COOKIE MINING ACTIVITY

PURPOSE

1. to provide an introduction to the economics of mining
2. to maximize profit and minimize the impact on the environment

PROCEDURE

- Outline the cookie. Determine surface area of the cookie.
- Select one type of mining equipment and technique/approach and determine amount of profit/loss.
- Select another type of mining equipment/technique/cookie and determine amount of profit/loss.
- Interpret data and answer questions.

*Prices:

Cookies for sale:

Mother's CC	= $3.00
Chip's Ahoy	= $5.00
Mother's Double Chip	= $6.00
Keebler Chips Deluxe	= $7.00
Chunky Chips Ahoy	= $10.00

Mining Equipment for sale:

Flat toothpick	= $2.00
Round Toothpick	= $5.00
Paper Clip	= $6.00

Mining Costs:	$1.00 per minute
Sifter Cost	=$2.00
Water Cost	=$0.50/250ml
Reclamation Costs:	$0.50 per cm^2
Maximum sale of CC (ores)	= $2.00 per chip (must only be the CC, no surrounding cookies)

Data

1. Name of mining company:
2. Type of cookie:
3. Surface area of cookie
4. Chart

Item	Cost	Income	Balance
A. Price of Cookie			
B. Mining Equipment Used			
C. Mining Time Cost			
Subtotal			
D. Sale of Ore			
Subtotal 2			
E. Reclamation cost			
Total			

Value of chips – cost of mining = profit/loss

(Turn Over to Other Side)

DATA ANALYSIS

1. Create a graph to compare the different costs and income earned.

CONCLUSION

1. Explain why today's society is having difficulty/will have difficulty in terms of ensuring an adequate supply of the minerals/rocks for the future. Use the concept of depletion time in your answer.
2. **Describe** the techniques used in mining for both trials. In your description, list the different techniques you practiced, how they were similar to the mining methods mentioned in class, the effectiveness of the different techniques, and any side effects of the techniques (i.e. subsidence, air pollution, water pollution, or soil erosion).
3. How did the two trials differ from each other? Explain. Which method was more profitable? Which method was least invasive and minimized the amount of reclamation?
4. **Describe** CERCLA and RCRA legislation. How do they apply to this activity?
5. List 5 common minerals/rocks that are mined and the uses.
6. **Describe** 3 solutions to ensuring society has availability to mineral/rock resources with minimizing the effect on the environment. This means list a method and discuss the benefits and drawbacks. Possible solutions:
    a. Increase regulation of mining companies with incentives
    b. Force the mining companies to pay for hazardous wastes, etc.
    c. Government controlled mining…where the mining companies can only rent the land from the government.

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