

.
“A Timeline of a Miner’s Life”

Marcia Karls, Park Meadows Elementary School, Glendale, Arizona

Overview: This lesson plan focuses on the life of Arizona miners from the early 1800s to present day.

- It allows the students to see how economy and geography has changed over the years through a miner’s life.
- It uses realistic fictional characters for language and reading to help the students relate to the life of a miner.
- Students will use primary and secondary resources to establish information about the miner’s life.
- Through recreating a miner’s camp, students will be able to not just read about the miners, but be able to recreate some the daily affairs of a miner. The students will learn how the miners used the gold and minerals that they found for trade or money. They will use math skills to learn how to weigh gold at the “General Store”.
- Students will view photographs to help gather information along with the using letters, documents, and interviews.
- Students will also view recent information about present day miners to be able to compare the past to present miner life.
- This lesson will be cross-curricular with differentiated learning incorporated into the lesson.

Recommended Grade Level:

Fourth – Fifth Grades.

Time Required:

Five, 45 minute sessions, four sessions would be better, but can do it in three sessions; one to introduce the miner and establish prior knowledge, one for investigation time where students look at, compare, and research photographs, along with listening to audios, one for setting up camp and panning for gold, one for visiting the camp, one for shared writings and assessments. With using the Three day sessions, you might want to opt watching a movie on the book, rather than reading the book in its entirety.

Objectives:

The following objectives will be achieved during this lesson for all levels of learning.

- Students will look at the history of a miner through the use of primary and secondary resources.
- Students will create a living museum of a miner’s camp and store.
- Students will be able to understand weight using both past and present measuring tools.
- Students will learn how the economy worked in a miner’s camp and surrounding towns.
- Students will use map skills to create mine location maps
- Students will compare and contrast life as a miner from past to present.
- Students will create a timeline of a miner’s life.
- Students will practice shared reading skills through whole and small group reading.

Materials/ Teacher Preparation

One week before lesson:

*Teacher needs to have available creative tools; such as markers or crayons, paper and pencils. The teacher will also provide folders or file folders to keep ongoing work in as students do class work.

*The teacher and the students need to research what might have been in a General Store and create a list. For example, flour, sugar, pie pans, etc.

*The teacher will need to send a note or letter home asking for items for their miner's camp and other items needed for the general store. **Refer to the sample letter at the end of the lesson plan that may be simply reproduced and sent home, this is just a sample and may be modified to suit individual needs.**

*The teacher will gather materials such as old blankets, pots, tripod, scales and other weighing tools.

*The teacher will need to acquire pie pans (aluminum ones or restaurant ones will do), a small child's pool (blow up or plastic), rocks of various sizes, and gold spray paint, also small bags to put gold in. Refer to the **Sources Used for the Lesson** for links to certain educational resources that you can order some of these supplies for at a minimal cost or ask for some donations. Prior to the lesson the teacher needs to spray paint the rocks gold. These will be used for when students pan for gold.

*Teacher will have a copy or copies of Brightly of the Grand Canyon by Marguerite Henry. Check with your local library for a copy. Also, if you need an alternative to the book, there is a movie version of the book. If time is an issue, group students into small groups and assign chapters for groups to read and report back on to the class. Depending on the academic levels in your classroom, choose what fits your classroom needs. **This is a great way to differentiate the lesson.**

*Teacher will use the AMP collections to select and arrange to receive the selected photographs from the appropriate depository. Refer to the **Sources Used for the Lesson, AMP Digital Sources,** for the URLs and Digital Identifiers of the suggested photographs, documents, or audio used.

Two days prior to the lesson:

*The teacher will create a timeline on chart paper and also have one for each student as a part of their assessment. Teacher will also create a Venn Diagram and a handout of a blank Venn Diagram for each student. **A sample timeline and Venn Diagram can be found at the end of the lesson plan.**

*The teacher will have primary and secondary examples to show to students; such as maps, photos, autobiographies, and biographies. (Please remember these are just examples and there are other primary and secondary resources that may be used.)

*Teacher will prepare and use appropriate technology so selected resources may be listened to or displayed for small group and whole group learning. This may include computers, projection technology, and audio equipment.

*The teacher will have maps for displaying locations of mines and maps for each student, so they can fill in the placement of mines, of Arizona or the region being studied. If teacher does not have a miner's map or physical map please refer to **Sources Used for the Lesson** part of this plan.

