Return To Middle School Lesson Plans

Title: Minerals Make Rocks
Level: Middle School
Time: 45 minutes
KERA Goals: 2.2; 2.35; 2.4

Objective:

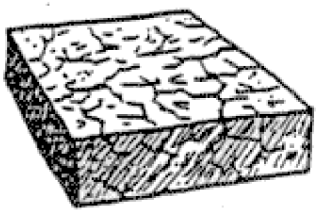
Students will understand that all rocks are made from one or more minerals (or plant material, as in the case of coal).

Background Information:

Minerals are different from rocks.
Rocks are made up of one or more minerals.
Minerals are natural and not man-made.
They are solid material.
A mineral is the same all the way through
About 2,000 different kinds of minerals are known, of these only 200 are commonly mined.
Minerals are *inorganic* because they are not made by or from plants or animals.
Some rocks like coal are organic because they were formed from plants.

Granite
qartz and feldspar with small amounts of mica, and hornblende

Sandstone
qartz with cementing material of silica, calcite, hematite, or limonite



Marble
calcite and/or dolomite

Coal
compressed organic material

Materials:

edible play dough (see recipe)
cake decorating sprinkles (various colors)
blender (optional)
measuring cups

mixing bowls and spoons
rocks (with bright mineral mixes)

Recipe: edible play dough

2 cups flour
4 cups oatmeal
1 cup water
1 cup white corn syrup
1 cup peanut butter
1 ¼cup nonfat powdered milk
1 ¼cup confectioner's sugar

1. Blend flour and oatmeal together for about 30 seconds.
2. Combine all ingredients in a bowl and mix completely, then knead well.
3. Add more flour if the mixture is too sticky.

Activity: Mock Rocks

1. Discuss the difference between a rock and a mineral. A mineral is just one substance, while a rock is a mixture of two or more minerals.

2. Look at the rocks and determine how many different minerals are in them. You can do this by counting the different colored minerals in the rock.

3. Put the students into groups to make their "mock rocks." Give each group part of the edible play dough to use as their rock.

4. Using the various colored cake sprinkles to simulate the minerals in the rock, have the students encrust the play dough with sprinkles in the same proportion as the rocks (they can knead them in).

5. Eat!

Teacher Hint:

1. Have the students determine the proportions of minerals in the rock. Then see if they can mix the same proportions of "minerals" in their mock rock.
2. Assign the student groups the various tasks of making the edible play dough.

Provided by The Society for Mining, Metallurgy, and Exploration, Inc.