Gold, Silver, and Coal—Oh My!: Mining Montana's Wealth

User Guide
Provided by The Montana Historical Society
Education Office
(406) 444-4789
www.montanahistoricalsociety.org

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Inventory

Borrower: _____ Booking Period: _____

The borrower is responsible for the safe use of the footlocker and all its contents during the designated booking period. Replacement and/or repair for any lost items and/or damage (other than normal wear and tear) to the footlocker and its contents while in the borrower's care will be charged to the borrower's school. **Please have an adult complete the footlocker inventory checklist below, both when you receive the footlocker and when you repack it for shipping, to ensure that all of the contents are intact.** After you inventory the footlocker for shipping to the next location, please mail or fax this completed form to the Education Office.

ITEM	BEFORE USE	AFTER USE	CONDITION OF ITEM	MHS USE
1 flannel shirt				
1 pair jeans				
1 vest				
1 bandanna				
1 blanket				
1 felt hat				
1 sampling tool				
1 gold pan				
1 sample of "fool's gold" (pyrite)				
1 piece of coal				
1 miner's candle				
1 tin cup				
1 tin plate				
1 lunch pail				

Inventory *(continued)*

ITEM	BEFORE USE	AFTER USE	CONDITION OF ITEM	MHS USE
1 carbide lamp				
1 Butte pasty recipe				
11 historic photographs				
2 padlocks				
1 User Guide				

Education Office, Montana Historical Society, PO Box 201201, Helena, MT 59620-1201
Fax: 406-444-2696, Phone: 406-444-4789, jkeenan@state.mt.us

Inventory completed by

Date

Footlocker Contents

Left:
Flannel Shirt, Vest, Jeans, Bandanna, Blanket, Hat

Right:
Tin Cup, Tin Plate, Lunch Pail, Pasty Recipe

Left:
Gold Pan, Iron Pyrite, Carbide Lamp, Sampling Tool, Miner's Candle, Coal

Footlocker Use–Some Advice for Instructors

How do I make the best use of the footlocker?

In this User Guide you will find many tools for teaching with objects and primary sources. We have included teacher and student level narratives, as well as a classroom outline, to provide you with background knowledge on the topic. In section one there are introductory worksheets on how to look at/read maps, primary documents, photographs, and artifacts. These will provide you and your students valuable tools for future study. Section three contains lesson plans for exploration of the topic in your classroom—these lessons utilize the objects, photographs, and documents in the footlocker. The "Resources and Reference Materials" section contains short activities and further exploration activities, as well as bibliographies.

What do I do when I receive the footlocker?

IMMEDIATELY upon receiving the footlocker, take an inventory form from the envelope inside and inventory the contents in the "before use" column. Save the form for your "after use" inventory. This helps us keep track of the items in the footlockers, and enables us to trace back and find where an item might have been lost.

What do I do when it is time to send the footlocker on to the next person?

Carefully inventory all of the items again as you put them in the footlocker. If any items show up missing or broken at the next site, your school will be charged for the item(s). Send the inventory form back to:

Education Office, Montana Historical Society, Box 201201, Helena, MT 59620-1201 or fax at (406) 444-2696.

Who do I send the footlocker to?

At the beginning of the month you received a confirmation form from the Education Office. On that form you will find information about to whom to send the footlocker, with a mailing label to affix to the top of the footlocker. Please insure the footlocker for $1000 with UPS (we recommend UPS, as they are easier and more reliable then the US Postal Service) when you mail it. This makes certain that if the footlocker is lost on its way to the next school, UPS will pay for it and not your school.

What do I do if something is missing or broken when the footlocker arrives, or is missing or broken when it leaves my classroom?

If an item is missing or broken when you initially inventory the footlocker, **CONTACT US IMMEDIATELY** (406-444-4789), in addition to sending us the completed (before and after use) inventory form. This allows us to track down the missing item. It may also release your school from the responsibility of paying to replace a missing item. If something is broken during its time in your classroom, please call us and let us know so that we can have you send us the item for repair. If an item turns up missing when you inventory before sending it on, please search your classroom. If you cannot find it, your school will be charged for the missing item.

Footlocker Evaluation Form

Evaluator's Name _____ Footlocker Name _____

School Name _____ Phone _____

Address _____ City _____ Zip Code _____

1. How did you use the material? (choose all that apply)

☐ School-wide exhibit ☐ Classroom exhibit ☐ "Hands-on" classroom discussion

☐ Supplement to curriculum ☐ Other_____

2. How would you describe the audience/viewer? (choose all that apply)

☐ Pre-school students ☐ Grade school—Grade____ ☐ High school—Grade____

☐ College students ☐ Seniors ☐ Mixed groups ☐ Special interest

☐ Other_____

2a. How many people viewed/used the footlocker?_____

3. Which of the footlocker materials were most engaging?

☐ Artifacts ☐ Documents ☐ Photographs ☐ Lessons ☐ Video

☐ Audio Cassette ☐ Books ☐ Slides ☐ Other_____

4. Which of the User Guide materials were most useful?

☐ Narratives ☐ Lessons ☐ Resource Materials ☐ Biographies/Vocabulary
☐ Other_____

5. How many class periods did you devote to using the footlocker?

☐ 1-3 ☐ 4-6 ☐ More than 6 ☐ Other_____

6. What activities or materials would you like to see added to this footlocker?

_____

_____

(continued)

7. Would you request this footlocker again? If not, why?

_____

_____

_____

_____

8. What subject areas do you think should be addressed in future footlockers?

_____

_____

_____

_____

_____

9. What were the least useful aspects of the footlocker/User Guide?

_____

_____

_____

_____

_____

10. Other comments.

_____

_____

_____

_____

_____

Montana Historical Society Educational Resources Footlockers, Slides, and Videos

Footlockers

Stones and Bones: Prehistoric Tools from Montana's Past— Explores Montana's prehistory and archaeology through a study of reproduction stone and bone tools. Contains casts and reproductions from the Anzick collection.

Daily Life on the Plains: 1820-1900— Developed by Montana Fish, Wildlife, and Parks, this footlocker includes items used by American Indians, such as a painted deerskin robe, parfleche, war regalia case, shield, Indian games, and many creative and educational curriculum materials.

Discover the Corps of Discovery: The Lewis and Clark Expedition in Montana— Investigates the Corps' journey through Montana and their encounters with American Indians. Includes a Grizzly hide, trade goods, books, and more!

Cavalry and Infantry: The U.S. Military on the Montana Frontier— Illustrates the function of the U. S. military and the life of an enlisted man on Montana's frontier, 1860 to 1890.

From Traps to Caps: The Montana Fur Trade— Gives students a glimpse at how fur traders, 1810-1860, lived and made their living along the creeks and valleys of Montana.

Inside and Outside the Home: Homesteading in Montana 1900-1920— Focuses on the thousands of people who came to Montana's plains in the early 20th century in hope of make a living through dry-land farming.

Prehistoric Life in Montana— Explores Montana prehistory and archaeology through a study of the Pictograph Cave prehistoric site.

Gold, Silver, and Coal—Oh My!: Mining Montana's Wealth— Lets students consider what drew so many people to Montana in the 19th century and how the mining industry developed and declined.

Coming to Montana: Immigrants from Around the World— Montana, not unlike the rest of America, is a land of immigrants, people who came from all over the world in search of their fortunes and a better way of life. This footlocker showcases the culture, countries, traditions, and foodways of these immigrants through reproduction artifacts, clothing, toys, and activities.

(continued)

Montana Indians: 1860-1920— Continues the story of Montana's First People during the time when miners, ranchers, and the military came West and conflicted with the Indians' traditional ways of life.

Woolies and Whinnies: The Sheep and Cattle Industry in Montana—Looks at the fascinating stories of cattle, horse, and sheep ranching in Montana from 1870 to 1920.

The Cowboy Artist: A View of Montana History— Over 40 Charles M. Russell prints, a slide show, cowboy songs, and hands-on artifacts are used as a window into Montana history. Lessons discuss Russell's art and how he interpreted aspects of Montana history, including the Lewis and Clark expedition, cowboy and western life, and Montana's Indians. Students will learn art appreciation skills and learn how to interpret paintings, in addition to creating their own masterpieces on Montana history topics.