On days of the lesson:

The teacher will divide the class into small groups and have materials ready, there is some individual work for students throughout the lesson. If a camera or video camera is available remember to capture these educational moments to display later for the students, your school, or anyone else you want to show what awesome learners you have.

Curriculum Standards

This lesson will use the curriculum areas of math, reading, writing, and social studies.

Social Studies:

Strand 1: American History

Concept 1: Research Skills for History

PO1: Use the following to interpret historical data.

a. timelines

PO2: Describe the difference between primary and secondary sources.

PO3: Locate information using both primary and secondary sources.

Concept 7: Emergence of the modern United States

PO1: Describe the economic development of Arizona

a. mining

PO3: Identify key individuals and groups related to Arizona territorial days and early statehood.

Strand 3: Civics and Government

Concept 1: Foundations of Government

PO4: Describe the varied background of people living in Arizona.

a. Shared principles, goals, customs, and traditions.

Strand 4: Geography

Concept 1: The world and spatial terms

PO1: Use different types of maps to solve problems

PO3: Construct maps using symbols to represent human and physical features.

PO6: Locate Physical human features using maps, illustrations, images, or globes.

Concept 4: Human Systems

PO1: Describe the factors that have contributed to the settlement, economic development, growth of major Arizona cities. (e.g. mining)

- PO5: Describe the major economic activities and land use patterns of regions studied.
- Concept 5: Environment and Society
- PO3: Describe the impact of human modification (e.g. dams, mining, air conditioning, irrigating agricultural on the physical environment and ecosystems.)

Reading / Writing– Grades 4-5

Strand 1: Reading Process

Concept 5: Fluency- Read Fluently

PO1: Read from familiar prose and poetry with fluency and appropriate rhythm, pacing, intonation, and expression relevant to text.

Concept 6: Comprehension strategies: employ strategies to comprehend text

PO3: Generate clarifying questions in order to comprehend text.

PO4: Use Graphic organizer in order to clarify the meaning of the text .

PO5: Connect information and events to text to life experiences and to related text and sources.

PO6: Use reading strategies (e.g. drawing conclusions, determining cause and effect, making inferences, sequencing) to comprehend text.

Strand 3: Writing application

Concept 1: Expressive

PO1: Write a narrative based on imagined or real events, observations, or memories that

Includes:

- a. characters
- b. setting
- c. plot
- d. sensory details
- e. clear language
- f. logical sequence of events

Concept 2: Expository

PO1: Record information (observations, notes, lists, charts, map labels, and legends) related to the topic.

Math

Strand 4: Geometry and Measurement

Concept 4: Measurement – Units of Measure, Geometric Objects

PO3: Select an appropriate tool to use in a particular measurement situation.

PO5: Compare units of measure to determine more or less relationships including length and width.

PO7: Compare the weight of two objects using both US customary and metric units.

Possible Procedures

Day One (1)

- Introduce the lesson by asking the questions “What is mining?” and “What is a miner?” As students answer, list their answers on the wipe board or overhead or begin a word bank.

- After a brief overview of the students' answers, introduce the book *Brightly of the Grand Canyon*. Explain to students that over the next few days and class periods, they will be reading this book or that they will be divided into groups and each group will be assigned chapters to read, discuss, and report back on to the class. As they read they will learn more about a miner's life. Also in the next few days, tell the students that they will become a part of this life and will create names for themselves and that as a class they will recreate a miner's camp. Explain that they will learn many aspects of a miner's life not just from this book, but from maps, pictures, and even speakers of the past. Get the students excited about their journey into the past in a miner's life.
- Pass out copies of the book, if you can not get enough printed copies of the book, then copy pages for students to share. Have the students look at the illustrations on the cover and back, while they are looking; pass out a map of the United States to each student. Ask the students, just by looking at the book where do they think it takes place? Then have them mark Arizona and the Grand Canyon on their maps. Have them keep their maps so they can mark other important places as the lesson continues. Have them put it in their folders.
- On day one, read the foreword and pages 13 - 48 either as shared reading or small group reading. Also as they read discuss the pictures, map, and "miner's language" that is present in the book. Have them answer as a group *Questionnaire A (Found in the resource section.)* If students are working in small groups have them begin reading their portion of the book. For example Group A would begin Chapter 1, Group B – chapter 2, and so on. **OR** if time is an issue and you choose the video, have students fill out *Questionnaire B* during or after they watch the movie.
- Have students listen to the following AMP audio of a historical presentation about mining, then discuss the language, word usage, and key points that they heard.
[The Early History of the Ajo Mine](#)
- At the end of the lesson, have them add more vocabulary to the word bank.

