Cookie Mining . . . *Rebaked*

Materials needed:
- 3 types of chocolate chip cookies – *Mothers*, or another low-priced store brand (few chips). *Chips Ahoy* (more chips), and *Chips Deluxe* (most chips)
- Flat toothpicks
- Round toothpicks
- Paper clips
- Chocolate frosting
- Shredded coconut
- Green food coloring
- Colored flower cake/cookie sprinkles
- Chocolate cake/cookie sprinkles
- *Cookie Mining* Sheet
- *Cookie Mining* Grid
- *Cookie Mining* Money

Preparation:
Frost the top of each cookie with chocolate frosting to represent topsoil. Sprinkle each cookie with shredded coconut dyed green to represent vegetation, chocolate sprinkles to represent rocks and boulders and colored flower sprinkles to represent wildflowers. *Be sure to keep the cookies separated by brand.*

1) Explain the object of cookie mining to make a profit. Each student buys property (a cookie), equipment (toothpicks or paper clips), pays for the mining operation and reclamation. In return, the students receive money for the ore mined (chocolate chips).

2) Each player stars with $19 worth of Cookie Mining Money, a Cookie Mining Sheet and a sheet of the grid paper.

3) Each student must buy his/her own "mining property" or cookie. Write the cookie prices on the board:

Store brand chocolate chip - $3.00
Chips Ahoy - $5.00
Chips Deluxe - $7.00

4) After the cookies are bought, have the student give their "mine" a name and record it, along with the price of their cookie, on the sheet.

5) Have them place their cookie on the grid paper and trace the outline of the cookie. They should then count each square that fall inside the circle, counting partial squares as a full square, and record that number on the sheet.

6) Students must now buy mining equipment. They can purchase more than one piece or type of equipment. If a mining tool breaks, it is no longer usable and a new tool must be purchased. Write the equipment prices on the board:

Flat toothpick - $2.00 each
Round toothpick - $4.00 each
Paper clip - $6.00 each

Have them record the price of mining equipment on their sheets.

7) Students can now prepare their mining property by removing the top soil, rocks and vegetation from the cookie using their mining tools. This material should be stockpiled on a corner of the graph paper for use in reclamation.

8) Now they can mine the chips out of the cookies. No student can use his fingers to hold a cookie. The only things that can touch the cookie are the mining tools and the paper the cookie is sitting on. The maximum mining time is 5 minutes, at a cost of $1.00 per minute. Students can finish mining before the 5 minutes are up and record the time spent mining on the sheet.

9) Students receive $2.00 for each chocolate chip mined. Broken chips can be combined to form one whole chip.

10) Students must now reclaim their cookie mine by placing the remaining cookie parts back into the original circle drawn on the graph paper. Any squares within the original circle that are no longer covered are assessed a $1.00 fee each. Each student must also purchase additional topsoil, rocks and vegetation at a cost of $1.00

11) The player with the most money at the end of the game wins, and everyone gets to eat the remainder of their cookie!

Discussion points:
Did it matter which cookie you bought? Which cookies were harder or easier to mine, and why? Which cookies were more expensive?

What about the mining equipment? Which tools, or combination of tools were most effective? Did certain tools break?

When you tried to reclaim your cookie, what happened? Was it difficult to return this cookie back to the same exact size that is was before mining the chips?

Cookie Mining . . . *Rebaked*
Mining Economics

1. Name of Cookie Mine _____

2. Price of Cookie $ _____
   (Mother's $3.00, Chips Ahoy $5.00, Chips Deluxe $7.00)

3. Size of Cookie _____ Squares Covered

4. Equipment:

   Flat toothpick _____ x $2.00 = _____

   Round toothpick _____ x $4.00 = _____

   Paper clip _____ x $6.00 = _____

   Total Equipment Cost $ _____

5. Mining: _____ minutes x $1.00
   Cost of removing chips $ _____

6. Chip removal:
   Number of chips _____ x $2.00

   Value of chips $ _____

7. Reclamation: _____ squares x $1.00 = _____
   Grass seed, flowers and rocks = $1.00

   Total Reclamation Cost $ _____

How much did I make?

PROFIT		COST	
6. Chip Removal	$	2. Price of Cookie	$
		4. Equipment	$
		5. Mining	$
		7. Reclamation	$
TOTAL SALES	$	TOTAL COSTS	$

Value of chips (total sales) $ _____
Total cost of mining (total costs) minus $ _____

Profit/Loss **$** _____