The Treasure Chest: A Look at the Montana State Symbols—The Grizzly Bear, Cutthroat Trout, Bitterroot, and all of the other state's symbols are an important connection to Montana's history. This footlocker will provide students the opportunity to explore hands-on educational activities to gain a greater appreciation of our state's symbols and their meanings.

Lifeways of Montana's First People—Contains reproduction artifacts and contemporary American Indian objects, as well as lessons that focus on the lifeways of the five tribes (Salish, Blackfeet, Nez Perce, Shoshone, and Crow) who utilized the land we now know as Montana in the years around 1800. Lessons will focus on aspects of the tribes' lifeways prior to the Corps of Discovery's expedition, and an encounter with the Corps.

East Meets West: The Chinese Experience in Montana— The Chinese were one of the largest groups of immigrants that flocked in to Montana during the 1800s in search of gold, however only a few remain today. Lessons explore who came to Montana and why, the customs that they brought with them to America, how they contributed to Montana communities, and why they left.

Architecture: It's All Around You— In every town and city, Montana is rich in historic architecture. This footlocker explores the different architectural styles and elements of buildings, including barns, grain elevators, railroad stations, houses, and stores, plus ways in which we can keep those buildings around for future generations.

Tools of the Trade: Montana Industry and Technology— Explores the evolution of tools and technology in Montana from the 1600's to the present. Includes reproduction artifacts that represent tools from various trades, including: the timber and mining industries, fur trapping, railroad, ranching and farming, and the tourism industry.

(continued)

SLIDES

Children in Montana— presents life in Montana during the late 1800s and early 1900s through images of children and their written reminiscences.

Fight for Statehood and Montana's Capital— outlines how Montana struggled to become a state and to select its capital city.

Frontier Towns— illustrates the development, character, and design of early Montana communities.

Jeannette Rankin: Woman of Peace— presents the life and political influence of the first woman elected to Congress.

Native Americans Lose Their Lands— examines the painful transition for native peoples to reservations.

Power Politics in Montana— covers the period of 1889 to the First World War when Montana politics were influenced most by the copper industry.

The Depression in Montana— examines the impact of the Depression and the federal response to the Depression in Montana.

The Energy Industry— discusses the history and future of the energy industry in Montana.

Transportation— describes how people traveled in each era of Montana's development and why transportation has so influenced our history.

(continued)

VIDEOS

Capitol Restoration Video— shows the history, art, and architecture of Montana's State Capitol prior to the 1999 restoration. Created by students at Capital High School in Helena.

"I'll ride that horse!" Montana Women Bronc Riders— Montana is the home of a rich tradition of women bronc riders who learned to rope, break, and ride wild horses. Their skill and daring as horsewomen easily led to riding broncs on rodeo circuits around the world. Listen to some to the fascinating women tell their inspiring stories.

Montana: 1492— Montana's Native Americans describe the lifeways of their early ancestors.

People of the Hearth— features the role of the hearth in the lives of southwestern Montana's Paleoindians.

Russell and His Work— depicts the life and art of Montana's cowboy artist, Charles M. Russell.

The Sheepeaters: Keepers of the Past— When the first white men visited Yellowstone in the early nineteenth century, a group of reclusive Shoshone-speaking Indians known as the Sheepeaters inhabited the Plateau. They had neither guns nor horses and lived a stone-age lifestyle, hunting Rocky Mountain Bighorn sheep for food and clothing. Modern archaeology and anthropology along with firsthand accounts of trappers and explorers help to tell the story of the Sheepeaters.

Primary Sources and How to Use Them

The Montana Historical Society Education Office has prepared a series of worksheets to introduce you and your students to the techniques of investigating historical items: artifacts, documents, maps, and photographs. The worksheets introduce students to the common practice of using artifacts, documents, maps, and photographs to reveal historical information. Through the use of these worksheets, students will acquire skills that will help them better understand the lessons in the User Guide. Students will also be able to take these skills with them to future learning, i.e. research and museum visits. These worksheets help unveil the secrets of artifacts, documents, maps, and photographs.

MONTANA HISTORICAL SOCIETY

See the examples below for insight into using these worksheets.

Artifacts

Pictured at left is an elk-handled spoon, one of 50,000 artifacts preserved by the Montana Historical Society Museum. Here are some things we can decipher just by observing it: It was hand-carved from an animal horn. It looks very delicate.

From these observations, we might conclude that the spoon was probably not for everyday use, but for special occasions. Further research has told us that it was made by a Sioux Indian around 1900. This artifact tells us that the Sioux people carved ornamental items, they used spoons, and they had a spiritual relationship with elk.

Photographs

This photograph is one of 350,000 in the Montana Historical Society Photographic Archives. After looking at the photograph, some of the small "secrets" that we can find in it include: the shadow of the photographer, the rough fence in the background, the belt on the woman's skirt, and the English-style riding saddle.

Questions that might be asked of the woman in the photo are: Does it take a lot of balance to stand on a horse, is it hard? Was it a hot day? Why are you using an English-style riding saddle?

MONTANA HISTORICAL SOCIETY

(continued)

MONTANA HISTORICAL SOCIETY

Documents

This document is part of the Montana Historical Society's archival collection. Reading the document can give us a lot of information: It is an oath pledging to catch thieves. It was signed by 23 men in December of 1863. It mentions secrecy, so obviously this document was only meant to be read by the signers.

Further investigation tell us that this is the original Vigilante Oath signed by the Virginia City Vigilantes in 1863. The two things this document tell us about life in Montana in the 1860s are: there were lots of thieves in Virginia City and that traditional law enforcement was not enough, so citizens took to vigilance to clean up their community.

Maps

This map is part of the map collection of the Library of Congress. Information that can be gathered from observing the map includes: The subject of the map is the northwestern region of the United States—west of the Mississippi River. The map is dated 1810 and was drawn by William Clark. The three things that are important about this map are: it shows that there is no all-water route to the Pacific Ocean, it documents the Rocky Mountains, and it shows the many tributaries of the Missouri River.

LIBRARY OF CONGRESS

How to Look at an Artifact

(Adapted from the National Archives and Records Administration Artifact Analysis Worksheet.)

Artifact: An object produced or shaped by human workmanship of archaeological or historical interest.

1. What materials were used to make this artifact?

☐ Bone	☐ Wood	☐ Glass	☐ Cotton
☐ Pottery	☐ Stone	☐ Paper	☐ Plastic
☐ Metal	☐ Leather	☐ Cardboard	☐ Other_____

2. Describe how it looks and feels:

Shape _____

Color _____

Texture _____

Size _____

Weight _____

Moveable Parts _____

Anything written, printed, or stamped on it

_____

Draw and color pictures of the object from the top, bottom, and side views.

Top	Bottom	Side

(continued)

3. Uses of the Artifacts.

A. How was this artifact used? _____

B. Who might have used it? _____

C. When might it have been used? _____

D. Can you name a similar item used today? _____

4. Sketch the object you listed in question 3.D.

5. Classroom Discussion

A. What does the artifact tell us about technology of the time in which it was made and used?

_____

_____

B. What does the artifact tell us about the life and times of the people who made and used it?

_____

_____

How to Look at a Photograph

(Adapted from the National Archives and Records Administration Photograph Analysis Worksheet.)

Photograph: an image recorded by a camera and reproduced on a photosensitive surface.

1. **Spend some time looking at the whole photograph. Now look at the smallest thing in the photograph that you can find.**

   What secrets do you see? _____

   _____

   _____

2. **Can you find people, objects, or activities in the photograph? List them below.**

   People _____

   _____

   Objects _____

   _____

   Activities _____

   _____

3. **What questions would you like to ask of one of the people in the photograph?**

   _____

   _____

4. **Where could you find the answers to your questions?**

   _____

   _____

How to Look at a Written Document

(Adapted from the National Archives and Records Administration Written Analysis Worksheet.)

