

# Play Like a Miner Activity Booklet



SANTA CLARA  
COUNTY PARKS

# Welcome to the Play Like a Miner Activity Booklet !

Almaden Quicksilver County Park in San Jose, California is the site of the first mining community in California. For over 135 years mercury mining operations occurred at the Parks' location. Almaden Quicksilver County Park hosts a yearly event, Play Like a Miner at the stately Casa Grande. By participating in fun activities and crafts, visitors learn about the important role New Almaden mercury played in the California Gold Rush, how mercury was processed, and the how the miners lived and worked.

This booklet contains 9 activities that you can complete to learn about mining that took place in the hills of New Almaden many years ago. In addition, you can learn about what life was like as a miner by watching the Play Like a Miner video series which you can find on the Santa Clara County Parks website. If you complete this activity booklet and watch 2 of the Play like a Miner videos you can win a prize. See instructions on the next page.

If you'd like to visit Almaden Quicksilver County Park please visit the Santa Clara County Parks website at [www.parkhere.org](http://www.parkhere.org) to check conditions and trails.



View of Mine Hill

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# WIN A PRIZE!!!

To receive your PLAY LIKE A MINER PRIZE follow these instructions:

1) Complete all 9 activities in the booklet. Check the box in the corner of each activity page as you complete it.

2) Read the agreement on the last page of the booklet and sign your name

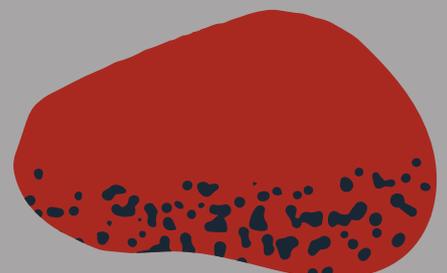
3) Write down at least 2 code words. Find code words in the Play Like a Miner videos:

- Life as a Miner
- Eat Like a Miner
- The GREAT Chocolate Chip Cookie Mining Competition!

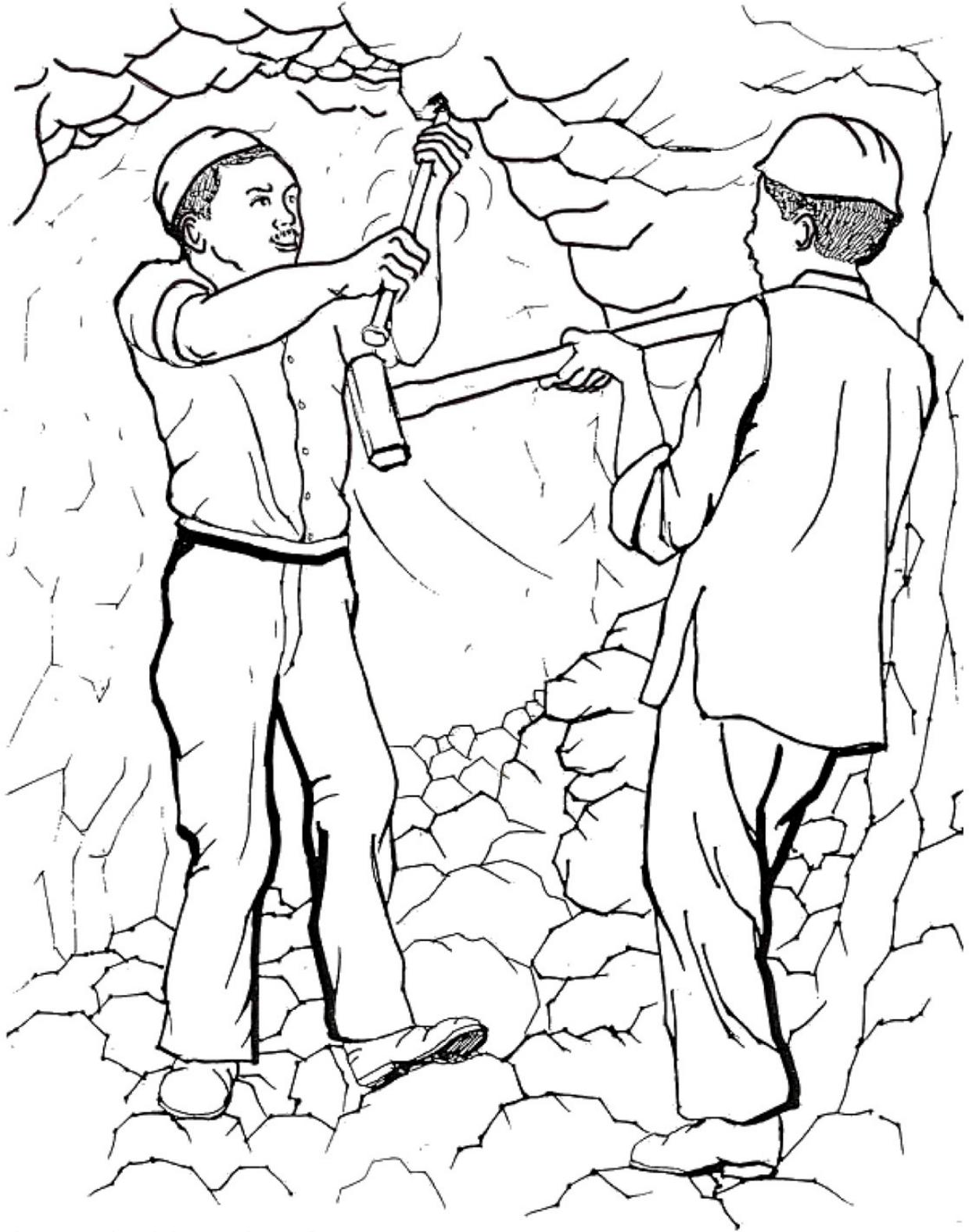
To watch the videos visit Santa Clara County Parks website: [www.parkhere.org](http://www.parkhere.org) and search for On Demand videos

