'll be when I come home with this game, which I'll call by a special name on the menu. It will be a real change from our usual fare of old beef and old mutton. I was really lucky, because you have to go some distance to find game: it is chased away by civilization, no matter how primitive…

December 10, 1893

I spent yesterday next to a monitor, admiring the beautiful imposing spectacle of this hydraulic force of 3,000 horsepower. As the stones are thrown from the ground, they form a frame around the shooting stream of water that makes a noise like thunder. The strong current pulverizes the base of the cliff with an enormous roar. The man holding the monitor can change its direction with a slight turn of shoulder, reducing this mass of earth into liquid mud which then flows into the sluices like a torrent, filling the wooden interstices of these primitive strong-boxes with the precious metal. I have the great pleasure of climbing up and replacing the worker on the platform, while he shows me where to direct the spray.

February 1, 1894

…Ernest went to San Francisco on business and he's coming back tonight: he'll be dead tired after thirteen hours on the bumpy road from Redding to the mine. He's bringing back Mr. Radford, an engineer with an excellent reputation who was the brains behind another successful operation: the North Bloomfield. It had to be closed on account of the debris law. This law put an end to many of the hydraulic mines in California because of the great damage to the local farms. This damage is caused by the pile up of debris from the mining operations in the valleys below. Our mine, situated on the Pacific side in an area unsuitable for farming, remains unaffected by this law since the water carries the debris to the Trinity River, whose torrential current takes it all the way to the sea. Nonetheless, in spite of all the efforts to the contrary, a little settlement at the bottom of Oregon Gulch runs the risk of being buried when we run our operation full-scale. The church on the valley floor can be moved higher up the mountain, and the houses, made of wood can be easily disassembled, and relocated around it.

June 12, 1894

A terrible thing happened to Jose, owner of the stagecoach that runs between Redding and Weaverville. One of the poor man's drivers was robbed of $200 by another stage driver on the road….When carrying valuables on this long deserted road to Redding, one must carefully avoid letting anyone suspect it. I

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recently traveled with $5,000 worth of clean-up, but I put it in an ordinary dishtowel from which I would take a crust of bread or some canned food every so often. I thus made it seem as if this was my food supply, and not even the stage driver guessed that I was, as the Americans say, "worth five thousand dollars."

June 21, 1894

Mr. Radford now has the mine well in hand. I'm sure he will make it prosper, so we are thinking seriously of setting sail for France. The children no longer dream of anything but little French cousins, uncles, and aunts. But on waking, they're upset at leaving their pigeons, their cats, and their chickens…. And as for us adults, we're leaving behind memories of trying days and happy days, leveled out in such a way that the latter erase the former, leaving us with a positive, comforting impression.

Questions for Reading 3

1. Why were the hydraulic mines in the Trinity River basin able to continue operating even after the Sawyers Decision?

2. Why do you think the Baron and his wife chose to leave France behind? Would you want to travel with two young children to a place like Weaverville to strike it rich? Why or why not?

3. Based on the Baroness' memoirs, do you think her life was unusual for women living during this time? Why or why not?

Reading 3 was complied from Julia G. Costello and Stephen R. Wee, *The Oregon Mountain Summit and La Grange Mine Historic Properties (*California Department of Transportation District 2, Redding, California, 2000), and Clementine De La Grange, *From the Known to the Unknown – The Memoirs of Baroness de La Grange – 1892 – 1894 (*Translated from the original French by Thomas Buckley, Ph.D. and Published by the Trinity County Historical Society, Weaverville, California.)

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Reading 4: Historical Archaeology at the La Grange Mine

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(Miners and cabin at La Grange Mine. Trinity County Historical Society Archives)

Whenever groups of people abandon a "site" or place they once lived and worked, they leave behind items that they no longer need. These items may include bits and pieces of buildings or a tool they once used, or trash such as bottles and cans. Known as material remains or "artifacts," all of these things help us piece together the past. Archaeology is the study of the past based on the remains that earlier people left behind. By examining artifacts from a site, an archaeologist can help us grasp how people lived in the past. Historical Archaeologists also use documents to learn about the past. Old photographs, maps, diaries, mining records, and newspaper stories can provide valuable information.

