



Cookie Mining

Background

Operating a mine is a complex process. It involves removing ore from rocks that exist underground and, in the case of metal mines, extracting the base or precious metals they contain for later use, in manufacturing. Mines must limit their impacts to the environment and reclaim lands as they cease operating. Mines can be profitable if the value of the minerals they produce exceed the costs of operating them.



Purpose:

To introduce basic cost management related to mining, including the cost of reclamation, or restoring land to its natural state after a mine has ceased operating.

Family members work as a Team to purchase a mine property and mining equipment, and to operate a mine. The Team receives revenue (money) for the ore that is mined.

Materials:

- Chocolate chip cookie (\$3); Jumbo chip cookie (\$5)
- Play money (\$25 per Team)
- Grid Paper
- Toothpicks (flat and round)
- Paper clips

Directions:

1. Name your mine (cookie). Place it on the grid paper. Remove the chocolate chips it contains using the tools that you purchase. Complete the cost sheet.

Special Instructions:

1. Select and purchase your mining property (cookie). Understand that the regular chocolate chip cookie is less costly (has fewer and smaller chocolate chips); while the jumbo chocolate chip cookie is costlier (larger chips). Record your cost on the sheet.
2. After choosing your mining property, place it on the grid paper and using a pencil, trace the outline of the cookie. This circle is your mine footprint.
3. Purchase your mining equipment. More than one piece of equipment may be purchased. Record your costs.

Mining equipment for sale:
Flat toothpick \$2 each
Round toothpick \$4 each
Jumbo metal paperclip \$6 each
4. Mine your cookie for no more than 5 minutes. During this time try to remove all of the ore it contains. The cost of mining is \$1 per minute. Record this cost.
5. The mine earns \$1 for every chocolate chip that is mined. Broken chips can be combined to make a whole chip.
6. When the mining process is complete, any remaining crumbs must be placed back into the footprint, the circled area, on the grid paper. You must use tools to complete this task.
7. Deduct \$1 for each grid square that is filled with crumbs that are returned to the mine footprint. This is the cost of reclaiming the mine site.
8. Discuss mining with your family. What did they learn about the mining process? Did they find anything surprising? Were they aware of reclamation?