Document: A written paper bearing the original, official, or legal form of something and which can be used to furnish decisive evidence or information.

1. Type of document:

☐ Newspaper ☐ Journal ☐ Press Release ☐ Diary
☐ Letter ☐ Map ☐ Advertisement ☐ Census Record
☐ Patent ☐ Telegram ☐ Other_____

2. Which of the following is on the document:

☐ Letterhead ☐ Typed Letters ☐ Stamps
☐ Handwriting ☐ Seal ☐ Other _____

3. Date or dates of document:_____

4. Author or creator:_____

5. Who was supposed to read the document? _____

_____

6. List two things the author said that you think are important:

1. _____

2. _____

7. List two things this document tells you about life in Montana at the time it was written:

1. _____

2. _____

8. Write a question to the author left unanswered by the document:

_____

_____

How to Look at a Map

(Adapted from the National Archives and Records Administration Map Analysis Worksheet.)

Map: A representation of a region of the earth or stars.

1. What is the subject of the map?

☐ River ☐ Stars/Sky ☐ Mountains
☐ Prairie ☐ Town ☐ Other _____

2. Which of the following items is on the map?

☐ Compass ☐ Scale ☐ Name of mapmaker
☐ Date ☐ Key ☐ Other _____
☐ Notes ☐ Title

3. Date of map: _____

4. Mapmaker: _____

5. Where was the map made: _____

6. List three things on this map that you think are important: _____

_____

_____

_____

7. Why do you think this map was drawn? _____

_____

8. Write a question to the mapmaker that is left unanswered by the map.

_____

Standards and Skills

State 4th Grade Social Studies Standards

Lesson Number:	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Students access, synthesize, and evaluate information to communicate and apply social studies knowledge to real world situations.	✔	✔	✔	✔	✔	✔	✔
Students analyze how people create and change structures of power, authority, and governance to understand the operation of government and to demonstrate civic responsibility.	✔		✔				
Students apply geographic knowledge and skill (e.g., location, place, human/environment interactions, movement, and regions).		✔			✔	✔	✔
Students demonstrate an understanding of the effects of time, continuity, and change on historical and future perspectives and relationships.	✔	✔	✔	✔	✔	✔	✔
Students make informed decisions based on an understanding of the economic principles of production, distribution, exchange, and consumption.	✔		✔	✔			✔
Students demonstrate an understanding of the impact of human interaction and cultural diversity on societies.		✔	✔		✔	✔	

(continued)

Skill Areas

Lesson Number:	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Using primary documents					✔	✔	✔
Using objects		✔	✔		✔	✔	
Using photographs					✔	✔	
Art							
Science	✔		✔	✔			
Math	✔		✔				✔
Reading/writing		✔			✔	✔	
Map Skills		✔			✔		✔
Drama, performance, re-creation							
Group work	✔		✔				
Research							
Music							
Bodily/Kinesthetic		✔	✔	✔			
Field Trip							

Historical Narrative for Fourth Graders

Montana Wealth

The first people who lived in Montana valued food, family, spiritual power and horses. Though they probably saw shiny gold specks or nuggets in the water and land around them, Montana Indians did not value gold or other precious minerals the way European cultures did.

Mountain men and missionaries noticed gold, but they were not really interested in it. It wasn't until after the beaver fur trade ended that people stumbled upon gold in Montana streams and rushed to the gold fields.

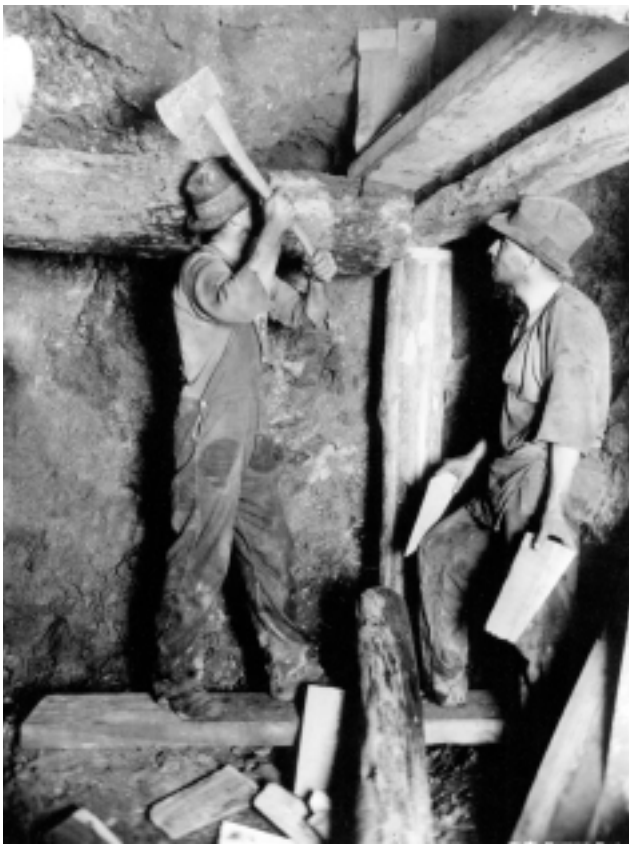
Gold is Discovered!

The earliest gold discovery in Montana took place in 1858 in Gold Creek. Discoveries in Bannack followed in 1862, then Virginia City in 1863. Men returning from the rich California gold mines, down on their luck, decided to pan for gold "one last time" before giving up for good. The Four Georgians found gold in 1864 and named their stake "Last Chance Gulch."

Placer Mining

Early mining was done with a pan and flowing water. Gold is very heavy. The miner scoops a bit of gravel and water in his wide-brimmed gold pan. He swishes and swirls the water in the pan until little bits of gravel fall over the edge, leaving the gold in the pan. It is tricky and very tiring work. Working a stream for bits of color is called placer mining.

Little towns or gold camps grew overnight as excited miners rushed to a strike in hopes of getting rich. Few of these miners expected to stay in Montana. Most hoped to make enough money to return to their homes in the East. Many came hoping to be the lucky ones to strike it rich; few actually were. In fact it was the merchants, bankers, freighters, and shopkeepers who did best of all. This was called "mining the miners."



MONTANA HISTORICAL SOCIETY

Shoring timbers in a Butte mine.

Copper Mining

Sometimes precious metals lie deep in the earth, and it takes heavy equipment, many men, and lots of money to find and mine it. Underground mining is very dangerous. As people mined gold they found other metals like silver and copper. Copper became important as electricity found its way into homes and businesses. Copper wires conduct electricity. An industry was born, and Butte, Montana, became the "richest hill on earth" by 1890.

(continued)

When copper ruled in Montana, there were few cities that could rival Butte. Butte boasted beautiful homes, stores, schools and people from all over the world. When it became too expensive to mine the underground veins, the copper industry closed. Many people left the state, and the city changed. Left behind were large, empty tunnels and pits that once held precious ores.