Day Two (2)

- Review the pages read in the prior lesson. Ask the students if this book is true, what is the genre? This is the time to introduce primary and secondary resources.
- Ask the students, "What does Primary mean? Secondary? What is a resource? Then ask them if we put the words together as word phrase then what do they mean? So, what is Primary Resource? Secondary Resource?" Add these to your word bank, maybe even putting an asterisk or star next to them (somehow highlighting them).
- After defining these terms, ask them if they can tell some examples; then show them a few examples that you have brought. Make a Primary Resource table and a Secondary Resource table of examples. Then ask what is the book we are reading, *Brightly of the Grand Canyon*, as they answer, make sure you place a copy of the book on the appropriate table, either primary or secondary resource.
- Read and discuss pages 49 -86; or have student groups report on their chapter readings. Remember to discuss the illustrations, what they are wearing, doing, etc. After the class has done the assigned reading, briefly
- Divide the class into five groups. Each group will look at a different AMP photograph. The list of linked AMP selected photographs are:
[Sharlot Hall Panning for Gold](#)

[Blue Bird Mining Camp](#)
[Assay Office Baumann Camp](#)
[A Placer Miner's Cabin](#)
[Cook Tent and People at Crown King Mine](#)

- Have students in their groups fill out “Reading an Image; Photo Analysis Form”,(Found in resource section at end of lesson) this will guide students as they observe and discuss photographs. If time allows have students rotate so they can observe other photographs. Also, repeat the fact that photographs are a primary resource. Have them turn in the forms.
- Have students come together as a class and briefly discuss what the students observed. Hand out drawing paper and creative materials, along with writing paper. Have students draw a picture of a mine, mining camp, or what they believe a mining area may look like back in history. Have the students put themselves into the picture, following their drawing have them write a page or two autobiography of themselves as this person in history, also have students include a map of their travels,(have them use the US map given to them prior.) Have them be creative, using mining names; have them look at maps and use real town names in Arizona, they could also use mining maps. These maps are included in the resource section of this lesson. This may carry over to day 3, so allow time for students to complete assignment.

Day Three (3)

- Allow students time to finish autobiographies and pictures in history.
- Choose a few students to read and show their work. Discuss the important points of mining, the lifestyles, and setting. Collect their works, pictures, and maps.
- Read pages 87-135 in *Brightly of the Grand Canyon* and discuss briefly the story’s characters and setting. (Or have students report on their chapter readings.)
- Discuss with students reasons why people came out west to mine and what they needed to survive. Have them write a list of “items to take” on their trip out west as they start to live a miner’s life.
- Explain to the students when the lesson continues next that the class will be taking a step back in time and they will become their miner’s life. Assign certain students as cooks, bankers, general store keepers, miners, or whatever other positions the students come up with, if the students want to bring or wear items that may represent their character they are welcome to do so, but not necessary.
- Before day four, set up the room to represent a miner’s camp from the 1800s – 1900s. Prior to this day, the teacher should have gathered appropriate materials to help representation. Put sand and water in the small pool and place “gold” in the water. You may do this inside or outside. Be creative and have fun.

Day Four (4)

- Read pages 136 – 172 in *Brightly of the Grand Canyon* discuss the progression of the story and the character development thus far, also discuss the new characters that

have been introduced; or have groups report on their readings, they could use their reading questionnaires.

- The rest of this day will be dedicated to reenacting a miner's life. Guide students to pan for gold using pans and have them put their findings in a small bag. Then have them go to the bank to weigh their gold, demonstrate to students how to measure and weigh the gold or minerals found; have the banker give money or notes in exchange for gold. Finally, have miners go to the General Store to purchase items like flour, textiles, etc. (Although guns were a large part of life in the history, remember this is a classroom setting.) Have students take turns and go through the miner's life.