Historical archaeology may tell a different story than the one that was written down. Very few documents tell us about the private lives of these people or the "average" worker and their daily life. By studying items that people threw out, left behind, or lost, historical archaeologists can tell us things that may not be in the written record. Historical archaeologists can answer questions like what the people ate, what their homes looked like, and what type of clothes they wore.

Continue

Historical records reveal that the La Grange Mine had two separate areas where employees lived. The manager and the Baron's family lived on the northern edge of the mine on top of a hill above Coopers Gulch. From this location, they could overlook the La Grange mine and sluice boxes to the east and south. The original plans for the Baron's home was for a one-story office building. The Baron changed the plans in early 1895 and added a second story and a small kitchen to the rear of the house. The addition also included a pantry, cook's room and a dining room. With its many windows and balconies, "The Castle," as it was known, gave the owners and their guests a view of the mine's operations.

Baron La Grange died in France in 1899, apparently in a swimming accident. Following his death, the Castle became the residence of Pierre Bouery, the mine's manager. Under Bouery's control, the mine was very successful. Bouery even remodeled the Castle and its grounds. He installed fireplaces with imported tiles, sent to France for special wallpapers and used stained glass in the windows. The Castle also became famous for its wine cellars, gourmet food, and dinner parties.

The workers lived on the opposite side of the canyon across Oregon Gulch. Between the years 1893 and 1911, the company put up a number of buildings for their employee's use. The first building completed was a men's boardinghouse. A company store that supplied all the items needed by the miners soon followed. By 1900, the town had a lodging house, several barns and sheds, a stable, and two family cottages. The wagon road from Weaverville to Junction City passed through the center of town. Trinity County created the La Grange School District in the spring of 1911. By fall of that year, 13 pupils were enrolled in a schoolhouse at La Grange.

The only things that remain of this once bustling mining town are the scattered ruins where buildings once stood. There are no standing structures left. Most of the larger pieces of equipment have either been moved to other mines, have been sold as scrap metal, or have been stolen by souvenir hunters. Archaeologists working at the mine site found bits of glass, metal and wood. These items mark where the buildings were located. For example, the Castle's location can be identified today by three flat terraces that are lined by 50-foot-long rock walls. Scattered about these terraces, the archaeologists also found wood with nails and metal spikes, pieces of tarpaper, glass bottles and metal cans.

Continue

The archaeologists also found many items near where the manager once lived. Made between 1895 and 1918, most of these items were for use in the home. Broken cups and plates from England, colored glass and bottle pieces, food and tobacco cans, baking pans, canning jar lids and a small leather glove, all give the archaeologists clues about who lived here and when. For instance, did the small leather glove belong to the Baroness or one of her children? Are the broken plates and cups from England proof that the people that lived in the Castle kept a link with Europe while still living in California? Can any of the items be linked to France? By using both historical and archaeological skills to study the evidence, we can begin to complete a picture of what life was like at the La Grange Mine for the people who lived and worked there. In this way, archaeologists can provide details about these people's lives which are not available anywhere else.

Questions for Reading 4

1. Make a list describing what archaeological evidence has been discovered at the La Grange Mine. How have these artifacts helped archaeologists interpret what took place there?

2. What things might you expect to find in the garbage dump if the Baroness and her children were living at the site?

3. What differences, if any, might you expect to find in the artifacts left behind by the workers and their families from those found where the Manager's lived?