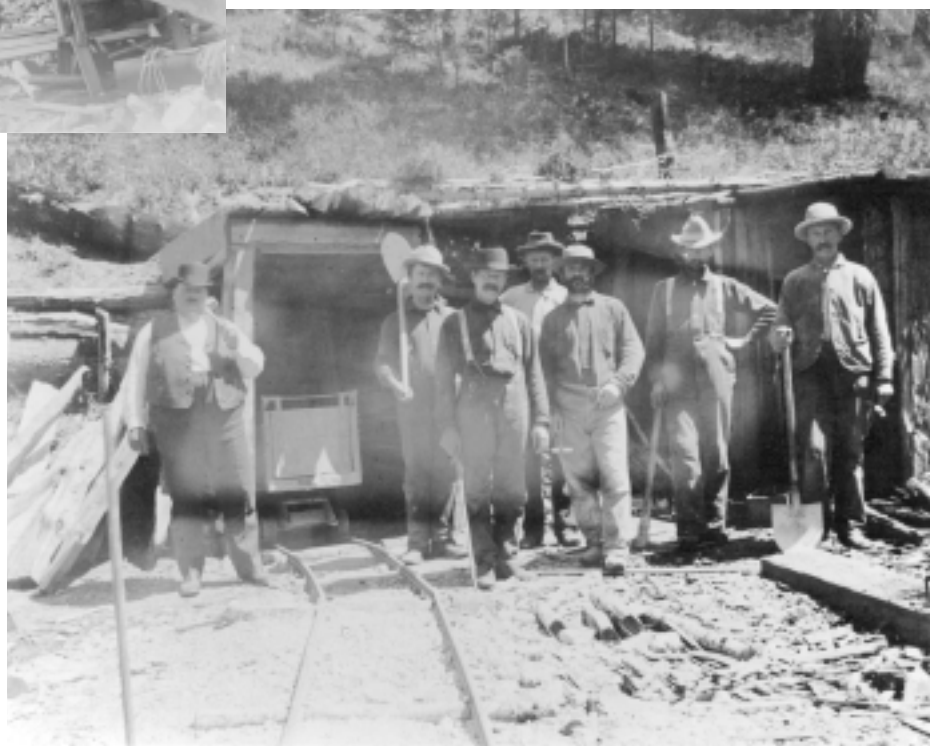
MONTANA HISTORICAL SOCIETY

Hydraulic mining on Nelson Gulch near Helena, Montana, about 1905.

Coal Mining

Coal is mined in Eastern Montana. At one time coal was used to heat homes and to fire huge steam-powered railroad engines. Large sections of coal-bearing land were mined. Shovels and trucks removed the coal, leaving the scarred land.

After World War II, coal was less important to the world. Today, gold, silver, copper and coal can still be found and mined in Montana. The cost of mining each of these precious minerals is expensive. Sometimes it is not worth the cost of mining. Montanans worry about how to care for their beautiful land and how to provide jobs for miners. Can we do both? What do you think?



MONTANA HISTORICAL SOCIETY

Miners in front of Alice Copper Mine, Butte, Montana, about 1902.

Historical Narrative for Instructors

Montana Wealth

Though gold attracted adventurers, explorers and heads of state for thousands of years, it held little interest to Montana's First People. Wealth to them was measured in very different ways, like in how many horses they owned, the size of their family, their hunting range, or spiritual power. Even the fur trappers, traders and missionaries feared an onslaught of people coming to this remote area looking for gold. They guarded the secrecy of gold discoveries.

Gold is Discovered!

It wasn't until the late 1850's, at least ten years after the famous California strikes, that miners came to Montana in hopes of striking it rich. The first discovery was made in Gold Creek in 1858. Then Bannack yielded a rich find in 1862, and Virginia City followed shortly after. Prickly Pear Creek was the scene in 1864 where the Four Georgians, returning to the gold fields in California, discovered fine gold. Determined to give it one last chance, the miners struck gold. Their stake was aptly called "Last Chance Gulch."

Placer Mining

Known as placer mining, these early attempts to extract gold from cold mountain streams was often done with nothing more than a pan, a shovel, and the force of the flowing water. A miner would scoop a pan of gold-bearing gravel, swirl it so that the lighter gravel would fall off the edge of the pan, leaving the heavier gold on the bottom. It was tiresome work, and miners were exposed to cold, lawlessness and a struggle to find adequate provisions.

In the case of successful gold discoveries like in Alder Gulch or Last Chance Gulch, camps and towns hastily grew around the strikes, offering stores, banks, lodging, entertainment, schools and theater. Once the gold played out, the character of the once booming towns changed quickly. Helena survived for two significant reasons: it remained a banking and commercial center, and then became the state capital.

Underground Mining

Rich ore veins lay well beneath the surface of Montana's earth. Outside investors, sophisticated equipment and many men from all over the world made underground mining a profitable industry in Montana. The Drumlummon Mine in Marysville, and the Anaconda Copper Mining Company in Butte are just two examples of operations that yielded millions of dollars for owners and investors.

Copper Mining

Gold, silver, and copper are often found together. At first, miners did not have use for copper and considered it a nuisance. Once the practical applications of electricity became known, copper dominated Montana mining and promoted Butte to "the richest hill on earth." Ruling this impressive culture of opulence, excess and competition were the "cooper kings", Marcus Daly, William A. Clark, and F. Augustus Heinze.

As decades passed, it became more and more expensive to extract the precious ores. As international demand lessened and the costs associated with mining rose, it was no longer cost effective for barons or companies to engage in the Butte/Anaconda operations. While Daly and Clark are legendary in their efforts to provide for the people and culture of Butte, all that remains of their industry today is a large open pit filled with toxic water.

(continued)

Coal Mining

In Eastern Montana lie large beds of sub-bituminous and lignite coal. For many years, these fossils fuels heated homes and fired the steam-powered locomotives traversing the state. After World War II, trains converted to diesel power, and many homes reverted to other forms of heat. Coal mining operations suffered.

Environmental Concerns

In all of Montana's extractive resources, there is the age-old dilemma. Part of what makes Montana so special is the beauty of its landscape. And part of what makes Montana a viable economic force is its extractive resources. These include mining as well as timber. To harvest these resources is to deface the environment.

Large companies interested in doing business in Montana are daunted by high costs and by the environmental pressures to repair the landscape. Gone are the days when non-resident gold seekers, intent on striking it rich, could remove Montana's wealth without regard for the destruction that was left behind.

Outline for Classroom Presentation

I. Gold is Discovered!

A. Who cares?
   1. Indians and early explorers view towards gold
   2. Missionaries and settlers were curious

B. Where was color first found?
   1. Gold Creek in 1858; Bannack 1862; Virginia City 1863
   2. Last Chance Gulch in 1864

C. How is gold taken from a stream?
   1. Placer mining
      a. properties of gold
      b. news travels fast
   2. Pans, rockers, dredges
      a. assay office
      b. methods of exchange

II. Quartz Mining

A. What happens when the gold and silver lies deep underground?
   1. Heavy equipment and outside investors
   2. Hydraulic hoses and environmental disasters

B. Did anyone get rich?
   1. Thomas Cruse at the Drumlummon
   2. Speculators and businessmen

III. Copper Mining

A. Why is it called "The Richest Hill on Earth"?
   1. Butte gold, silver, lead and copper
      a. underground mining operations
      b. the boom of related industries such as timber
   2. Difficult to separate ore from rock
      a. smelter operations
      b. molten ingots

B. When did the mining of copper become worthwhile?
   1. The common use of electricity
      a. lights
      b. street cars and trolleys
   2. Arrival of railroads
      a. building railroads
      b. rail lines through Montana

(continued)

C. Who were the "Copper Kings"?
   1. Marcus Daly
   2. William Clark
   3. F. Augusts Heinze

IV. Mining Camps, Boomtowns, Cities and Culture

A. Why bother with brick?
   1. Temporary mining camps
      a. tents and timber
      b. fire danger
   2. Bricks, masonry and mansions
      a. wealth and permanence
      b. power and prestige
   3. Early businesses
      a. expense of everyday supplies
      b. complications of limited transportation links
      c. families less common

B. What happens when the ore lasts?
   1. Development of cities and towns
      a. transportation links
      b. merchants, businesses, services
   2. Society and culture
      a. schools, hospitals, churches, theatres
      b. influences of women

C. What happens when the ore "plays out"?
   1. Relics and architecture survive
   2. Ghost towns and drifting populations

D. Are gold, silver, lead and copper still mined in Montana?
   1. Influence of world demand
   2. Influence of the cost of mining and the world economy
   3. Location of major ore bodies

V. Coal Mining in Eastern Montana

A. What kinds of coal were found in Montana?
   1. Subbituminous and lignite
   2. Strip mining and outcroppings

B. What is coal used for?
   1. Some early day heating
   2. To fire railroad locomotives
      a. use lessened when trains converted to diesel
      b. WWII influenced production

C. How did environmentalists become involved with coal mining?
   1. Northern Plains Resource Council
   2. Coal Severance Tax

Amazing Montanans—Biographies

Idora Guthrie

When I was four years old, my parents took me to Utica, New York, to have my photograph taken. The year was 1869, and photographs were rather new. I wore my best dress, and my mother curled my hair with a hot iron. While the photographer prepared to take my picture, I had to stand very still, which was not easy for me. I wanted to run out of the studio and skip all the way home.

