

Chocolate Chip Mine

Introduction: As the owner of a cookie chip mine, you will face the costs of buying equipment, operating your mine, and cleaning up the mined area after the chips are removed. *Note: All prices refer to play money*

RULES:

- You **MUST** buy your own equipment (NO SHARING)
- Paper clips **MAY** be straightened.
- Mining and environmental clean up **MUST** be done with the equipment only (**NO FINGERS ALLOWED**).
- *If equipment breaks, it **MUST** be replaced.*
- YOU may hold the cookie in place with one pinky finger **ONLY**.
- If you finish mining all the chips from your cookie before time is up, you will only pay for the minutes you spent mining.

Preparation:

- Give each student the equipment they ask for: paper clip or toothpick. Write this quantity down in the proper place on the lab sheet.
- Give each student 1 cookie. Place the cookie in the center on the graph paper, hold the cookie down with your hand and trace an out line around the cookie onto the graph paper.
- Before you begin mining the cookie. REMEMBER that you must keep the removed chips on the graph paper, as well as any cookie that you break apart.
- **EVERY** square that contains a cookie crumb, or chip **MUST** be reclaimed at the end of the mining project.
- **The instructor will tell you when to begin. Start mining the cookie.** When you are done mining, tell the instructor so that you can record your time.
- **Draw another circle around the areas where then cookie crumbs and chips are located. This is the reclamation area.**

Equipment Costs:

Toothpicks	_____ (quantity)	@ \$10.00 ea	=	_____
Broken Toothpick	_____ (quantity)	@ \$ 5.00 ea	=	_____
Paper Clips	_____ (quantity)	@ \$15.00 ea	=	_____
Broken Paper Clip	_____ (quantity)	@ \$10.00 ea	=	_____

Mine Purchase: 1 (quantity) @ \$30.00 ea = \$30.00

Operating Cost: _____ (minutes) @ \$ 5.00 per min = _____
This is how long it takes to remove ALL the chips from the cookie. Round minutes up based on 0:30 seconds

Reclamation Cost: _____ (# of squares) @ \$ 5.00 per square = _____
This number of contaminated squares both inside and outside of the original mine area. If any cookie crumbs falls on a square (this includes the chips mined) you MUST count that squares.

NUMBER OF CHIPS YOU MINED: _____ **TOTAL COST:** _____
Add the above column together

CONCLUSION:

A) **To determine the COST per CHIP:**

a. TOTAL COST: _____ ÷ the number of chips you mined _____ = **Cost per Chip** _____

B) **To determine the ASKING PRICE per CHIP:**

a. Add an **amount for PROFIT:** _____ + Cost per Chip _____ = **Asking Price per Chip** _____
HINT: Amount for PROFIT is how much money you wish to make. Do not add too much money. You want to stay competitive with your classmates.

C) **To determine your TOTAL PROFIT:**

a. Take the Asking Price per CHIP _____ x Total Number of CHIPS you mined _____ = **Total Value of CHIPS** _____

b. NOW take that number (Total Value of CHIPS) _____ (minus) TOTAL COST _____ = **TOTAL PROFIT:** _____