4. How has archaeology been important in studying the La Grange Mine?

Reading 4 was complied from Julia G. Costello and Stephen R. Wee, The Oregon Mountain Summit and La Grange Mine Historic Properties (*California Department of Transportation District 2, Redding, California, 2000).*

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How to Use the Images

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Visual Evidence

Photo 1: Hydraulic Monitors in Operation at the La Grange Mine Pit

(Monitors in use at the La Grange Mine. Trinity County Historical Society Archives)

Questions for Photo 1

1. Based on what you learned in Reading 2, how did the monitors work?

2. What changes in the environment would take place with the use of this equipment?

Continue

How to Use the Images

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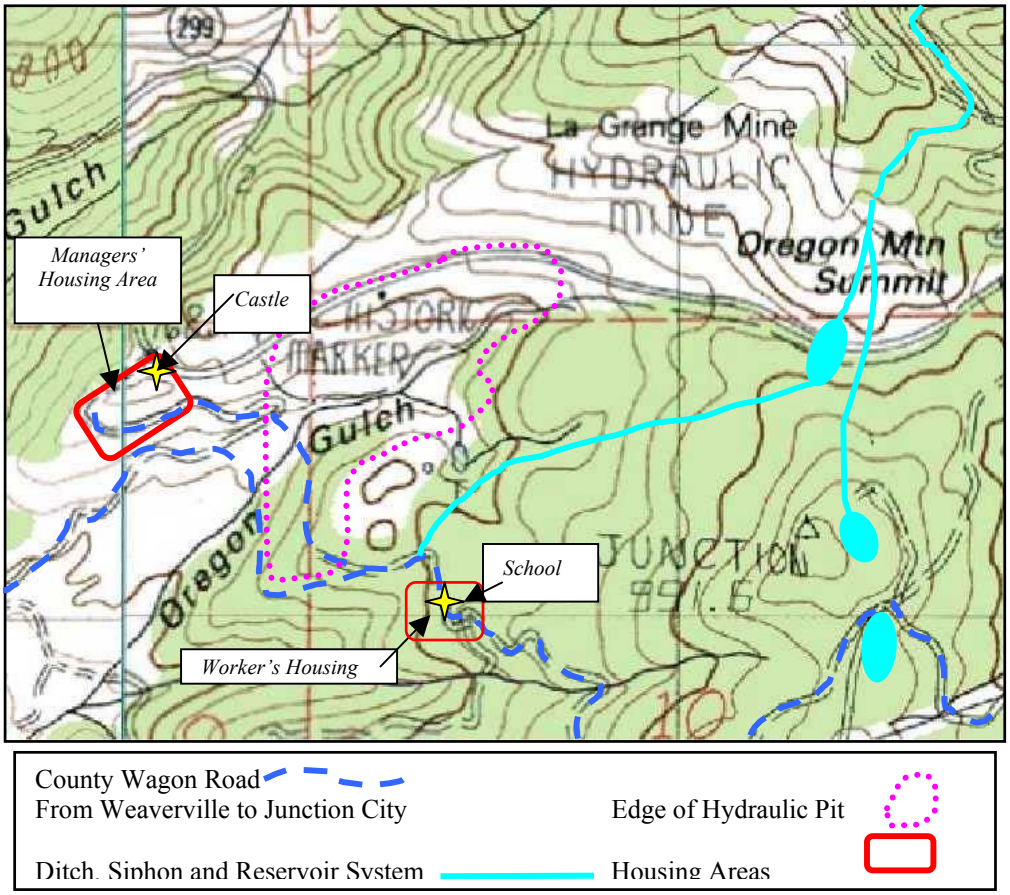
Visual Evidence

Map 3: Overall map of La Grange Hydraulic Mine Complex



Map 3 shows the La Grange Hydraulic Mining complex and the topography of the site. The closer the lines are to one another, the steeper the terrain. The map also shows the location of the ditch, siphon, and reservoir system that supplied the mine with water.

Questions for Drawing 1

1. Looking at the topographic lines, why do you think the water systems are located where they are?

2. What is the advantage of placing the mining pits downhill from the water system?

3. Describe the mining process at the La Grange Hydraulic Mine. Does this map help you understand better how the process worked? Why or why not?