4) Go to the Play Like a Miner Prize Google Form on the Santa Clara County Parks website ([www.parkhere.org](http://www.parkhere.org) - Almaden Quicksilver Mining Museum page) to enter the code words and your information. We'll send your prize in the mail!

If you have any questions please email: [interp@prk.sccgov.org](mailto:interp@prk.sccgov.org)



# Double Jacking Coloring Page



**What is double jacking?**

Double jacking is a mining technique done by two people; one person holds the steel drill and rotates between strikes and the other person hits it with a long handled sledgehammer.

**Watch the [Life of a Miner](#) video to learn why it's called double jacking!**



# A NEW ALMADEN SHORT STORY

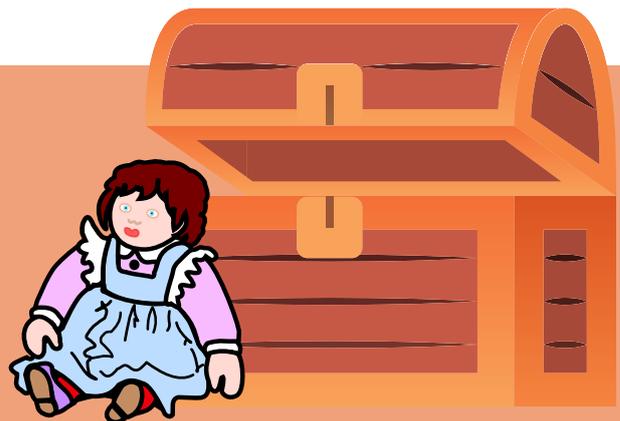


READ THE 2 STORIES TO FILL OUT THE WORD SEARCH

Marie packed her favorite doll into the family trunk and took one last look around her home, she was packing for her family's big move to California. Marie's father found work in a place called New Almaden, a mining community located at the southern end of the San Francisco Bay. Marie's father was a miner, who knew how to find rocks buried deep in the earth that contain minerals, like silver or copper. He used his great strength to remove rocks using a chisel, hammer, and pickaxe. Marie remembered the day her father found his new job in New Almaden. He was so happy he talked to Marie and her mother all night - he didn't stop talking even to drink a glass of water.

