

**Project FOCUS
Best Lessons
THIRD GRADE**

Title of Lesson: A Sweet Rock Cycle

Theme: Earth/Space Science

Unit Number: **Unit Title:** Rocks, Minerals, Soil and Fossils

Performance Standard(s) Covered (enter code):

S3E1. Students will investigate the physical attributes of rocks and soils.

a. Explain the difference between a rock and a mineral.

d. Determine how water and wind can change rocks and soil over time using observation and research.

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Rock
Mineral
Igneous rock
Metamorphic rock
Sedimentary rock
Rock cycle
Weathering
Magma

Learning Activity (Description in Steps)

Abstract (limit 100 characters):

Students will learn about the 3 types of rocks and how they are formed.

Details:

1. Emphasize the three different types of rocks: Metamorphic, igneous, and sedimentary. Explain that rocks are composed of different minerals.
2. Using the HEAT and PRESSURE created by their hands, the students will melt the chips into a "metamorphic rock."
3. One at a time, each student will remove their rock (by carefully turning the bag inside out) and place it between the two sheets of wax paper. By using PRESSURE this student will flatten his or her rock, then uncover it and pass it to the next student. The next student will place his or her rock

on top of the others and repeat the flattening process, etc. until all of the students in the group have had a turn. The layers of rock will have formed a "sedimentary rock".

4. The students will be instructed to cut or tear their rock into small pieces. They will be placed inside a clean zippered bag and sealed. "Weathering" has just occurred.

5. Each group will place their bag into a cup of hot water. Let it stand for a few minutes. The heat of the water is melting their creation like magma melts rock.

6. Once their rock is melted, remove the bag from the hot water. Let it sit for a few minutes. Once it has hardened, they can remove their "igneous rock" from the water.

Materials Needed (Type and Quantity):

- Zippered sandwich bags containing 15 chocolate chops, 15 peanut butter chips, and 15 white chocolate chips - 1 per student
- Strips of wax paper - 2 per group
- Plastic knife - 1 per group
- Disposable cups - 2 per group
- Hot and cold water
- Ice cubes
- Paper towels
- Optional: scissors

Notes and Tips (suggested changes, alternative methods, cautions):

- Tip: Students should record their observations at the end of each step.
- Tip: Do not let the students eat the chips that they are working with. Instead, offer to reward them with a handful of their choice after the experiment if they are well-behaved.
- Caution: Inquire about peanut allergies before bringing peanut butter chips into the classroom!
- Optional: Discuss fossil formation during the course of this experiment.

Sources/References:

1) Modified from a lesson plan by Debbie Bassett. Originally submitted by Sara J. Hague, edited by Jessica Valle (2010)

2)

3)