

Name _____ Period _____ Date _____

SCIENCE Fossil Fuel Extraction

You and your partner will be provided with a cookie. This cookie represents a land area that may contain deposits of fossil fuels. These deposits are represented by chocolate pieces in the cookie. You will also be provided with a toothpick, which represents the mining and drilling equipment used in obtaining the fossil fuel. Imagine that the top surface of the original cookie is an area of land on which various kinds of plants and animals live.

Problem/Purpose:

Can the chips (representing fossil fuels) be removed from a cookie with as little damage to the cookie (representing land, the environment) as possible?

Hypothesis:

It is predicted that we can remove as much of the fossil fuel as possible with as little damage to the environment as possible (If we are careful and remove the fossil fuels in a safe way, then little damage will be done to the environment).

Experiment:

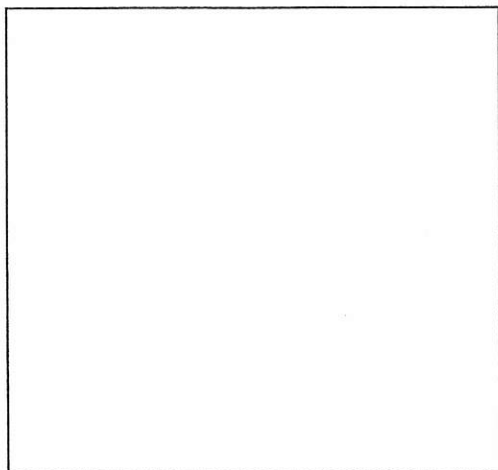
Materials: cookie, paper plate or paper towel, toothpick

Procedure:

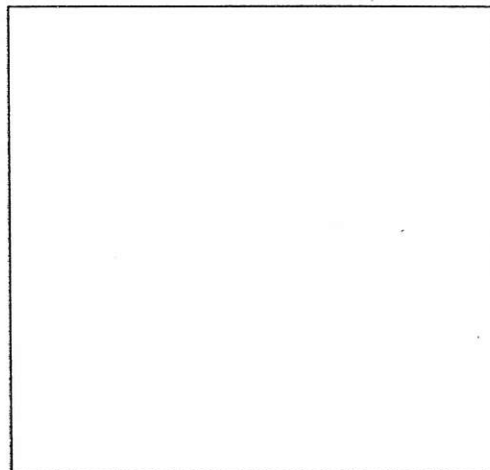
1. In the space below, sketch the cookie surface before "mining".
2. Mine your cookie using the toothpick as your drill. Carefully set aside your extracted fuel to be counted at the end.
3. In the space below, sketch the cookie surface after "mining".
4. Record the amount of fossil fuels you were able to obtain and the amount of "waste" you generated. (**Estimate:** about _____% of the original cookie.)

Data Tables:

Before Mining



After Mining



3. What would happen to the plants and animals that lived on the land that was mined in this way?

4. What could be done to reduce the damage done to the environment by such mining?

5. If we use less energy, we need less fossil fuels. If we need less fossil fuel, we do not need to mine as much land. What can you do to reduce energy use?

Energy Obtained from Mining (Total # of Chips collected)	Energy Used to Mine the Land (refer to chart on board)	Energy Remaining for use in homes (column 1- column 2)

Energy Chart

Discussions Questions

1. What happened to the "land" when you mined for fossil fuels?

2. Were any crumbs made during the process? What is erosion? ~~Refer to the~~
~~text on erosion and explain the effect it has on the land. Page 216, Chapter 8,~~
~~Activity~~