Marie's father said that a man named Andres Castillero discovered that the hills in New Almaden contained cinnabar, a red rock that was an important ore of mercury. "What is an ore?" Marie asked. "An ore is a rock that valuable mineral or metal can be extracted from", Marie's father explained. Marie listened to her father but was thinking about how much she would miss her home and all her friends when they moved. She was afraid she wouldn't make new friends in New Almaden.

Marie looked up at her parents with timid eyes. Seeing that Marie was still nervous about moving, her father said in a soft voice, "A lot of the workers at New Almaden will bring their families with them. You will find children your age, and you'll make good friends there." Marie gently smiled. She said goodnight to her parents and went to bed. Marie closed her eyes and wished that she would like New Almaden and make friends there.





# A NEW ALMADEN SHORT STORY

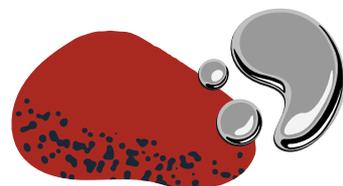


Marsh had been living in New Almaden for about a year. His family was one of the first to move to the mining community of English Camp in New Almaden and there weren't many kids his age around to play with. After doing his morning chores, Marsh walked alone through the hills by his home. He walked to his favorite spot up in an oak tree. He could see the building where his father worked. Marsh's father was a blacksmith who sharpened and repaired the miner's tools. His dad also knew how to fix retorts which are closed ovens used to heat crushed cinnabar to extract mercury.

Ever since Marsh and his family moved to New Almaden he became curious about rocks and metals. He had a collection of rocks and small pieces of metals that he kept hidden under his bed. His favorite rocks were serpentine, the green and blue rocks that many California mountains are made of. Marsh wanted some mercury for his collection because it moves so fast that people call it quicksilver. Marsh had seen workers pour 76 lbs. of mercury into heavy iron containers called flasks. He wanted to ask the workers if he could take a closer look but he knew they were too busy.

Marsh continued to sit on the hill underneath the oak tree and looked past the large furnaces being built to heat large amounts of cinnabar and process it into mercury. He knew water would cool the mercury gas to create liquid mercury. From his viewpoint, Marsh looked towards the entrance of Indian Cave where rocks were being carried out in ore carts. Marsh had heard from one of the oldest residents at New Almaden that Indian Cave is a sacred place for the Muwekma **Ohlone**, the first inhabitants of the area.

When it was time to go back home Marsh stood up and turned to the entrance of the mining community. Each day he hoped that a new family was moving to New Almaden so he could have friends to play with. As he looked he saw a wagon. He couldn't see the people in the wagon but saw that there was a family trunk stored towards the back. Marsh walked back home looking for interesting pieces of rocks. He wished that soon he would have a friend to explore the New Almaden hills.





# NEW ALMADEN WORD SEARCH

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

ALMADEN

CINNABAR

FLASK

FURNACES

OHLONE

QUICKSILVER

SERPENTINE

WATER

ORE

MINERAL

CASTILLERO

MINER

MERCURY

RETORT

ROCK



# NEW ALMADEN WORD BANK

Use the word bank to fill in the blanks

QUICKSILVER

FURNACES

OHLONE

ALMADEN

CINNABAR

FLASK

WATER

SERPENTINE

PASTIES

\_\_\_\_\_ means "living silver"

\_\_\_\_\_ mercury's ore

\_\_\_\_\_ means "the mine" in Arabic

\_\_\_\_\_ cooled mercury gases into a liquid

\_\_\_\_\_ Native people who used cinnabar to make paint

\_\_\_\_\_ used to heat cinnabar into mercury and sulfur gases

\_\_\_\_\_ container that holds 76 pounds of mercury

\_\_\_\_\_ a common lunch meal eaten by miners

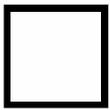
\_\_\_\_\_ California's state rock



## BONUS QUESTION:

\_\_\_\_\_ was the year mercury was discovered at New Almaden

(Watch Life of a Miner Video to find answer)

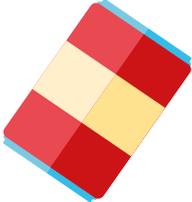
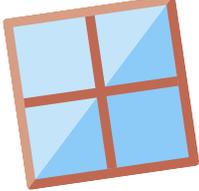
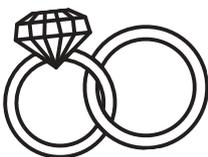
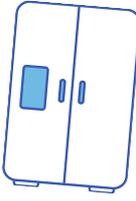
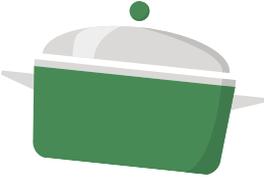


# MINERAL SCAVENGER HUNT

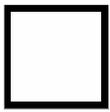
## What are minerals?