As a young girl I loved to read, and I did very well in school. I knew I wanted to be a teacher. I attended a school for young ladies not far from my hometown in New York. In 1901 I moved to Helena, Montana, to help my aunt run a boarding house. I taught school near Marysville and met Herbert Guthrie who was a miner. We were married a few years later.

Herbert worked the mines in Butte and in Marysville. Throughout those years I helped as best I could by keeping house, making meals and tutoring students. We did not have very much money, and I was always tired. My husband worked hard, too, and he often did not have time for me. I was very lonely for my family back in New York.

We adopted a five year old boy, Raymond, whose father died in a mine accident. I loved him very much. In 1920, I learned that my mother was ill, so I left Montana to care for her in New York. There was part of me that wanted to stay in New York forever, but I didn't. Herbert became ill with the deadly disease common to miners, tuberculosis, and Raymond missed me. My family needed me, so I returned to Montana.

MONTANA HISTORICAL SOCIETY

Idora Smith Guthrie at age 4.

Being the wife of a miner was hard work. But I'll never forget the first snows in the mountains, and the excitement of the train rides into town, and the importance of good friends.

Vocabulary List

Bedroll – bedding and some supplies all rolled together in a blanket for easy carrying.

Carbide lantern – a small light that could be attached to a miner's helmet; when mixed with water the carbon contained in the lower part of the lantern turned into a gas; which, when ignited, gave off light.

Claim jumper – person who illegally worked another's mining claim.

Converter – a huge furnace used to melt ore before it was poured into molds to form ingots; though sometimes spelled "convertor", the correct spelling is with an "E."

Freight line – the established route for transportation of supplies. The Mullan and Ft. Benton roads were important freight lines in Montana.

Gold camp – the living area for miners made up mostly of tents and other temporary shelters.

Gold rush – the rapid movement of people to a new place in search of gold.

Hydraulic mining – the use of water under pressure to wash gravel off hillsides, which was then run through sluices to extract gold.

Ingots – a mass of metal cast into a convenient shape.

Legend – an unverified popular story handed down from earlier times.

Long tom – a long, narrow box made of wood and iron used with water to extract gold from dirt.

Ore – a mineral containing valuable matter.

Pan – noun: a round shallow metal container used to separate gold from waste by washing. Verb: to wash earth and gravel in a pan in search of gold. Panning for gold was difficult work requiring a strong back; one wash may have taken fifteen minutes.

Pick – a heavy wooden-handled iron or steel tool pointed at one or both ends.

Placer mining – the separation of gold from gravel deposits, using water; first miners to a strike used placer methods because it was relatively easy and inexpensive.

Precious metals – substances of high value, such as silver and gold.

Quartz mining – process by which chunks of mineral-bearing rock are removed from their formations, crushed into gravel, and washed with water to remove the precious metal.

Rocker – a wooden box or trough set on rockers and used with water to extract gold from gravel.

Shaft – a vertical or inclined opening made for finding or mining ore.

Sluice box – a sloping, wooden trough with slats nailed to its inner bottom. Gold miners deposit gravel near the top of the trough and then wash the ore down the flume, leaving the heavier gold flakes at the bottom.

Smelter – an establishment where ore is melted to separate the metal.

Stamp mill – a device to crush ore-containing rock, used in quartz mining.

Strike – discovery of gold or other precious metal.

Vein – a narrow channel of ore in rock or earth.

Vigilante – a volunteer citizen who joined with others to suppress and punish criminals.

War of the Copper Kings – the conflict between the copper mining barons (Daly, Clark and Heinze) in Butte.

Lesson 1: How Much Does it Cost to Light Your School?

Objective:

At the conclusion of this lesson, students will be able to:

- Discuss the importance of mining in Montana and energy in their state.

Time:

One class period.

Materials:

- Footlocker Materials: none
- User Guide Materials: Worksheet entitled "How much does it cost to light your school?"
- Teacher Provided Materials: none

Pre-Lesson Preparation:

More than 75% of the coal mined in the United States is used to produce electricity. Typically it takes about one ton of coal to produce 2500 kilowatt-hours of electricity. By checking the number of kilowatt-hours used during a billing period, a customer can determine how many pounds of coal were used to meet his or her needs- presuming that all the power was coal generated. Here are some examples of how much coal is used yearly by a family of four to produce the electricity needed to operate various appliances.

- Electric water heater- 3,375 pounds
- Range (cooking stove)- 560 pounds
- Hand iron- 48 pounds
- Hairdryer- 20 pounds
- Vacuum cleaner-37 pounds
- Clock- 14 pounds
- Color television- 256 pounds

The U.S. has approximately 30% of the world's coal reserves. Today, electricity can be produced cheaper from coal than from gas, oil, or nuclear power. Most of the costs of the mining and burning coal in an environmentally safe manner are included in the cost of today's coal. Consequently coal should remain a reasonably priced source of electricity in comparison to other resources. The cost of transportation to deliver coal to the power plant can be the largest factor in the high price people pay for electricity.

Procedure:

1. Have the students do the calculations and fill in the chart provided on the worksheet.
2. Discuss the actual cost per hour to operate a fluorescent bulb in your area and the reasons that regional electrical costs vary.

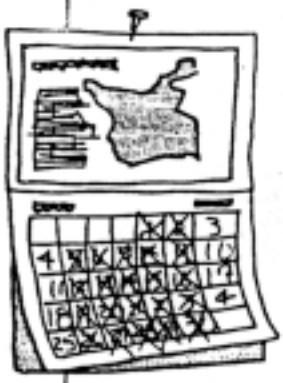
Discussion Questions:

1. Discuss how you could "lower" the cost of lighting your classroom and your school.
2. Why is coal a good fuel source for producing electricity?
3. What are some of the problems we need to solve to make coal a better fuel source?

How Much Does it Cost to Light Your School?

Materials

Pencil and paper
Classroom with fluorescent bulbs
Chalkboard and colored chalks
OR
Newsprint pad and felt-tipped markers



First determine how much electrical energy it takes to light your classroom for 1 hour, then compute the cost. Record this amount on the table below.

Number of tubes in your classroom	×	3¢*	=	Cost per hour to light your classroom

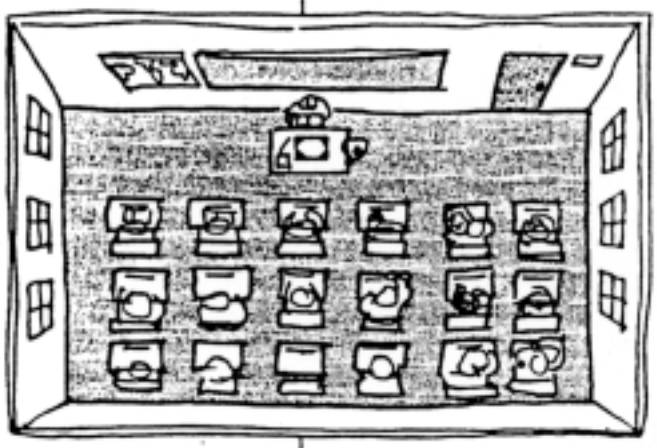
Then, compute how much it costs to light your classroom for 1 day. Record below.

Cost per hour to light your classroom	×	Hours per day classroom is lit	=	Cost per day

***Note**

Fluorescent tubes cost approximately 3¢ per hour for the electricity needed to light them. The cost ranges from 2¢ to 4.5¢ per hour, depending on where you live.

How much does it cost to light your classroom for 1 week? 1 month? 1 year? How many kilowatt hours (kwh) of electricity were used?
How many fluorescent tubes are there in your school? How many classrooms? How much does it cost to light your entire school for 1 hour? 1 day? 1 week? 1 month? 1 year? How many kwh of electricity were used? Record your calculations below.



