

Cookie Mining

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|---|---------|---------|---------|---------|---------|---------|
| Grades 4-5 NMA Activities, Nevada State Science Education Standard Correlation. Referencing Science Standards 2005 http://www.doe.nv.gov/standards/standscience.html | | | | | | |
| | N.5.A.3 | N.5.A.6 | N.5.A.7 | N.5.B.2 | P.5.A.3 | E.5.C.3 |
| Chocolate Chip Cookie Mining | X | X | X | X | X | X |

Purpose:

The purpose of this game is to give the player an introduction to the economics of mining. This is accomplished through the player buying "property," purchasing the "mining equipment," paying for the "mining operation," and finally paying for the "reclamation." In return the player receives money for the "ore mined." The objective of the game is to make as much money as possible.

Instructions:

1. Each player starts with \$19 of Cookie Mining Money.
2. Each play receives a Cookie Mining Sheet and a sheet of grid paper.
3. Each player must buy his/her own "mining property" or cookie. Only one "mine property" per player. Cookies for sale are:
 - Mother's Chocolate Chip \$3.00
 - Chips Ahoy \$5.00
 - Chips Deluxe \$7.00
4. After the cookie is bought, the player places the cookie on the grid paper and using a pencil traces the outline of the cookie. The player must then count each square that falls inside the circle.
NOTE: *Count partial squares as a full square.*
5. Each player must buy his/her own 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
 - Round toothpick \$4.00
 - Paper clip \$6.00
6. Mining costs are \$1.00 per minute.
7. Sale of chocolate chips brings \$2.00 per chip (broken chips can be combined to make 1 whole chip).
8. After the cookie has been "mined" the cookie should be placed back into the circled area on the grid paper. This can only be accomplished using the mining tools - no fingers or hands allowed.
9. **Optional:** Reclamation costs are \$1.00 per square over original count.

Rules:

10. No player can use their fingers to hold the cookie. The only things that can touch the cookie are the mining tools and the paper the cookie is sitting on.
11. Players should be allowed a maximum of five minutes to "mine" their chocolate chip cookie. Players that finish mining before the five minutes are used up should only credit the time spent "mining".

12. A player can purchase as many mining tools as the player desires and the tools can be of different types.
13. If the mining tools break, they are no longer usable and a new tool must be purchased.
14. The player with the most money at the end of the game wins.
15. All players win at the end of the game because they get to eat the remainder of their cookie.

Review:

The game provided the player an opportunity to make the most money that the player could with the resources provided. Decisions were made by the player to determine which property to buy and which piece or pieces of mining equipment should be purchased.

The player should have learned a simplified flow of an operating mine. Also, the player should have learned something about the difficulty of reclamation especially in returning the cookie back to the exact size that it was before "mining" started.