Minerals are formed naturally in the earth. Minerals are inorganic substances, meaning that they do not come from any plants or animals. Animals and plants need minerals to live; for example, humans need the mineral calcium to develop healthy bones and teeth. Minerals are found in many common items at home.

Many items around your house contain minerals. Find as many as you can and circle them.

Aluminium	Copper	Quartz	Silver	Zinc
 <b>Foil</b>	 <b>Vacuum</b>	 <b>Clock</b>	 <b>Silverware</b>	 <b>Hairdryer</b>
 <b>Beverage Can</b>	 <b>Telephone</b>	 <b>Window</b>	 <b>Musical Instrument</b>	 <b>Sunblock</b>
 <b>Deodorant</b>	 <b>Dishwasher</b>	 <b>Computer</b>	 <b>Jewelry</b>	 <b>Fertilizer</b>
 <b>Makeup</b>	 <b>Refrigerator</b>	 <b>Mirror</b>	 <b>Tooth Filling</b>	 <b>Penny</b>
 <b>Cooking Pot</b>	 <b>Radio</b>	 <b>Watch</b>	 <b>Silver Coins</b>	 <b>Shampoo</b>

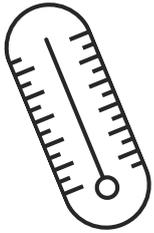




# MINDFUL OF MERCURY

Mercury was once used in many household items. Overtime the harmful effects of mercury in the environment were understood and its use declined. In this activity, cross off the items that once contained mercury

Thermometers



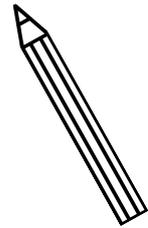
Clothing



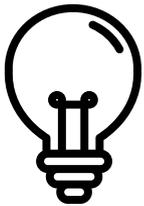
Televisions



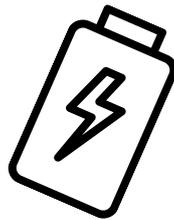
Pencils



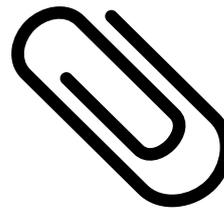
Light bulbs



Batteries



Paperclips



Car parts



Plates



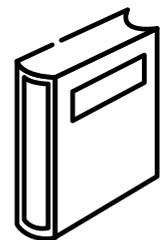
Couches



Makeup



Books



Glasses



Bicycles



Tooth Fillings



Mirrors



(Watch Life of a Miner Video for help)



# □ MAKE A MINING DIORAMA



## Materials:

- 1) Scissors
- 2) Glue
- 3) Cardboard box
- 4) Colored markers or pencils or paint

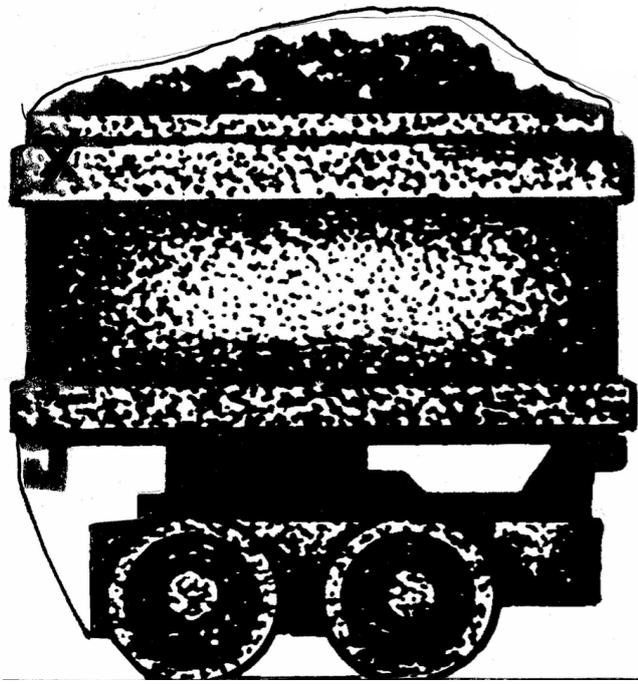
## Directions:

- 1) Cut out the paper ore cart parts on the next page.
- 2) For piece 3, the ore cart bucket, cut along the solid 'cut' lines. Stop at the red dots. Fold on the dotted lines. Glue the shorter folded ends to the longer folded sides to form the bucket.
- 3) Glue pieces 1 and 2 to the longer sides of the cart's bucket. Make sure the bucket is open on the top. For more stability you can glue the ore cart pieces 1 & 2 on card board then glue them to the bucket.
- 4) Using a cardboard box, create a diorama of a miner's life. Use the miner cutouts on the next page. Make an outdoor scene or a scene inside a tunnel. Make paper rocks or find rocks around your house.
- 5) Be creative!

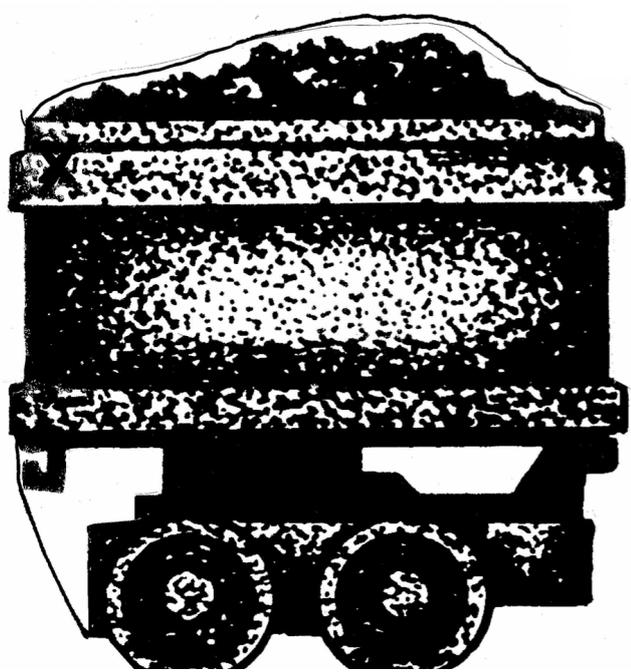
Ore carts carried **red cinnabar** on narrow tracks through mine tunnels to the reduction plant.