Day Five (5)

- Finish reading *Brightly of the Grand Canyon*; Have students write a book review, you may want students to use a form, but not necessary or have them write a summary of the book. Collect the summary or book review. All students could write a book review even if they did certain chapters, another way for this assessment is to do a collaborative book review as a class, having each student write something about the book.
- Review with the class the miner's life and ask them what the miner has an effect on. Look for answers like make money, spend money, digging or using nature, changing the ecosystem. Then have the students define economy and put economy in the word bank. Discuss with students how mining has changed and how do they think it has changed. Explain to them they will see a short video that will portray what mining is like today. Have them take notes if needed. Remind them to listen and observe carefully for some of the changes from past to present.
- Next, introduce today's miner. Show pictures or video – the following link will link you to the FX – Phelps- Dodge Corporation and will show how mining has become global and a major part of our global economy.
[12+ Minute Video on Mining](#)
- After the video or review of pictures hand out a Venn Diagram to each student; while the papers are being past out either draw one on the board or put a copy on the overhead. (There is an attachment of a Venn Diagram at the end of the lesson.)
- Review with the students the use of the Venn Diagram and what each part represents.(This should be review; however, if it is not you may want to explain further.) Then explain to the students that the assignment will be for each of them to use the Venn Diagram and compare the past miner to the present and how they were alike and how they were different.
- Collect the Venn Diagrams then together as a class fill out the Venn Diagram on the board or overhead.
- Finally, recap what they have learned about the life of a miner. Discuss with them what the jobs were like in the past and what new jobs have surfaced now in the industry (i.e. chemists, geologists, etc.) Review with the students the collective word bank they have created over the lesson periods and have them review the definitions of each. Discuss with them the importance of connecting with our history and how a miner's life is an important part of Arizona's history and will continue to be an important part.

Assessment

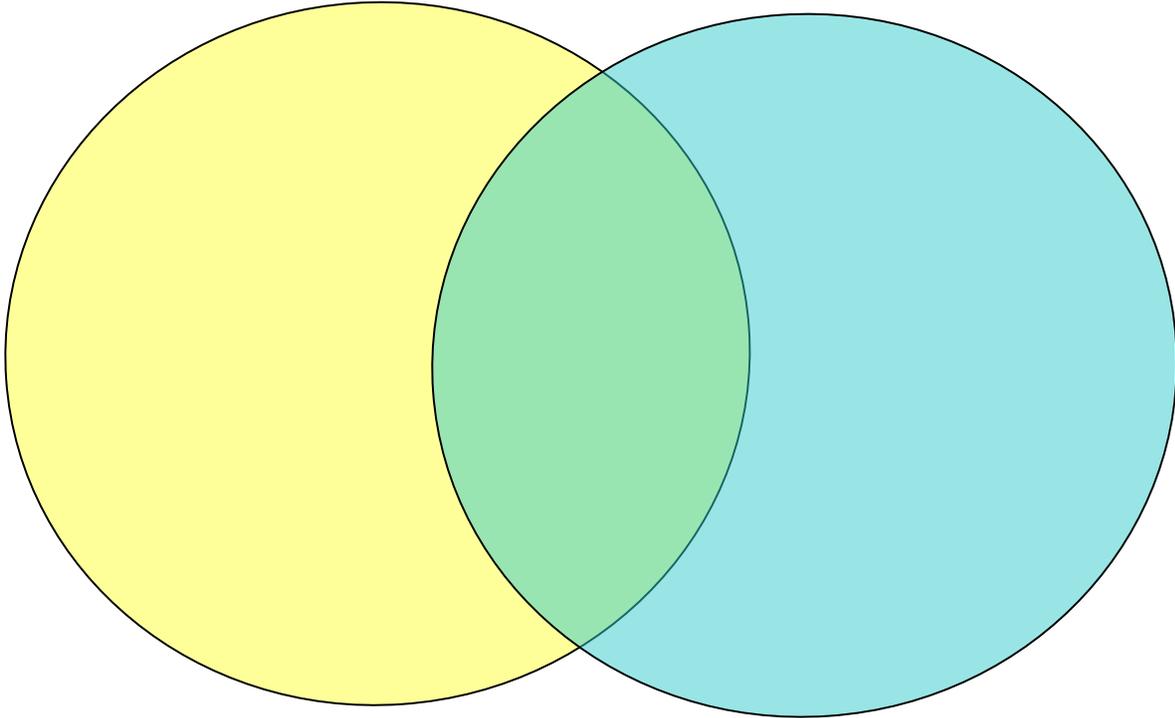
- Day Two: Students will fill out Reading an Image/Photo Analysis Form. Students will complete this form showing what people, objects, buildings, landscape, and activities present in the photograph. Students will also estimate the time period and location of the photograph. The forms(s) will be assessed as a classroom assignment either as formative or summative by the teacher.
- Day Three: Students will write an autobiography of themselves as a miner living back in the Arizona mining days. The autobiography should state where they came from, any family, how they came out west, what they saw as they traveled, what they thought when arriving in Arizona. They should also describe their life as a miner, what do they live in, eat, what is their environment like. The paper should be 2-3 pages long. Included with the paper should be a drawn picture of a representation of them as a miner, they should also include a map of their journey with the paper, showing where they started and the route they took to get where they are presently mining. The teacher will collect and assess formally this assignment for writing and social studies knowledge or students could present their paper orally.
- Day Five: Students will write a 1 page summary or book review (Example found in resources) about *Brightly of the Grand Canyon*. The summary should include an introduction of the book stating the setting and characters. It should also include the main idea or event that happened in the book along with additional characters that were introduced in the book. The final part of the summary should include the conclusion of the book stating what happened in the end and how the mystery was solved; it should also have a personal opinion of the student about the book. The teacher will assess this assignment for understanding the summary process, comprehension of the book, and written fluency. Could also be done as a class. This assessment still can be used if the book is read in small groups or if the class has watched the movie.
- Day Five: Students will fill out a Venn Diagram comparing the differences and similarities of miners or a miner's life from the past and present. The Venn Diagram will be assessed as a classroom assignment and more as a formative assessment to see if there is comprehension of the content and understanding of the use of a Venn Diagram.