	Classroom	School
Cost per hour		
Cost per day		
Cost per week		
Cost per month		
Cost per year		
Kilowatt hours used		
Tons of coal used		

An average 2500 kwh of electricity are produced by burning 1 ton of coal.
How many tons of coal would it take to light your classroom? Your school?

Lesson 2: Mining Legends

Objectives:

At the conclusion of the lesson, students will be able to:

- demonstrate their knowledge of what makes a story a legend by writing one;
- demonstrate their map skills by creating a treasure map.

Time:

One class period.

Materials:

- Footlocker Materials: mining tools, miners clothes
- User Guide Materials: none
- Teacher Provided Materials: none

Pre-Lesson Preparation:

Twelve-year-old Conrad Reed made the first documented discovery of gold in the United States in 1799 while shooting fish with a bow and arrow in a North Carolina stream. Because gold was unknown in this part of the country, the boy's father kept the piece for several years and used it as a doorstop. In 1802, a jeweler properly identified it as gold. Gold was mined in the U.S. prior to the Revolutionary War, but authentication of those discoveries is still missing. Some regions of Arizona have been mined for more than 600 years. The fabled Seven Cities of Cibola directed Spanish exploration of the New World in the 1500's. The discovery of gold lured thousands of people to the American Frontier, and these prospectors settled the West and Canada. The first authenticated U.S. gold rush was in Georgia in 1828, (though many believed that the lure of gold in Georgia did not create a true gold rush.) The famous California Gold Rush began in 1849; followed by Colorado in 1859; Montana in 1863; South Dakota in 1874; Alaska in 1898; and Nevada in 1902.

Procedure:

1. Discuss the term "legend." What is fact? What is fiction?
2. Working alone or in groups, students will create their own legend about their great Uncle Earl Jones and his "valuable" treasure.
3. Students will also create a treasure map to Uncle Earl Jones' treasure, utilizing the classroom, playground, or own creative landscape.

Further Exploration:

- Create your own treasure map and have students track down the "gold."

Lesson 3: Motherlode Gold Mining

Created by Jim Schulz

Objective:

At the conclusion of the lesson, students will be able to:

- Discuss the importance of merchants in a mining town;
- Demonstrate gold panning techniques.

Time Line

*One week for complete lesson—five 55 minute periods.

- Day 1: Pre-lesson preparation—demonstration of gold panning technique/density of minerals: silicon vs. lead/review of objectives.
- Day 2 & 3: Motherlode lesson and clean-up.
- Day 4: Counting of gold panned/figuring expenses/tabulating totals.
- Day 5: Writing about and illustrating the events of the game. Share with class.

Materials

- Footlocker Materials: none
- User Guide Materials: Motherlode worksheet master
- Teacher Provided Materials:

  5 5-gallon plastic buckets

  8 plastic stream tables (These can be purchased through a science supply catalogue and are well worth the price.)

  12 small gold pans (Metal pie plates will do.)

  10 gallons of fine sand

  12 plastic containers for pokes (Small yogurt containers are fine. Plastic cigar tubes are better.)

  8 - 8" x 8" metal screens with 1/2" openings (Metal fence screening is just fine.)

  2 large coffee cans

  Number 8 lead or steel shot, variety of small, medium, and large lead sinkers—These supplies will represent the "gold nuggets." Paint them yellow. I also melt lead into a variety of weird-shaped nuggets to make the experience more realistic. Take this motley assortment and spread it throughout two, five-gallon buckets filled with sand. This is your "diggings'." Label each bucket with a different claim name, i.e. "Dirty Shirt" or "Last Chance."

  Copy the Motherlode commodities price list page and directions for each student.

Procedure

1. Set up students in "claim" groups of four. Assign them to a sluice box (stream table).
2. Hand out one gold pan, one poke, one screen, and four copies of price list/directions to each group.
3. Review game directions. As a group they must decide what commodities they will need for a month. This is a great math lesson in creating a budget and buying on credit. Of course, you as the teacher run the only mercantile in the mining camp, and you sell the miners what they need on credit. You may charge interest if you wish. Each group must fill out their budget worksheet and present it to you, the storeowner, for approval before you allow them to work their claim.
4. Slightly elevate one end of the stream table with a wooden block. Pour three

(continued)

coffee cans of water into each stream table. This represents the water needed for placer mining and gold panning.

5. Once groups have budget approval, they approach you and request ore from one of the two claims previously labeled. Scoop out ½" can of paydirt and put it in the gold pan.
6. Students take paydirt to sluice box (stream table) and sift this through the screen to remove large stones and nuggets. Keep paydirt concentrated on high end of sluice box. Place nuggets and "gold flakes" (lead shot) in the poke (plastic container).
7. Panning the rest of the paydirt begins in earnest. Students use proper gold panning techniques with the aid of the sluice box.
8. Students repeat this each time till the paydirt runs out.
9. Clean-up includes dumping the wet sand into waste buckets to be dried and re-used, pouring dirty water into waste bucket to be deposited on the lawn, wiping down and drying sluice boxes and station. Make this chore worth credit in your store and tell them it will help pay their bill.
10. Tally up the earnings. Did they make a profit? How much per person? What about a loss? Who makes the money at a mining camp?

Teacher Hints and Advice From the Lesson Creator

I, Jim Schulz—creator of the Motherlode Lesson—have done this activity for 22 years and it has been a no fail lesson every year. It doesn't matter what kind of students you may have—it hooks them. You witness the lure and madness of fake "gold fever" as your students become immersed in striking it rich. It is messy and noisy, with minor spills occurring every few minutes just like in a real gold camp. I have done it inside the classroom as well as outside. Wherever you decide to do it, you will know that the students are focused and engaged. They are learning.

Be in the moment, and dress-up in period clothing. Revel in acting the part of a hard-driving storeowner. I do, and it makes the lesson so much more exciting and memorable. Though I personally do not promote the idea of gambling, I do allow it in this activity for the sake of authenticity. The game is called "coin toss poker." I bring a real silver dollar to school and badger the students who have panned a lot of nuggets to gamble. They bring their hard earned cash over to "Honest Jim's Criterion Hall of Amusement" and indulge in the simple sport of "heads or tails." Sometimes they win, but most times they lose.

As you engage in this activity, be creative. Make it your own. Your students will never forget it.

MONTANA HISTORICAL SOCIETY

Panning for gold.

THE MOTHERLODE

Virginia City, Montana Territory 1864

Will You Strike it Rich?

Many people went forth with the high hopes of striking it rich in the gold fields of Montana, but few ever did. Those that made a fortune did so because of luck, perserverence and good paydirt!!!!

Objective: To make your fortune.

SUPPLIES AND ESSENTIALS

Commodity	Price
handkerchief	$ .50/ea
butter	$ 1.50/lb
eggs	$ 1.00/ea
flour	$ 62.00/100 lb sack
sugar	$ .60/lb
coffee (scarce)	$ 1.00/lb
corn meal	$ 19.00/sack
whiskey	$ 8.00/gal
bread	$ 1.00/loaf
bacon	$ 1.25/lb
gold pan	$ 3.00
pick	$ 8.00
shovel	$ 10.00
saw	$ 10.00
nails	$ 50.00/100 lb keg
cloth	$ 2.00/yd
boots	$ 60.00/pair
hat	$ 20.00
tent	$ 50.00
rope	$ 5.00/100 ft
canvas pants	$ 7.50/ea
thread	$ .50/spool

Gold Standard = $26.00/oz.

$GOLD$

small black nuggets

• • • 1700 = 1 oz

medium silver nuggets

15 = 1 oz

large iron nuggets

10 = 1 oz

medium irregular nuggets

5 = 1 oz

large oval nuggets

1 = 1 oz

Directions for Motherlode Lesson

You will need to work your claim for one month (4 gold pans worth). You and your partner must first establish a grubstake with credit from Rockfellow's Store. In the coming weeks you will need to feed, clothe, and shelter yourself. (You must construct a sluice box and tent site.) Working from dawn to dusk, the two of you will wear out, damage, and break the following items:

3 shovels	2 gold pans	4 pairs of pants	400 feet of rope
2 picks	2 pairs of boots	2 shirts	10 handkerchiefs

In a sudden and extremely violent thunderstorm, you will lose the following items:

1 hat	1 tent	1 saw

You and your partner will start out with 1 gold pan, 1 shovel, 1 pick, 1 hammer, the clothes on your back, and $13.00 in gold dust. You must purchase the items listed above (remember those get lost or damaged) and more in order to sustain your claim.

