

Cookie Mining Lab

The purpose of the activity is to provide an introduction to the economics of mining. This is accomplished through purchasing land areas and mining equipment, as well as paying for mining operations and the reclamation of the land. In return, the "miners" receive money for the ore mined. One of the goals is to make as much money as possible.

The general definition of ore is a naturally occurring material from which minerals of economic value can be extracted at a profit. In this exercise, the chocolate chip is the ore. The worthless rock that is associated with the ore and must be separated from the ore is called the gangue. The rest of the cookie is the gangue.

INSTRUCTIONS

1. Each miner will buy a cookie mine. Each miner starts out with \$19.00 to spend. The mines and prices will vary. Record your cookie mine and the price on your data sheet.
 - Chips Ahoy = \$3.00
 - Soft Chocolate Chip Deluxe = \$5.00
 - Extra Chunky Chocolate Chip = \$7.00
2. Following the purchase of a cookie (land area), the miner will then place the cookie on the graph paper and trace the outline of the cookie. The miner then counts each square that falls in the circle. Each partial square counts as a full square. Record the number on your data sheet. Miners will attempt to reclaim the land to the original shape after the ore (chips) have been removed.
3. Each miner will then rent equipment to remove the valuable ore. If any of the equipment breaks during mining, the miner must return the broken equipment and purchase a replacement. Keep up with the number of tools used and prices on your data sheet. **NO MINER MAY USE THEIR FINGERS TO HOLD THE COOKIE! THE ONLY ITEMS THAT MAY TOUCH THE COOKIE ARE THE MINING TOOLS AND THE PAPER THE COOKIE IS SITTING ON!**
 - Flat toothpick = \$2.00
 - Round toothpick = \$4.00
 - Paper clip = \$6.00
4. Once the miner has started to mine their cookie, they must keep track of how many minutes it takes for them to mine out all the chips. The cost of mining is \$1.00 per minute. Record the time and price on your data sheet.
5. When the cookie has been mined, count the chips removed. The remaining cookie (the gangue), must be placed back into the circled area on the graph paper. **THIS CAN ONLY BE DONE USING THE MINING TOOLS! NO FINGERS OR HANDS SHOULD TOUCH THE COOKIE!**
6. Count up the number of squares covered up by the rest of the gangue. If the gangue covers more squares than the original cookie, a reclamation cost of \$1.00 per extra square will be assessed. Record the number and price on your data sheet.
7. Using your data sheet, calculate the money spent versus the money earned to see if money was gained or lost. Once this is completed, answer the questions on a separate sheet of paper.