Cookie Mining Sheet

1. Name of cookie

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. **TOTAL COST OF MINING**

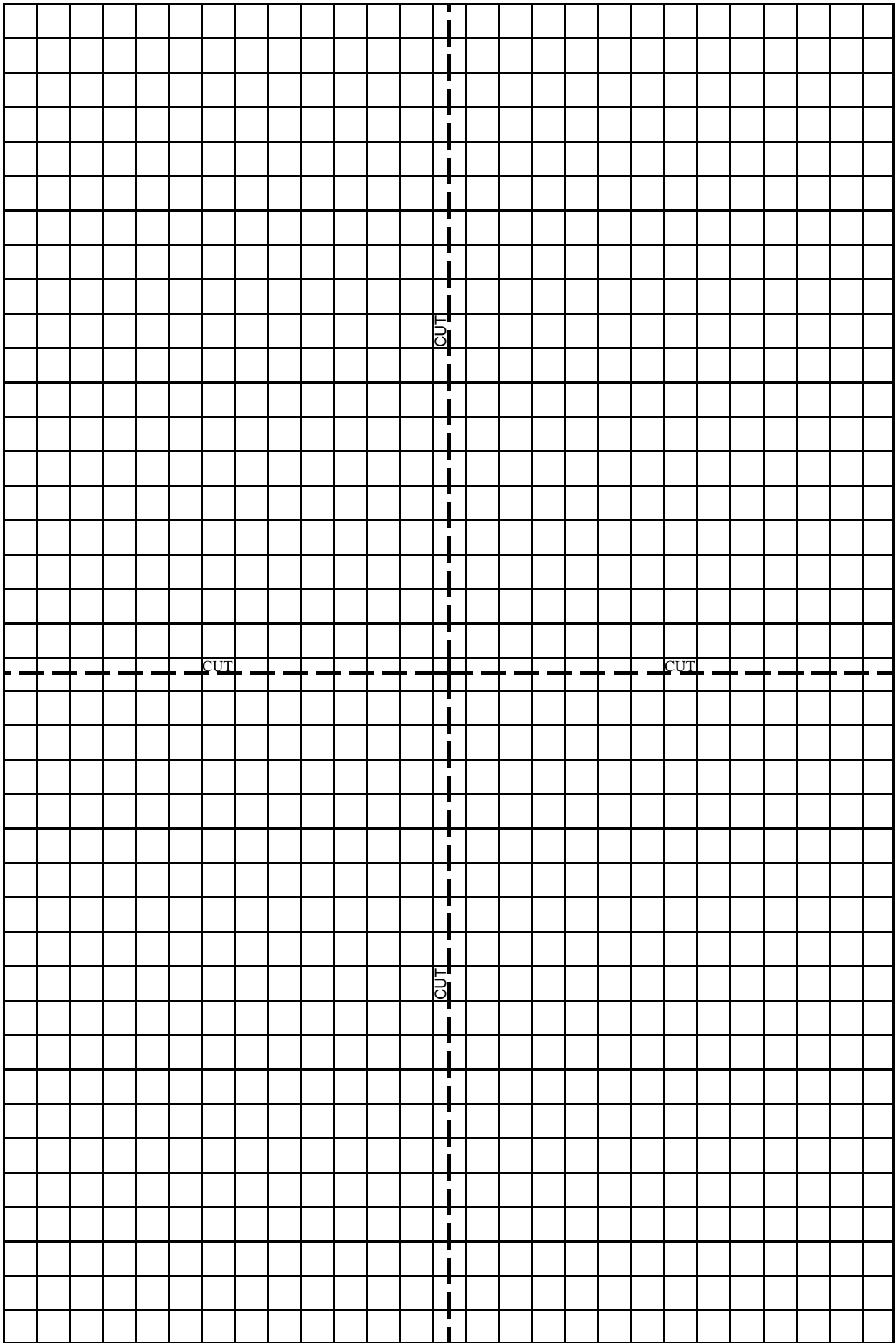
7. Chip removal:

Number of chips X \$2.00

VALUE OF CHIPS

| How Much Did I Make? | |
|--------------------------------|---|
| Value of Chips | <input style="width: 100%; height: 20px;" type="text"/> |
| Total Cost of Mining. (±) | <input style="width: 100%; height: 20px;" type="text"/> |
| PROFIT/LOSS | <input style="width: 100%; height: 20px;" type="text"/> |

8. Reclamation squares X \$1.00



| | | |
|----------------------------|----------------------------|----------------------------|
| \$1 | \$1 | \$1 |
| COOKIE MINING MONEY | COOKIE MINING MONEY | COOKIE MINING MONEY |
| \$1 | \$1 | \$1 |
| \$5 | \$5 | \$1 |
| COOKIE MINING MONEY | COOKIE MINING MONEY | COOKIE MINING MONEY |
| \$5 | \$5 | \$1 |
| \$10 | \$10 | \$1 |
| COOKIE MINING MONEY | COOKIE MINING MONEY | COOKIE MINING MONEY |
| \$10 | \$10 | \$1 |

Cookie Mining Sheet - Advanced

1. Type of Deposit (Brand of Cookie)

2. Mineral Right Acquisition Costs (Price of Cookie)
(Mother's \$3.00, Chips Ahoy \$5.00, Chips Deluxe \$7.00)

3. Size of Deposit (cookie) = Number of Squares Covered

4. Equipment Purchase:

Flat toothpick X \$50,000 = _____

Round toothpick X \$75,000 = _____

Paper clip X \$100,000 = _____

TOTAL EQUIPMENT PURCHASE COST

5. Ore Removal Costs: minutes X \$10,000 =

6. Processing Costs: number of chips X \$1,500 =

7. **TOTAL COST OF MINING** (add #2, #4, #5, and #6)

8. Amount of Ore Recovered (full chips only):

Number of chips X 100 ozs. X \$450

9. Overburden, Dump Size = Number of Squares Covered

10. Reclamation Costs: Dump or Overburden

Toss \$1,200 X squares covered
 or =

Eat \$1,500 X squares covered

11. PROFIT OR LOSS:

| | | | |
|-----------------------------------|---|------------|---|
| Total Cost of Mining (#7) | - | (subtract) | <input style="width: 100%; height: 20px;" type="text"/> |
| Amount of Ore Recovered (#8) | + | (add) | <input style="width: 100%; height: 20px;" type="text"/> |
| Subtotal = | | | <input style="width: 100%; height: 20px;" type="text"/> |
| Reclamation Costs (#10) | - | (subtract) | <input style="width: 100%; height: 20px;" type="text"/> |
| PROFIT/LOSS (Grand Total) = | | | <input style="width: 100%; height: 20px;" type="text"/> |