Evaluation and Extension

Some extension activities would be to take a field trip to a mineral and mining museum or a mine. Another extension would be to have students research the environmental affects of mining both past and present and create a poster board presentation for the class. Expand on the math concepts and have students create a money system of their own.

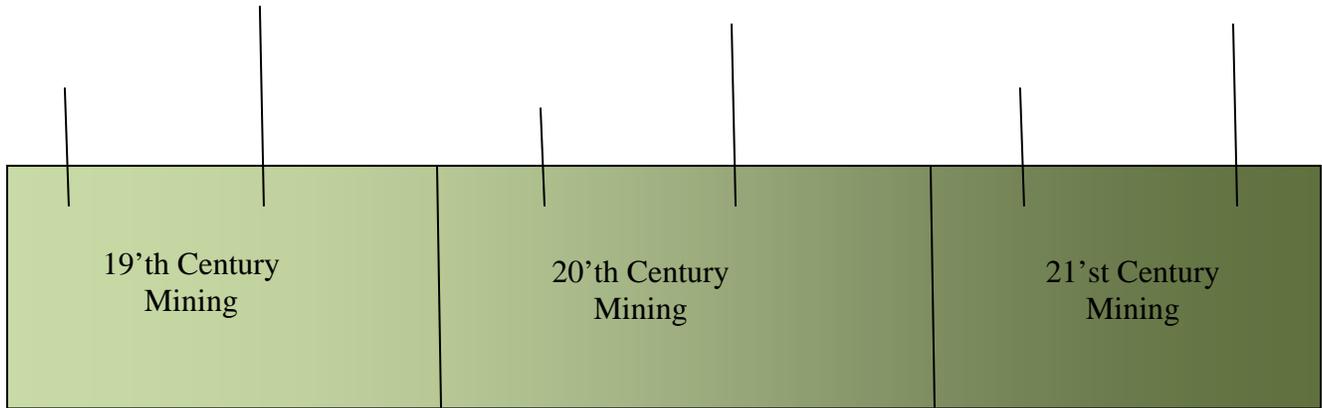
Name: _____

Miners Past and Present



Framework for a Timeline

Have students add dates and events to the top of each that extends from the timeline below. Additional lines can be drawn going down from the timeline if additional space is required.





Name _____ Date _____

Fiction Book Report

Title of book _____

Author _____

Main Character _____

Setting _____

Write four sentences telling what the story is about.

Describe a time when the main character had a problem and needed help.

Write what you thought about the story. Tell what it was about the story that made you like it or dislike it. You may also describe what the story made you think about.

Questionnaire A - Brighty of the Grand Canyon

As you look at the pictures in the book . the cover, and the maps, what do you observe? (use details and complete sentences).

While reading which words give you clues to the setting?

Which character helped you understand what the setting was like and how did that character help in doing so. (Be specific, detailed, and write in complete sentences.)

