

## Chocolate Chip Mining

Adapted from [http://education.cmewa.com/images/3\\_ChocChipMining.pdf](http://education.cmewa.com/images/3_ChocChipMining.pdf)

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Grade Level: 7<sup>th</sup> and/or 8<sup>th</sup> grade

Time allotted to unit: 1, 45 min period

### Goals and Objectives

Goals:

- Understand the concept of economics of mining.
- Create a mining company.
- Safeguard the environment.

Objectives: SWBAT:

- Make economic decisions.
- Identify themselves with miners.
- Recognize processes required to find minerals and rocks.
- Develop the mine.
- Calculate profit/loss.

Materials:

- Chop Chip Mining sheet
- Cookie Mining sheet
- 2 toothpicks (flat and round)
- Play money (\$25M for each student)
- Grid paper (1 sheet per student)
- Chocolate chip cookies (1 per student)
- Paper clips

NJCCCS: 4.1.7.B1, 4.5.7.A

Activities and Procedures:

1. Each player starts with \$25M of play money.
2. Each player receives a Cookie Mining sheet and a sheet of grid paper.
3. Each player must buy his/her 'mining property' which is a chocolate chip cookie. Only one 'mining property' per player. At least 2 types of cookies should be for sale; one cheaper one with fewer chocolate chips and another more pricey cookie with more chocolate chips.
4. After buying the cookie, the player places it on the grid paper and, using a pencil, traces the outline of the cookie.
5. Each player must buy his/her mining equipment. More than one piece of equipment may be purchased. Equipment may not be shared between players.  
Mining equipment for sale is;

Flat toothpick \$2.00 each  
Round toothpick \$4.00 each  
Paper clips \$6.00 each

6. Mining costs \$1.00 per minute.
7. Sale of a chocolate chip mined from a cookie brings \$1.00 (broken choc chips can be combined to make one whole chip).
8. After the cookie has been mined, the cookie fragments and crumbs should be placed back into the circled area on the grid paper. This can be accomplished using the mining tools – No fingers or hands allowed!
9. Reclamation costs are \$1.00 per square over the original count. (Any piece of cookie outside of original circle counts as reclamation).
10. Complete Cookie Mining sheet.

Accommodations:

For SLD explain each activity step by step, Heterogeneous group assignments.  
For ELL give some vocabulary the day before so they can prepare with another student or look up in dictionary. Or specifically translate some words for them.

Assessment:

Walk around the room; collect worksheets; classroom discussion.

## COOKIE MINING RULES

1. Players cannot use their fingers to hold the cookie. The only things that can touch the cookie are the mining tools and the paper on which the cookie is sitting.
2. A player can purchase as many mining tools as desired: the tools can be different types.
3. If the mining tools break, they are no longer usable and a new tool must be purchased.
4. The players that make money by the end of the game win.

## Price List

Premier Choc Chip Cookie	\$ 7.00
Standard Choc Chip Cookie	\$ 2.00
Flat Toothpick	\$ 2.00
Round Toothpick	\$ 4.00
Paper Clip	\$ 6.00
Mining Cost	\$ 1.00 per minute
Reclamation Fine	\$ 1.00 per square
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Sale of Choc Chip	\$ 1.00 per whole chip

### COOKIE MINING COSTSHEET

1. Type of cookie \_\_\_\_\_ Price of cookie \$ \_\_\_\_\_
  2. Equipment used  
Flat Toothpick \_\_\_\_\_ x \$2M = \$ \_\_\_\_\_  
Round Toothpick \_\_\_\_\_ x \$4M = \$ \_\_\_\_\_  
Paper Clip \_\_\_\_\_ x \$6M = \$ \_\_\_\_\_  
Equipment cost \$ \_\_\_\_\_
  3. Mining \_\_\_\_\_ minutes x \$1M  
Cost of mining \$ \_\_\_\_\_
  4. **TOTAL COST OF MINING** (price of cookie + equipment cost + cost of mining)  
\$ \_\_\_\_\_
  5. **TOTAL VALUE OF CHIPS** (Number of chips removed \_\_\_\_\_ x \$1M)  
\$ \_\_\_\_\_
  6. **RECLAMATION FINE** (Reclamation: \_\_\_\_\_ squares x \$1M)  
\$ \_\_\_\_\_
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### How much did I make?

INITIAL BUDGET	\$25M	
TOTAL VALUE OF CHIPS	+ \$ _____	
	= \$ _____	(Total 1)
TOTAL COST OF MINING	- \$ _____	
	= \$ _____	(Total 2)
RECLAMATION FINE	- \$ _____	
	= \$ _____	(Total 3)
		<b>PROFIT (+) OR LOSS (-)</b>
Total 3	\$ _____	
INITIAL BUDGET	- \$35M	
	= \$ _____	Profit (+) or Loss (-)

# CHOC CHIP MINING



This area is your mining lease. Make sure you keep all of your mining activities inside this space, otherwise you will receive a fine!

# CME

NAME YOUR MINE: \_\_\_\_\_

How many choc chips did you extract? \_\_\_\_\_