Continue

Visual Evidence

Photo 2: View of La Grange Manager's Residential Area

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(Archaeologists are taking measurements of the rock-lined terrace that was once part of the Castle. Photo on file at California Department of Transportation, North Region, Redding, California)

This photo shows some of the remains of the Castle. Julia Costello, a historical archaeologist, appears in the photo along with her assistant. The original plans for the Castle called for a one-story building. But the Baron changed the plans in early 1895 and added a second story and a small kitchen to the rear of the house. The addition also included a pantry, cook's room and a dining room. In this photo, you can see one of the rock-lined terraces. The rock terraces formed the foundation or base of the house.

Continue

Visual Evidence
Photo 3: "The Castle" circa 1909-1910

(Trinity County Historical Society Photo – note the rock lined wall at the center right of the photo)

This photo shows the Baron's Castle at it appeared between 1909 to 1910. Although the Baron and his family originally lived in this house, after they moved back to France, the house became the office and home of the mine's manager, Pierre Bouery. The other buildings seen in the background of this photo were the home of the other managers and key personnel.

Questions for Photos 2 and 3

1. Examine Photo 2. What do you think the archaeologists are doing?

2. If you were an archaeologist, what kind of questions would you ask when studying this site?

3. How might documenting the remains of the managers' housing area help one understand their living conditions?

4. Compare the location of the rock wall in Photo 3 with the archaeological remains in Photo 2. Where do you think the main part of the house would be located in Photo 2?

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Putting It All Together

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In this lesson, students explore both how gold was mined in the late nineteenth and early twentieth centuries and how historical archaeologists piece the past together from artifacts and documentary evidence. The following activities will help them apply what they have learned.

Activity 1: California Before the Rush
Have the students research what life was like in their community before the gold rush of 1849. Who was living in the area and what was their life like during this time? What impacts did the gold rush have on their life? An alternative activity would be to have students conduct an oral history on the life of a specific person who lived in their area during the early part of the twentieth century. What was their life like back then? Where did they live and work? What were the important local events that were happening back then? Have students make a class presentation on their findings.

Activity 2: "Come One, Come All, to the Great Land of Opportunity"
Have students write newspaper articles on the historical mining discoveries in California. For example, announce the Sutter's Mill find of 1848 or P.B. Reading's find at Clear Creek in Shasta County. Posters, or television or radio advertisements could also be created instead of newspaper articles. Students could work in teams to put their advertisements on video and share with the class.

Activity 3: Journey to the Land Of Gold
Working in small groups, have students look through old newspapers and files in their local library or historical society archives to determine from what areas of the world or United States the early miners originated. Research world events that were taking place at this period of time, such as in China or Europe, and discuss in class the possible reasons that led to these individuals decision for migrating to an unknown land. Compare the reasons that led these people to migrate to the United States then, with now.

Activity 4: The Archaeological Record
Have each student choose one or several objects from home or school that they think will be crucial for future archaeologists to understand our society. Have the student make a class presentation explaining why they chose what they did and what possible meanings might archaeologists of the future attribute to their artifact. Have the other students discuss if they think it will be obvious what the objects were used for, or will the archaeologists have trouble determining their use? What if only part of an object was found, rather than the whole item? Bring some fragments that you have chosen to class and discuss what they might be and mean.

The La Grange Mine: Changing the Landscape in the Quest for Gold *Supplementary Resources*

Inquiry Question

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The LaGrange Mine: Changing the Landscape in the Quest for Gold will help students understand some of the methods that were used to mine gold in the 19th and 20th centuries and what impacts these methods have on the environment and people living in the region. The lesson plan provides insight into how archaeologists are able to piece together the past from artifacts, archaeological evidence and archival information. Those interested in learning more will find that the Internet offers a variety of materials.

National Park Service Archaeology and Ethnography Program

The National Park Service (NPS) is a steward of our diverse cultural legacy. From the cliff dwellings of the Southwest to the reminiscences of neighborhood residents where Martin Luther King, Jr. grew up, this legacy represents a continuum of American heritage—its places, objects and traditions. The NPS Archaeology and Ethnography Program provides national leadership, coordination, and technical guidance to aid in preserving this heritage. For the public www.cr.nps.gov/archeology.htm offers in-depth features on archaeological projects, information on how to learn and participate in archaeology, and a variety of teacher resources.

