

## 2nd Grade - Act. 20: How to Make a Rock

### Summary

The activities in this lesson will introduce students to the concepts of igneous, sedimentary, and metamorphic.

### Time Frame

3 class periods of 30 minutes each

### Materials

- small hot plate or stove
- saucepan
- old crayons
- tub of cold water
- pie tin
- bread
- peanut butter
- jelly
- baggie
- saltwater taffy

### Intended Learning Outcomes

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1. Demonstrate a positive learning attitude.

#### Process Skills

Investigation, segmentation and blending, symbolization

### Instructional Procedures

#### Invitation to Learn

Ask students to explain how rocks are made.

#### Instructional Procedures

This lesson has three phases: igneous, sedimentary, and metamorphic. It is recommended that 2-3 lesson periods be used. The focus on this activity should be on the three concepts and not the terms. Igneous: Explain that when a rock gets really hot, it melts. It turns to a liquid called magma which is found deep inside the earth. When it cools, it forms an igneous rock. Melt crayons in saucepan. This will represent molten rock. Pour some of the crayon into the tub of cool water. Note how fast it hardens into a rock. Pour the rest into the pie tin. Let cool. Later, compare the one that rapidly cooled and the one that cooled slowly.

Sedimentary: Talk about sizes of rocks. Some are very small, but can be compressed into a new layer of rock. Tell the students this can sometimes look like a sandwich of rock. Make a peanut butter and jelly sandwich. You may add other things such as M&Ms or marshmallows to represent a layer of gravel. After adding the top layer of bread, put it into a baggie and pile several heavy books, such as dictionaries or encyclopedias, on top. Emphasize to students that mere layers are not enough to make a sedimentary rock. Those layers must be under extreme pressure for a long time.

Metamorphic: Ask students if they have ever helped their mom make cookies. What happened after they baked them? Did they change? Some rocks are like cookies. When an igneous or sedimentary rock is under extreme heat and pressure, they change just like cookies. Hand out 2 or 3 pieces of taffy. Have students press the taffy in their hands, working it much like modeling clay or Playdough.

Tell students that the heat and pressure of their hands is changing these 3 taffies into one big piece of taffy.

### Extensions

An alternative method of demonstrating igneous rocks:

Materials: magic shell, ice water

Procedures: Give each child a cup of ice water. Squirt a little magic shell into each cup. Wait while chocolate hardens. Students can now eat their “chocolate rock.” This will allow students to eat each kind of “rock.”

Family Connections

Take a walk with family and look for rocks. Try to identify them.

### Assessment Plan

Have students make a flipbook. On the cover, label a type of rock. Inside, draw a picture and write one or two sentences explaining how each type of rock is made.

### Authors

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