Project FOCUS
Best Lessons
THIRD GRADE

Title of Lesson: Soil and Erosion
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.

c. Use observation to compare the similarities and differences of texture, particle size, and color in top soils (such as clay, loam or potting soil, and sand).

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):

Soil
Loam
Clay
Sand
Humus
Erosion

Learning Activity (Description in Steps)

Abstract (limit 100 characters): Students will learn about different types of soil and the basic process of erosion.

Details:

Part I

Divide students into small groups. Have them observe the different types of soil and write down what they see, feel, and smell. Ask them to describe the color, texture, and size of particles. You may provide the students with a chart to record their observations. Discuss observations as a class.

Part II

To prepare, pack both cake pans full of soil. You may use the soil from the Part I observation, or you may use other soil. Make sure that the soil is the same in both containers.

On your own or with your class, cover one of the soil pans with gravel, plants, twigs, etc. (Pack it in tightly for this to work well.)

Now have the students predict what would happen to the just-soil pan when it rains. To demonstrate, prop the pan of soil at a slight angle (you may use a text book or similar item) and gently drizzle water from your cup or bottle onto the top of the "hillside" you have created. Ask the students to record their observations.

Next, repeat this process with the pan of soil that has gravel, plants, twigs, etc. protecting it. First, ask the students to predict what will happen. Then, try to hold the pan at the same angle and use the same amount of water. Ask the students to record their observations. This pan should have much less erosion that the just-soil pan.

Materials Needed (Type and Quantity):

Part I

- Different types of soil (potting soil, sand, clay)

- Small containers to hold the soil (tupperware, etc.) - 1 per soil type, per group

Part II

- Water bottle or paper cup with hole in it

- 2 cake pans (or similar large, watertight containers)

- Rocks, sticks, plants, etc.

- Optional - newspaper or drop cloth to protect from accidental dirt spills

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

- Tip: For added fun, you may havea little city of monopoly houses, small action figures, etc. at the bottom of the "hillside". Ask the students why the people who live in the "village"would want to protect the hill from erosion.

- Tip: You may relate the two activities by asking the students, which type of soil do you think would erode the most/least and why?

- Caution: If you are going to let the students pour the water (or if you are not a particularly precise person), you may want to do this outside!

Sources/References:

1) Originally submitted by Carrie Nalisnick, edited by Jessica Valle (2010)

2)

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