Return To Middle School Lesson Plans

Title: Economics
Level: Middle School
Time: 45 minutes
KERA Goals: 2.2; 2.30; 2.33; 2.38; 2.6
Objective:
Students will simulate operating a coal mine and calculating the expense of mining operations.

Activity 1: Cookie Mining

Materials:
3 types of chocolate chip cookies - Mothers, or another low-priced store brand (fewer chips, Chips Ahoy (more chips), and Chips Deluxe (most chips)
Flat toothpicks
Round toothpicks
Paper clips
Cookie Mining Sheet
Cookie Mining Grid
Cookie Mining Money

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 starts 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 students 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 falls 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 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. 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.

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

9. After the cookie has been mined, students should use the tools to "reclaim" the property, placing it back into the circled area. No fingers or hands allowed. Draw another circle around the reclaimed cookies, and assess students $1.00 for each square over the original count.

10. 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 it was before mining the chips?

Mining Economics: Cookie Mining Worksheet

1. Name of cookie mine _____

2. Price of cookie _____
(Mothers $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. Total Cost of Mining = _____

7. Chip removal:
Number of chips _____ x $2.00 = _____

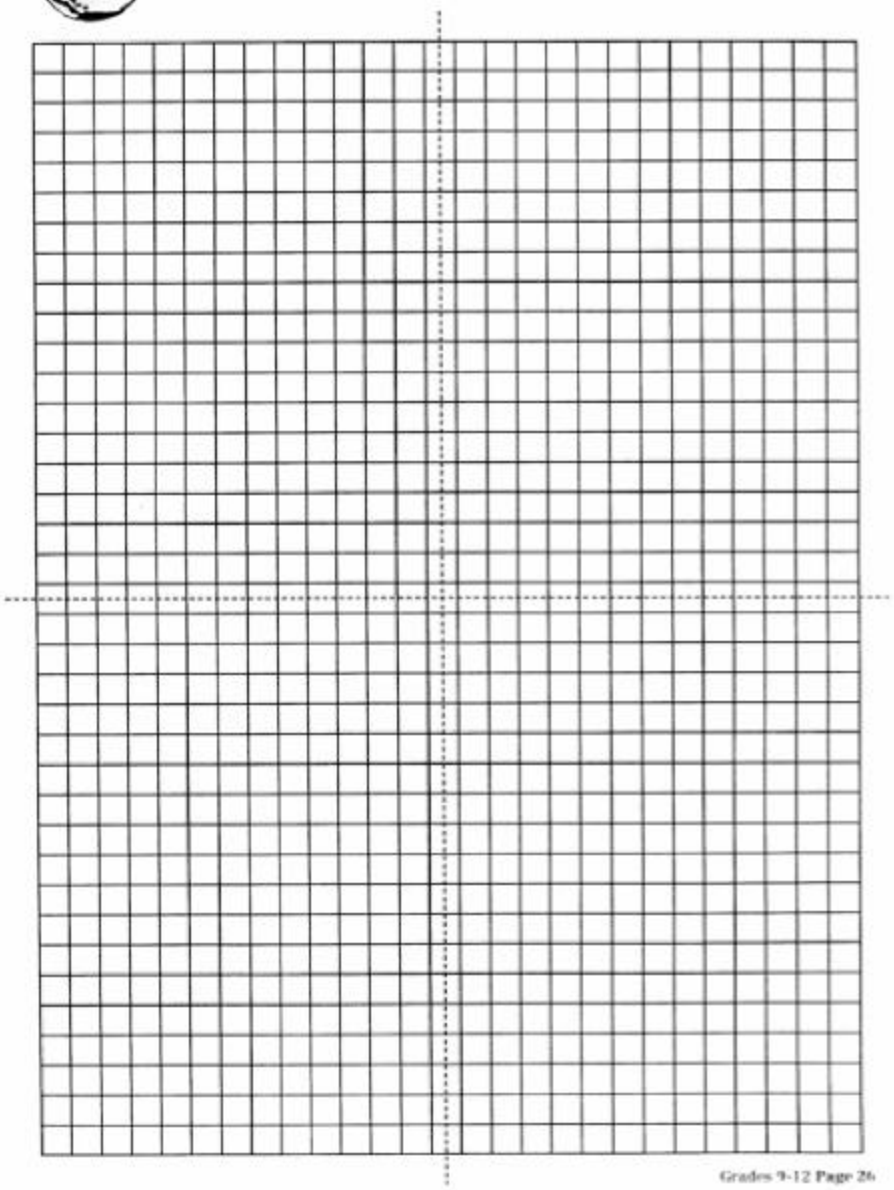
How much did I make?

Value of chips..... _____
Total cost of mining..... _____
Profit/Loss..... _____

8. Reclamation: _____ squares x $1.00 = _____

Cookie Mining

Cut this grid paper in four parts




$1 Cookie Mining Money $1
COMMON GROUND
$ One Dollar $
COMMON GROUND
$1 Cookie Mining Money $1
$1 Cookie Mining Money $1
COMMON GROUND
$ One Dollar $
COMMON GROUND
$1 Cookie Mining Money $1
$1 Cookie Mining Money $1
COMMON GROUND
$ One Dollar $
COMMON GROUND
$1 Cookie Mining Money $1
$1 Cookie Mining Money $1
COMMON GROUND
$ One Dollar $
COMMON GROUND
$1 Cookie Mining Money $1

Provided by Caterpillar, Inc.