Gold Rush

The site listed below was created by the Sacramento Bee newspaper and has detailed easily accessible information on all three travel routes that were used by early miners heading for the gold fields of California. The website, www.calgoldrush.com, includes cost, travel time, food, problems, weather information on these early routes. You can also find information on the daily life of miners, the impact of the Gold Rush in the West, and hardships suffered by miners.

Alvin A. Coffey

This account of Alvin A. Coffey's journey to the California gold fields overland by wagon is filled with descriptions of various adventures he experienced along the way. The site www.sfmuseum.org.bio.coffey.html also contains a wealth of first hand accounts regarding the California Gold Rush and life in California before the discovery of gold.

Continue

Jake Jackson Museum and History Center
Located at 508 Main Street in Weaverville, California, the Jake Jackson Museum and History Center contains an extensive collection of artifacts, historic documents, records, photographs, maps and books that cover all facets of the history of Trinity County and surrounding areas. The resources available and their hours of operation can be found on their website at www.tcoe.trinity.k12.ca.us/~museum/

The California Gold Country – Highway 49 Revisited
This site allows you to browse the online version of this publication and take a virtual tour where you can visit old mining sites, learn their history, and view images produced during the California Gold Rush. This site, www.malakoff.com/goldcounty/maintcgc.htm, provides an excellent link to additional Internet resources which contain information on California's Gold Rush historic past.

California State Library – Gold Rush Exhibit
The exhibit at this site (www.library.ca.gov/goldrush/images/html) features over 100 examples from the California History Section's extensive manuscript collection pertaining to this period. Several topics are included in this virtual exhibit ranging from "Scenes in the Life of the California Miner," "The Miner's Ten Commandments," "The Northern Mines," and the "Overland Trek."

Oakland Museum of California
The Gold Rush! Online curriculum, Myth & Reality: The California Gold Rush and Its Legacy at www.museumca.org/goldrush/htm provides materials for grades 4, 5, 8 and 11 that provide students and teachers an opportunity for historical inquiry through primary source visuals and documents.

Huell Howser's California Gold Series
Huell Howser Productions, in conjunction with public television, is the host of a series called "California Gold." Many of the episodes in this series visit historic gold mining sites around the State. Information on when the various episodes can be seen in your area can be found at www.calgold.com.

Society for Historical Archaeology
The Society for Historical Archaeology (SHA) is the largest scholarly group concerned with the archaeology of the modern world (AD 1400-present). The focus of the society is the era since the beginning of European exploration. Included at www.sha.org.htm are a variety of online publication links and research tools.

Continue

Society for California Archaeology
The Society for California Archaeology (SCA) is a nonprofit scientific and educational organization dedicated to research, understanding, and conservation of California's archaeological resources. Included at www.scanet.org.htm is an education section that provides links to many other useful websites.

Mineral Information Institute
The Mineral Information Institute (MII) is a nonprofit organization dedicated to educating youth about the science of minerals and other natural resources, and about their importance in our everyday lives. The MII website at www.mii.org produces educational materials, which are provided at no cost to teachers in order to supplement existing curricula. Search this website for more information on gold such as its history, its properties as a metal, how it is used, and its mining and processing.

For Further Reading
Students and educators wishing to learn more about the mining industry and the California Gold Rush may want to read:

James Rawls and John Holder, Dame Shirley and the Gold Rush (Raintree Publishing, 1992)

Silver and Gold: Cased Images of the California Gold Rush (Drew Heath Johnson and Marcia Eymann, eds, Iowa City, IA: University of Iowa Press for the Oakland Museum of California, 1998)

Clémentine de La Grange, From the Known to the Unknown, The Memoirs of Baroness de La Grange – 1892-1894 (Trinity County Historical Society, Weaverville, California).