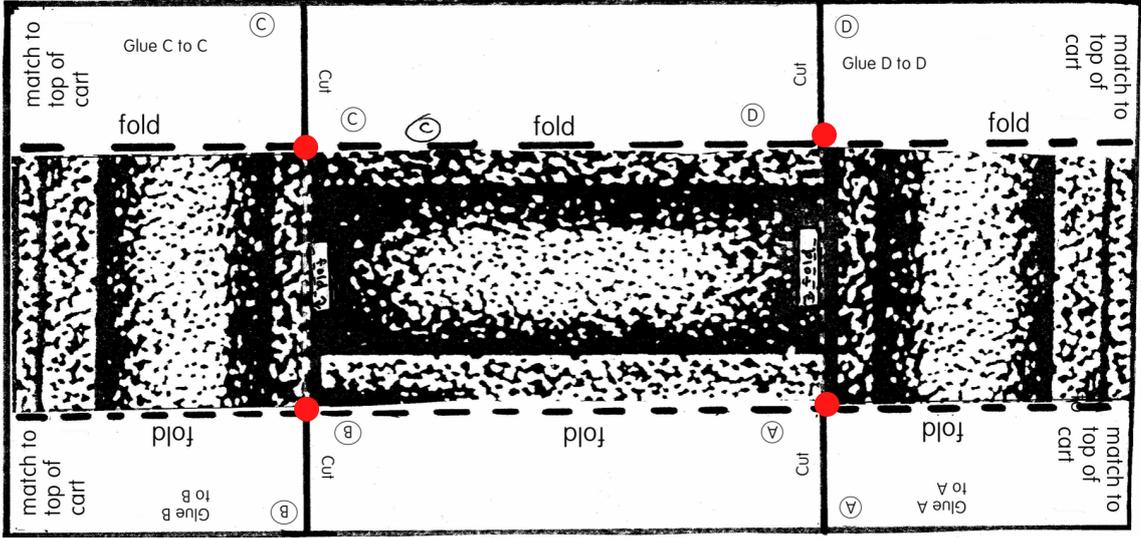
1



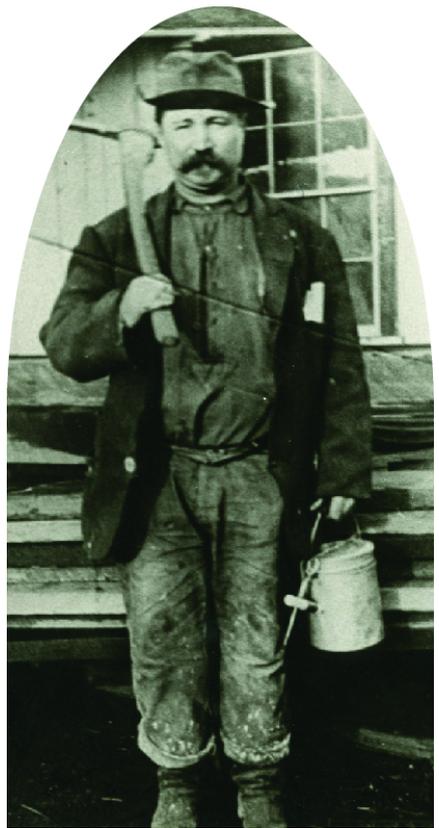
2



3

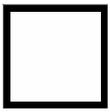


Spanish Town miner Patricio Avila



Cornish miner cousin Jack





# CHOCOLATE CHIP COOKIE MINING ACTIVITY

Mining is a risky business. Mine managers spend large amounts of money to establish and run mining sites. They rely on miners to find valuable rocks that they can sell for profit. To be successful, mine managers want profits that are greater than the cost of running their mine.

**Directions:** In this activity you will act as a mine manager and miner. The goal of this activity is to mine for chocolate chips and make more money than you started with. You have \$20 to buy land and tools to mine for chocolate chips. You'll have 5 minutes to dig for chocolate chips in your cookie using only your tools, you can not use your fingers to touch the cookie when you are mining. At the end you will calculate if you mined enough chocolate chips to make a profit.

Look for the GREAT Chocolate Chip Cooking Mining Competition  
on the Santa Clara County Parks Website!

## Materials:

- 1 - chocolate chip cookie
- 1 - pen or pencil
- 1 - timer
- toothpicks and paperclips

## 1. STARTING TOTAL = \$20

Draw a circle around your cookie on the the graph paper on the next page. Count the number of squares in your circle, partial squares count as 1 square.

Total number of squares = \_\_

## 2. COST FOR LAND = \_\_ (total number of squares) x \$1 = \$\_\_

## 3. YOUR NEW TOTAL = \$20 (starting money) - \$\_\_ (cost of land) = \$\_\_

## 4. COST FOR TOOLS:

Toothpick = \$2

Paperclip = \$3

You can purchase as many tools as you can afford

Your total for tools is:

Toothpick = \$2 x \_ = \$\_\_

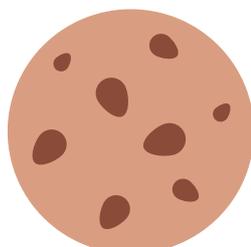
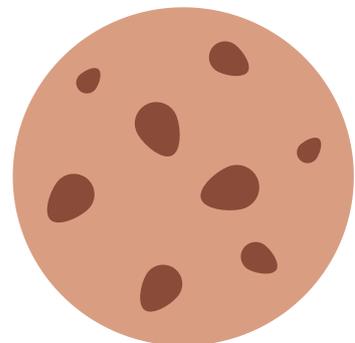
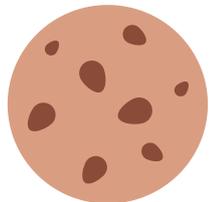
Paperclip = \$3 x \_ = \$\_\_

Total Cost of Tools = \$\_\_

## 5. YOUR NEW TOTAL = \$\_\_ (total from #3) - \$\_\_ (total from #4) = \$\_\_

6. Time yourself for 5 minutes. Get as many chocolate chips from the cookie using your tools only.

Continue on the next page...



