Name: Date: pd:

Unit: Minerals & Rocks

Mining for Chocolate Chips

Purpose: Mining companies frequently make the news because of the destruction they cause to the environment and unsafe working conditions provided to their workers. However, because of the constant demand for minerals and metals, mining will continue to occur. In this activity, you will investigate some of the problems that miners face in today's world.

Materials:

- Chocolate Chip Cookie
- Graph Paper
- Toothpick

Procedure:

- Keep your cookie on the graph paper at all times
- Trace your cookie on the graph paper
- You will have one minute to remove as many chocolate chips as possible
- Your cookie can not fall apart during the mining process
- Partial chocolate chips may be counted as long the piece is half a chip or bigger
- Your teacher will tell you when to begin and end
- On the graph paper, shade in the boxes where you removed a chocolate chip

Questions:

1. How many chocolate chips were you able to recover? (You may enjoy your cookie now!)
2. What happened to your cookie during the mining process?
3. Calculate the area of your cookie on your graph paper. Count the number of squares that make up the radius. (Remember: $A=\pi r^2$)
4. How many squares are shaded in?
5. Calculate the percentage of the cookie's area that was affected by this mining process.
6. How is this situation similar to actual mining?
7. Is it possible to mine material and NOT damage the environment?
8. Why do governments impose restrictions on mining companies?