Continue

How to Use this Lesson Plan

Teaching with this lesson plan provides the opportunity to enhance student learning by bringing historic places directly to your classroom. Students can experience the excitement of these unique places and the stories they have to tell through carefully selected written and visual materials.

This lesson plan contains teacher materials and teaching activities. Teacher materials include the following sections: **Introduction**, **Where it fits into the curriculum**, **Objectives for students**, and **Materials for students**. Teaching activities consist of the following sections: **Getting Started** (inquiry question), **Setting the Stage** (historical background), **Locating the Site** (maps), **Determining the Facts** (reading, documents, charts), **Visual Evidence** (photographs and other graphic documents), and **Putting It All Together** (activities). The lesson plan format was designed to allow flexibility but works best if the material in the plan is presented to the students as described below:

1. **Getting Started**

Begin the lesson by asking students to discuss possible answers to the inquiry question that accompanies the **Getting Started** image. To facilitate the classroom discussion, you may want to print this page and use it to make an overhead transparency. The purpose of the exercise is to engage students' interest in the lesson's topic by raising questions that can be answered as they complete the lesson.

It should be pointed out to the students that rather than serving merely as illustrations for the text, images are documents that play an integral role in helping them achieve the lesson's objectives. To assist students in learning how to "read" visual materials, you may want to begin this section by having them complete the Photo Analysis Worksheet for one or more of the photos in the lesson plan. The worksheet is appropriate for analyzing both historical and modern photographs and will help students develop a valuable skill.

2. **Setting the Stage**

Next, present the information in **Setting the Stage**. This material may be read aloud to the students, summarized or photocopied for students to read individually or in small groups. Setting the Stage material provides background information necessary to acquaint students with the topic of the lesson they will be studying.

3. **Locating the Site**

Next provide students with copies of the maps and questions included in **Locating the Site**. Have students work individually or in small groups to complete the questions. Extended captions may be included to provide students with information necessary to answer the questions.

Back to the Beginning

4. Determining the Facts

Then provide students with copies of the readings included in Determining the Facts. Again, allow students to work individually or in small groups. The series of questions that accompanies each of these sections is designed to ensure that students have gathered the appropriate facts from the material.

5. Visual Evidence

Next, distribute the lesson's visual materials among students. You can print these images and make copies of them or display them on a computer screen. Have the students examine the photographs and answer the related questions. Note that in some of the lessons two or more images are studied together in order to complete the questions. Extended captions may be included to provide students with important information.

Rather than serving merely as illustrations for the text, the images are documents that play an integral role in helping students achieve the lesson's objectives. To assist students in learning how to "read" visual materials, you may want to begin this section by having them complete the Photo Analysis Worksheet for one or more of the photos. The worksheet is appropriate for analyzing both historical and modern photographs and will help students develop a valuable skill.

6. Putting It All Together

After students have completed the questions that accompany the maps, readings, and visuals, they should be directed to complete one or more of the activities presented in Putting It All Together. These activities engage students in a variety of creative exercises that help them synthesize the information they have learned and formulate conclusions. At least one activity in the lesson plan leads students to look for places in their community that relate to the topic of the lesson. In this way, students learn to make connections between their community and the broader themes of American history they encounter in their studies.

Back to the Beginning

Photo Analysis Worksheet

Step 1:

Examine the photograph for 10 seconds. How would you describe the photograph?

Step 2:

Divide the photograph into quadrants and study each section individually. What details – such as people, objects, and activities – do you notice?

Step 3:

What other information – such as time-period, location, season, reason photo was taken – can you gather from the photo?

Step 4:

How would you revise your first description of the photo using the information noted in Steps 2 and 3?

Step 5:

What questions do you have about the photograph? How might you find answers to these questions?

Back to the Beginning

Glossary of Mining and Archaeology Terms

Archaeology – The study of the past cultures through the recovery and analysis of their material remains.

Archaeological site – Any place where material evidence exists about the human past.

Artifact – Any movable object that has been used, modified or manufactured by humans.

Emigrant – A person who leaves one place to settle in another.