# CHOCOLATE CHIP COOKIE MINING ACTIVITY

7. NUMBER OF CHOCOLATE CHIPS MINED = \_\_

8. TOTAL profit from mining = \_\_ (number of chocolate chips) x \$3 = \$\_\_

9. YOUR NEW TOTAL = \$\_\_ (total from #5) + \$\_\_ (total from #8) = \$\_\_

10. Make a flat pile of cookie crumbs in the circle you drew on the graph paper. Any cookie pieces that are outside the circle cost \$1 for reclamation costs. Reclamation costs is the amount of money needed to restore land that has been mined to a natural or usable state.

11. RECLAMATION COSTS TOTAL = \_\_ (number of crumbs outside circle) x \$1\_\_ = \$\_\_

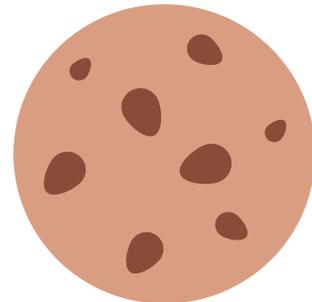
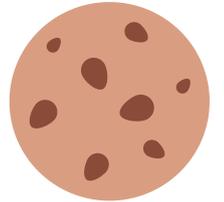
12. YOUR FINAL TOTAL = \$\_\_ (total from #9) - \$\_\_ (total from #11) = \$\_\_.

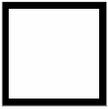
Did you make a profit? Is your final total amount more than \$20?

Circle YES or NO

What would you have done differently to have more money at the end?


Graph paper: Draw a circle around your cookie and count the number of squares in the circle. Partial squares count as 1 square.





# PASTY RECIPE



The Cornish pasty is a baked pastry that is traditionally filled with meat and vegetables and sealed with a crimped crust. The pasty was originally eaten by the rich and upper class of Britain in the 13th century. In the 17th and 18th Centuries, the pasty was adopted by tin miners in Cornwall as a filling meal that was eaten while working in dark and damp mines without a knife, fork, or plate

When Cornwall immigrants came to New Almaden to mine for cinnabar, they brought their mining skills and this hearty meal along with them. The recipe below is inspired by the Cornish pasty. You are welcome and encouraged to use different ingredients to fit your dietary needs and to make your pasty more tasty for you.

Watch the Eat Like a Miner video on the Santa Clara Parks Website to see a cooking demonstration.

## Prep Time

30 mins

## Cook Time

1 hr

## Chill Time

2 hrs

## Total Time

3 hrs 30 mins

Note: You can cut 2 hours from preparation time by using store bought pastry dough.

## Ingredients

### For the Pastry:

4 cups all purpose flour or bread flour

3 ounces of cold lard

2 ounces of diced cold butter

1-1/2 teaspoons salt

2/3 cup ice water

**Substitute more butter for lard**

### For the Filling:

12 ounces beef skirt steak, cubed or choose chicken or use only vegetables.