Date:

Dear Families,

In the next few weeks our class will be studying Arizona miners both past and present. We will begin this exciting journey from Arizona's early mining and we will end as we learn what mining is like now. Students will learn about the life of a miner through reading and experiencing activities about mining history. They will pan for "gold" and learn about the importance of its value in the daily life of a miner through using gold as money at a general store or how to weigh the gold. As we venture on this historical journey there are a few items we may need a long the way. If you could have your student bring in one of the items listed below this would help in our true experience. Thank you for your help in creating a great learning experience for our students.

General Store items needed

Mining Camp items needed

1 bag flour

2 tarps

1 bag sugar

4 pieces of wood

2-4 scoops (like measuring or ice scoops)

4 old blankets

1 bag each of rice, grain, and beans

2 old small cooking pans

Tin pie pans (like from Marie Collander's or foil ones)

Potatoes

Pair of men's shoes or boots (old)

Plain white apron

If you have any other items or ideas you would like to contribute please let me know.

Thank you and let the journey begin!!

Sources Used for Lesson

AMP Digital Sources

Sharlot Hall, James Hall, and others panning for gold on Lynx Creek, Prescott, Arizona, c.1897. Sharlot M. Hall: Arizona's Curator, m101pc, Sharlot Hall Museum Archives, Prescott.

A digital copy of this image is available from the Arizona Memory Project, Sharlot Hall Museum Archives Collection, <http://azmemory.lib.az.us/u/?/shmcurator,40> .

Blue Bird Mining Camp, c. 1890, Bill Castin, Tom Roach, Fritz Verethauler; Sharlot Hall Museum Mining Image Collection, m139p; Sharlot Hall Museum Archives, Prescott.

A digital copy of this image is available from the Arizona Memory Project, Sharlot Hall Museum Archives Collection, <http://azmemory.lib.az.us/u/?/shmining,147> .

Assay Office, Bauman Camp, Yavapai County, AZ, 1904. Sharlot Hall Museum Mining Image Collection; m135pb; Sharlot Hall Museum Archives, Prescott.

A digital copy of this image is available from the Arizona Memory Project, Sharlot Hall Museum Archives Collection, <http://azmemory.lib.az.us/u/?/shmining,184> .

A Placer Miner's Cabin, Lynx Creek, c. 1890; Sharlot Hall Museum Mining Image Collection; pb026a1p34.jpg; Sharlot Hall Museum Archives, Prescott.

A digital copy of this image is available from the Arizona Memory Project, Sharlot Hall Museum Archives Collection, <http://azmemory.lib.az.us/u/?/shmining,520> .

Cook tent and unidentified people, Crown King Mine, Yavapai County, c. 1885; Sharlot Hall Museum Mining Image Collection; m204p; Sharlot Hall Museum Archives, Prescott.

A digital copy of this image is available from the Arizona Memory Project, Sharlot Hall Museum Archives Collection, <http://azmemory.lib.az.us/u/?/shmining,252> .

AMP Audio Sources

Presentation to Prescott Corral of Westerner's by Thomas E. Diehl, executive, Phelps Dodge Corporation, "The Early History of the Ajo Mine", Sept 1, 1967 Length: 51:40; Sharlot Hall Museum Audio Collection, Subcollection: Westerners Collection; 0023a.mp3; Sharlot Hall Museum Archives, Prescott.

An audio copy of this presentation is available from the Arizona Memory Project, Sharlot Hall Museum Archives Collection, <http://azmemory.lib.az.us/u/?shmorahist,2> .

Print / Video Sources

Henry, Marguerite. *Brightly of the Grand Canyon*. New York: Aladdin Paperbacks, Simon and Schuster, 1981. Also, for cost effectiveness ask your school or local library for copies.

For a copy of the video:

<http://www.amazon.com/Brightly-Grand-Canyon-Jiggs-Donkey/dp/B00005Q2YX>

Internet Video Sources

Freeport-McMoRan Copper & Gold Inc. *fcx_overview*. Produced and directed by Freeport-McMoRan Copper & Gold Inc. 12 min. mms://198.176.208.49/fcx_overview. 2007. Video recording.

Classroom Supplies and Maps

Mining Activity Kit Supplies: <http://www.nature-watch.com/cgi-bin/naturewatch/108s.html>

Outline Maps: <http://www.eduplace.com/ss/maps/usa.html>

mkarls1@yahoo.com

Finished product 6/25/08