Diggins – Applicable to all mineral deposits and mining camps, but as used in the United States is usually applied to placer mining locations.

Flume – An open trough or channel, made of wood or other material, used to transport water from a distance to be used for power, transportation, etc; typically used in areas where a ditch would be impossible - like a cliffside or rocky hillside.

Giant – The nozzle of a pipe used to carry water for hydraulic mining; used to distribute and increase the force of water.

Ground sluicing – The use of free-flowing water to break down gravel in a placer deposit and wash it through a sluice. It was the first placer mining method in which the miner put water to use as an excavating agent. A stream of water was brought to the upper side of a bank of gold-bearing gravel and then led across the deposit through one or more channels. Starting at the lower end and proceeding upstream, the channels are deepened by picking the bottom while the water carries the loose material away. The water moves the loosened material through a natural sluice (ground sluice) prepared on bedrock, or through a conventional sluice box placed at the lower end of the workings. As the lighter material is washed away, the coarser gold collects in bedrock crevices or behind rocks laying on the bottom of the ground sluice, or in riffles in the sluice box.

Historical archaeologist – An archaologist who specializes in the study of the material remains of past societies that also left behind some written record.

Hydraulic mining – A method of mining by which a bank of gold-bearing earth or gravel is washed away by a powerful jet of water and carried into sluices, where the gold separates from the earth by its density.

Hydraulicking – The act of hydraulic mining.

Kanaka – Native Hawaiian people who came over to mine.

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Landform – A feature of the earth attributable to natural causes.

Lithograph – A print made by the process of lithography where the image to be printed is receptive to ink and the blank area or paper is ink-repellent.

Lode gold – Gold found in veins within quartz or other rock.

Long tom – A rectangular box that measures about 12 to 15 feet long and 2 feet wide. Mainly made out of wood, the box had a metal bottom with a sieve and a ripple box at its end. The box was put with a slight slope to aid the flow of water. Gold-bearing earth or gravel was crudely washed in the box, a type of sluice box but longer and more narrow.

Memoirs – A written account of one's life based on personal experiences.

Monitor – Used in hydraulic mining, a device consisting of a nozzle and holder. It resembles a firehose-type nozzle that sprayed huge amounts of water on hillsides to recover gold out of them; used to project high-pressure water on gravels and sands to break down, wash and transport them.

Mother Lode – Refers to the vast area of Central California where gold was found in large quantities. It was called the mother lode because the whole area was a source, not just a small target area.

Panning – The process of washing gold-bearing gravel in a shallow metal pan to obtain the gold it contains. The pan is partially filled with dirt and held under water. A gentle shaking aids in dissolving the dirt and thin mud is formed. The mud is carried away by running water and the gold settles to the bottom of the pan where it can be removed.

Pay dirt – Soils that contain gold.

Penstock – A rivetted metal pipe that is used to transport water for mining purposes.

Placer gold – Gold particles that have become separated from their parent rock and are found concentrated in the sands and gravels of streams and river beds.

Placer mining – Method of mining where gold is obtained by washing alluvial sands or gravel.

Reservoir – An artificially built, dammed, or excavated place for holding a body of water.

River bar – A flat, sandy or gravelly area along a river that is exposed at low water.

Satirical – Relating to satire; a literary work holding up human vices and follies to ridicule or scorn.

Back to the Beginning

Site – A location of an important event, occupation or activity, or a building or structure, whether standing, ruined or vanished; a concentration of material remains associated with past humans.

Sluice box – A long, narrow, wood or metal artificial channel that water passes through when put in a creek or stream. Used to separate the dirt and rock material away from the gold. Gold, the densest metal known to humans, stays in the sluice box because of its heavier weight.

Tail Race – The channel for conducting tailing or refuse away in water.

Tailings – Whatever is left behind from mining activity. The sand, gravel and cobbles which pass through the sluices in hydraulic mining; leavings; remainder; dregs; waste rock.

Topography – The graphic detail used on maps for a place or region to show natural or man-made features.

Back to the Beginning