1 cup Yukon Gold potatoes, diced

1/2 cup diced onion

1/3 cup diced turnip

1-1/2 teaspoons salt

2 tablespoons butter, cut into 8 thin slices

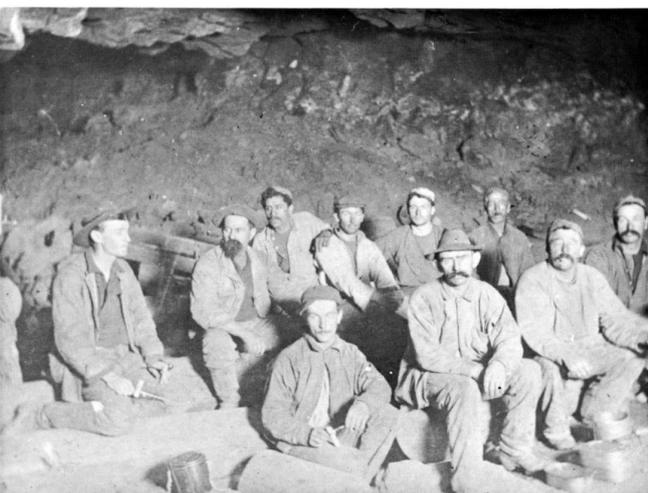
1 large egg, beaten

1 teaspoon water

### Optional seasoning:

1 teaspoon ground black pepper

1 pinch cayenne pepper



Miners taking their lunch



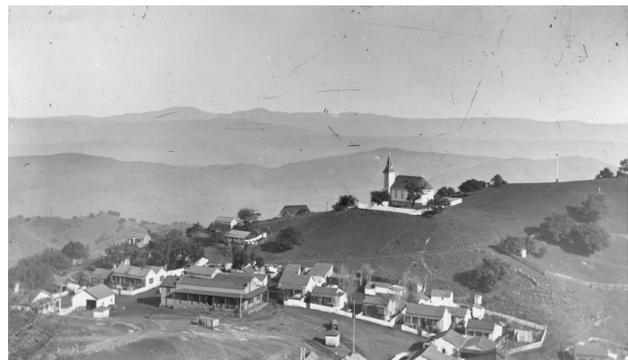
# PASTY RECIPE



## Directions

- 1) Cut flour, lard, cold butter, and salt together in a bowl with a pastry blender or knife until the mixture resembles coarse crumbs. Make a well in the center and pour in ice water. Mix with a fork until mixture begins to come together; use hands to form dough into a ball.
- 2) Turn dough out onto a lightly floured surface and knead until dough is smooth and forms into a firm ball. Wrap dough in plastic wrap and refrigerated until chilled, at least 2 hours.
- 3) Preheat oven to 350 degrees F. Line baking sheet with parchment paper or a silicone baking mat.
- 4) Stir steak, potatoes, onion, turnip, salt, pepper, and cayenne pepper together in a bowl until evenly-combined.
- 5) Beat egg and 1 teaspoon water together in a small bowl.
- 6) Divide dough into 4 equal rounds and roll each round out to about 1/8-inch thickness and 8-inches in diameter. Brush each dough round with the egg mixture.
- 7) Place 1/4 of the steak mixture slightly off-center on each round of dough, and top mixture with 2 slices of butter. Fold dough over steak filling to form a half moon shape and press edges together to seal.
- 8) Transfer pasties to the prepared baking sheet and crimp edges with a fork or crimp by pushing down the edge of the pasty with your finger and twisting the pastry over on itself. Poke fork 1 time into the top center of each pasty and brush tops with egg mixture.
- 9) Bake in preheated oven until browned and bubbly, about 1 hour. Cool for 5 - 10 minutes and enjoy!

Send pictures of your pasties  
to [interp@prk.sccgov.org](mailto:interp@prk.sccgov.org)



English Camp settlement, where many Cornish families lived



# CONGRATULATIONS!!!



## YOU FINISHED THE PLAY LIKE A MINER ACTIVITY BOOKLET

Please sign your name on the line below and write down at least 2 code words from the Play Like a Miner videos

I, \_\_\_\_\_

completed the Play Like a Miner Activity Booklet created by Santa Clara County Parks.

The two code words I found in the video series are:

1)

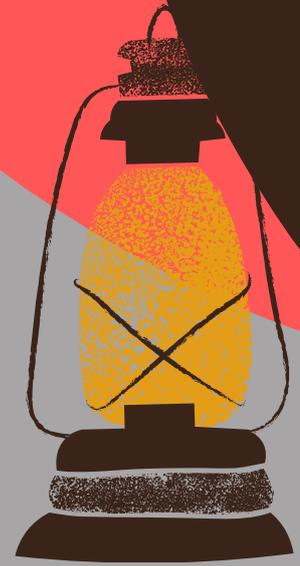
2)

Bonus code word

3)

To fill in your code words go to [www.parkhere.org](http://www.parkhere.org). Search for Almaden Quicksilver Mining Museum and look for the Play Like a Miner Code Word submission form





# SANTA CLARA COUNTY PARKS