Fill in the following table. Figure out the money spent for the quantity used.

Number of people in your group _____

Item	Quantity	$	Item	Quantity	$
#s Butter			Cloth		
Sacks Flour			Pants		
Eggs			Thread		
Bacon			Tent		
#s Coffee			Gold Pans		
#s Sugar			Picks		
Whiskey			Shovels		
Sacks Cornmeal			Saws		
Bread			Rope		
Boots			Nails		
Hats			Poker Game		

Total Monthly Expenses:	
Total Earnings from Panning:	
Fortune or Debt per Person:	

Lesson 4: Muffin Mining Reclamation

Objective:

At the conclusion of the lesson, students will be able to:

- Explain that mining destroys the land and the process of reclamation cannot return the land, to its original appearance.

Time:

One to two class periods.

Materials:

- Footlocker Materials: none
- User Guide Materials: none
- Teacher Provided Materials: a large blueberry muffin for each student (can be homemade or store-bought), "tools"= flat and rounded toothpicks

Procedure:

1. Give each student a large blueberry muffin and one of each "tool."
2. Instruct students to "mine" their blueberries out of the muffin, making as little of an impact on the muffin as possible. They must use the tools, not their hands. This demonstrates the delicate process of mining.
3. After the blueberries have been removed, ask the students to try to reconstruct their muffin (without the blueberries=extracted minerals) to look like it did before the mining.
4. Discuss the analogy made between mining/reclaiming the earth and extracting the blueberries from the muffin.

Discussion Questions:

1. Are the impacts of mining as severe to the earth as they were to your muffin?
2. Have you ever been to the Berkeley Pit in Butte? What type of reclamation could be done there to help return the land to a habitable area?
3. Should we continue mining minerals from the earth if it is destroying the very land that supports us?
4. Is it possible to reclaim a mining site?

Further Exploration:

- Visit the Berkeley Pit or mining site near you and discuss with the miners what they are doing to reclaim the site.
- Invite a mining specialist from your area to come to your classroom and talk about reclamation laws and techniques.
- Assist with cleaning up garbage in your town—every little bit helps to keep our earth healthy.

Lesson 5: Letters Home

Objective:

At the conclusion of the lesson students will be able to:

- Explain the terms "primary source" and "archival document;"
- Discuss the limitations and advantages of learning from primary sources;
- Read and decipher a handwritten letter from a miner;
- Discuss the personal lives of Montana miners in the 1870's.

Time:

One 30-minute class

Materials:

- Footlocker Materials: photographs and mining equipment
- User Guide Materials: transparency of letter from Joe and Annie Saville
- Teacher Provided Materials: map of Montana, equipment to project transparency

Pre-Lesson Preparation:

Joe and Annie Saville lived in Butte, Montana Territory in 1876. The letter is one of thousands preserved and cared for in the Archives at the Montana Historical Society. It is a "primary source" and provides valuable information about the person who wrote it and the times in which it was written. Remind your students that Montana did not become a state until 1889, and this letter was written before statehood. The handwriting is clear, though your students may need some help.

Procedure:

1. Introduce the letter from Joe and Annie Seville. Project the transparency and identify certain parts together. For instance indicate the place, date, salutation and the signature at the end of the letter. Then begin reading the letter together. Encourage your students to consider themselves as "code busters" or "super sleuths" as they attempt to decode the handwriting.
2. Engage your students by asking the discussion questions.
3. Share the mining equipment from the footlocker with them. Which of these tools might Joe have used in the Butte mines?
4. Conclude the lesson by assigning a writing project. Ask your students to compose a letter from "Mother" to Joe and Annie.

Discussion Questions:

1. Joe and Annie have big news! What is it? What does Joe do during the day?
2. Describe the school. How many students are there and when did school open?
3. Do you think Joe's mother is happy about their move to Montana Territory? Why or why not?
4. According to Joe, how is the "health of the community"? What tragic event occurred just the day before he wrote the letter?

continued

5. Joe mentions a famous Montanan in his letter. Who is that person?
6. What is the problem with mining in Butte?
7. On your map of Montana, locate the three communities that Joe mentions: Divide, Butte and Phillipsburg. Which of these towns became the biggest mining operation in Montana?
8. What do you think happened to Joe and Annie? How could we find out?

Further Exploration:

- Health in mining communities was not good. Miners often contracted lung disease, rheumatism and fell victim to accidents. Explore diseases in the 19th century and the common cures offered to treat them. What do we know about children and infant mortality at this time? Based on Annie's experience, discuss how childbirth was attended in these times. What kinds of things may have gone wrong?

Lesson 6: Idora Guthrie's Journal

Objective:

At the conclusion of the lesson students will be able to:

- Explain the terms "primary source" and "archival document;"
- Discuss the limitations and advantages of learning from primary sources;
- Read and decipher a handwritten journal;
- Create a journal of their own.

Time:

One 45-minute class

Materials:

- Footlocker Materials – all contents
- User Guide Materials– transparency of Guthrie's journal; biography of Idora Guthrie
- Teacher Provided Materials– equipment to project transparency; paper for making mini-journals for students

Pre-Lesson Preparation:

Idora Guthrie kept journals for several years, recording common everyday events in her life. A native of New York, she came to Montana to help her aunt run a boarding house. An educated teacher, Idora taught and tutored students in Montana. She met her husband, Herbert, in Marysville. He was a miner. Even though Idora did not mine, her life was busy supporting her husband. It was necessary to cook, clean, sew and provide care to her family. Without that support, Herbert could not have succeeded in mining. When you project the journal, acquaint your students with some of the common components: date, weather and a discussion of how she was feeling or what she accomplished that day. At the conclusion of the lesson, encourage your students to keep a journal of their own, including the same components that Idora recorded.

Procedure:

1. Discuss with your students the importance of "primary documents." Remind them that the original of this journal is kept in the Archives at the Montana Historical Society. It is important because it offers a woman's view of a male-dominated activity – mining. Project the transparencies. Show how small the journal is. Indicate the place for date and weather. Then begin to read Idora's notes together.
2. Once you have read through the journal take time to ask the discussion questions and make observations. Use care in indicating that while primary documents are treasures, they do no answer all questions. In fact, taken by themselves they may be misleading. This journal is also very personal. See if your students can discover how Idora was feeling. Use the questions provided to stimulate discussion. Share the footlocker items that would help illustrate Idora's journal entries.
3. Distribute two sheets of 8-inch by 11-inch paper to each student. Instruct them to fold the paper in half making a four-paged booklet. Then using the same form as Idora modeled, instruct your students to keep a journal for at least four days (one page per day).

continued

4. Remind them to use short phrases, and to list the kinds of things they accomplished that day and how they are feeling. Don't forget the weather. When the journaling period is concluded, invite the class to compare notes. See if there are differences in how they noted the weather, for instance. Display the journals if students are willing to show them.

Discussion Questions:

1. Why is this journal considered a primary document? Why do we receive copies of primary documents and not the originals?
2. What are some things you notice about Idora? Is she happy? Why or why not? What is a "blue day"? How does she spend her day? What are some of the chores she attends to?
3. What did Idora prepare for Christmas dinner? Does it sound good to you? Why was she sad on Christmas day?
4. Have you ever been homesick?
5. Has anyone been to Marysville? It is almost a ghost town today, as very few people live there.

Further Exploration:

- Prepare Idora's Christmas dinner. See if your students are willing to contribute parts of the meal that Idora planned. Celebrate all that you have learned during your unit on mining, and share this meal together.

Lesson 7: Costs of Finding Gold

Objective:

At the conclusion of the lesson students will be able to:

- Explain the terms "primary source" and "archival document;"
- Discuss the limitations and advantages of learning from primary sources;
- Read and decipher a handwritten financial account book;
- Calculate expenses Granville Stuart incurred while prospecting;
- Locate towns, states and countries relevant to the life of Granville Stuart.

Time:

20 minutes

Materials:

- Footlocker Materials: none
- User Guide Materials: transparency of "Financial Account Book – 1865"
- Teacher Provided Materials: maps of Montana, North and South America, equipment to project transparency, ledger or lined paper

Pre-Lesson Preparation:

Granville Stuart was born in 1834 in West Virginia. At the age of 18, he and his brother James followed their father to the California gold fields. By 1852 they tried to return home, but were forced to detour into Montana Territory where they discovered gold in 1858 at Gold Creek. During the 1860's when this account was kept, Granville and James worked mainly as prospectors and small merchants in various Montana mining camps. From 1870 to 1887, Stuart ran the DHS ranch near Lewistown. From 1894 to 1898, he served as U.S. ambassador to Paraguay and Uruguay. When he returned to Montana in 1899, Granville Stuart served as librarian of the Butte Library. He wrote about his experiences in Montana's early years, recorded in *Forty Years on the Frontier*.

You will notice that "gold dust" is mentioned in the account. In the early days, gold dust was often used as a form of exchange because it was common. Kept in a "poke" or small leather bag, the dust was carefully weighed to determine its value. Many miners possessed pocket-sized scales to ensure an accurate exchange.

Procedure:

1. Acquaint your students with the life of Granville Stuart. Project the transparency of his financial account book kept in 1865. Read and discuss it together. Discuss "budgets" and the necessity of keeping track of expenses. Explain that the account book (almost 150 years old!) is very fragile. It is kept in the Archives at the Montana Historical Society. You are looking at a copy of the book. It is considered a "primary source" because a person in 1865 wrote it, no one corrected his accounting, and because it was not published. Review the value of primary sources to researchers, and the problems in using them.

2. Encourage your students to keep a financial record for one week. Record things such as lunch expenses, clothes, school supplies, and costs associated with transportation. Note also how you pay for those things. Compare costs at the end of the week. Are you surprised about how much it costs to live?

continued

Discussion Questions:

1. Why did the Montana Historical Society send us a photographic copy of Granville Stuart's financial account book, when the original would be so much more interesting?
2. Do any of you keep a budget? Does your family keep a budget? Why is it important?
3. Look at Stuart's accounting. What kinds of things did he pay for in 1865? How much did he spend? (Be sure to check Granville's addition.) How much money did he have to spend? Did he have anything left over?
4. What is gold dust? Why not just use money?
5. Look on the map of the North and South America. Locate the following places where Granville lived or to which he traveled: West Virginia, Salt Lake City in Utah, California, Montana, (Helena, Deer Lodge, Butte) and Paraguay and Uruguay in South America. By what means do you supposed he traveled?

Further Exploration:

- Learn more about the life of Granville Stuart. Research the topic of "vigilantism" and the role Stuart played in that form of "frontier justice." Although Granville Stuart was not involved in the vigilante justice while a miner, he was involved as a rancher while running the DHS ranch in the 1880's.

Words Search

Some mining terms are hidden in the letters below.
See if you can find all 13 of them.

METAL

MINERAL

STRIKE

GOLD

ROCK

COAL

PAN

SLUICE

PLACER

MINE

VIGILANTE

PICK

ROCKER

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

Word Scramble

You are on your way to the gold fields of Montana. Here is a list of things you might need to take along. Unscramble the letters.

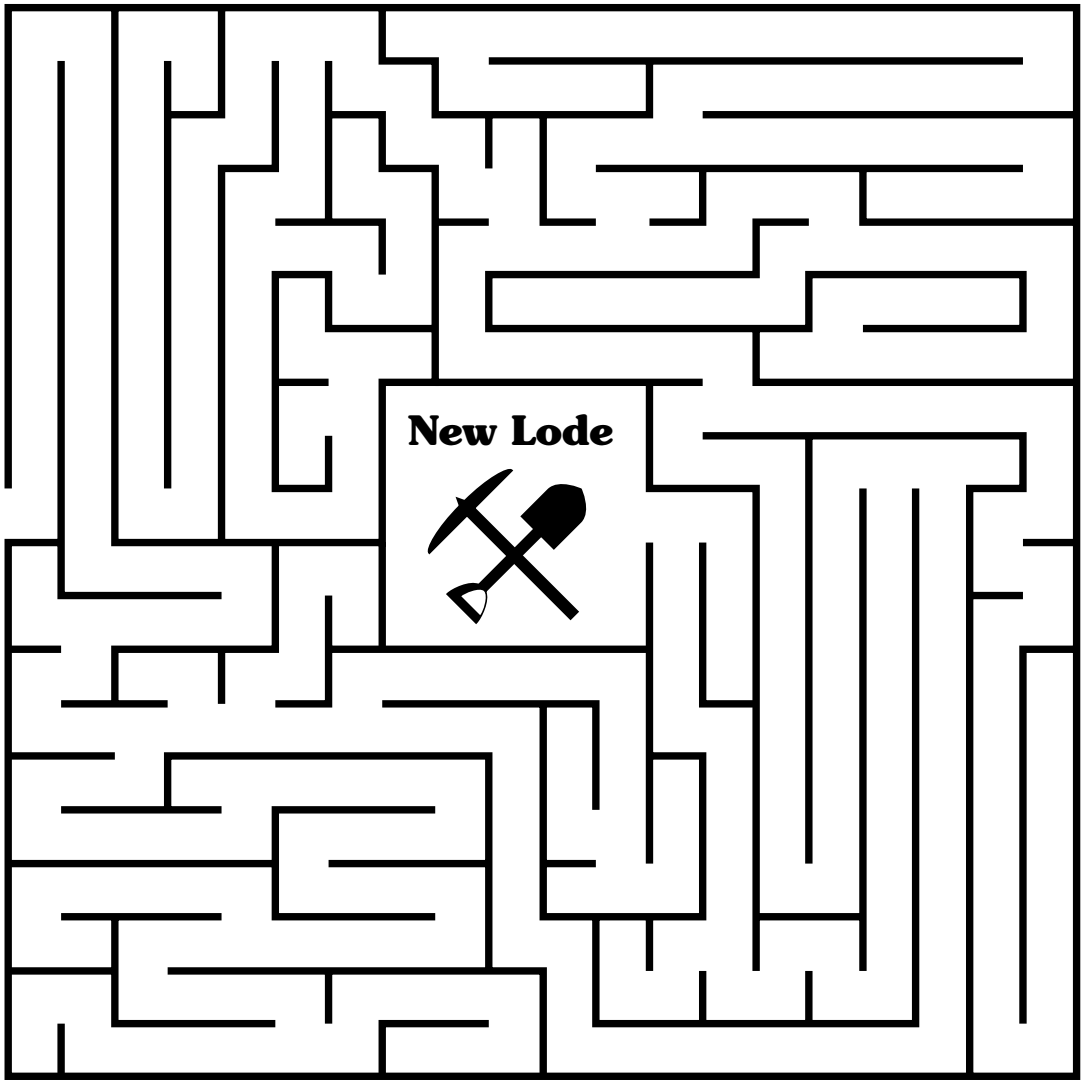
1. KIPC = _____
2. HOSVLE = _____
3. LREDOBL = _____
4. NPA = _____
5. ODFO = _____
6. OHRES = _____
7. HISRT = _____
8. OTBOS = _____
9. LBAKNTE = _____
10. NTET = _____

Word Scramble (answers)

1. KIPC = PICK
2. HOSVLE = SHOVEL
3. LREDOBL = BEDROLL
4. NPA = PAN
5. ODFO = FOOD
6. OHRES = HORSE
7. HISRT = SHIRT
8. OTBOS = BOOTS
9. LBAKNTE = BLANKET
10. NTET = TENT

Mine Maze

Find your way from the surface to the new lode at the center of the copper mine.



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