IS IT JUST DIRT?

SUBJECTS: Science, Social Studies

STUDENT SKILL: (Science) The student will classify a set of simple objects and employ simple equipment and tools, such as magnifiers, to gather data. (SS) The student will identify the three basic needs of all people: food, clothing, shelter.

OBJECTIVE: The student will examine soil from his or her own backyard and learn that food, clothing and shelter come from the soil.

BACKGROUND

Without the soil we would have no food, no clothing, and no shelter. From gardens and farms we get vegetables and the grains we use to make cereal and bread. Fruit grows on trees and vines that grow in the soil. Trees also give us lumber. The wood can also be used to make paper, paints and other products.

The food we feed our animals comes from the soil, too. Cows eat grass, hay, silage and grain to produce milk and meat. Plants grow in the soil. Besides food, animals also supply us with leather and with by-products used in paints, camera film, pet food, rubber, crayons, lotions, soaps, leather, medicines and much more.

Soils come in a wonderful range of hues, from black to yellow to deep red. Oklahoma is well known for the fields of red soil you can see as you drive along the highways during the late summer or early fall. The red color is caused by the large proportion of iron in the soil. If you have ever seen a rusty iron pipe you can see why iron makes the soil red. Red is not the only color found in Oklahoma soil. Our state has more different varieties of soil than just about any area this size on earth. Oklahoma’s state soil is port silt loam.

American Indians take advantage of the many different hues of the soil to make ceremonial paints they use on their faces and other parts of their bodies. Indians in the southwest look for particular kinds of clay for making their pots. Different hues of clay are used to create a variety of beautiful colors. Some are used as paint to make patterns on the pots. In the past, the Plains Indians used different colors of soil for painting their buckskin robes and tipis. Sometimes crushed berries, flowers and

MATERIALS

- soil samples from various locations
- plastic bags
- magnifying glasses
- clear containers
- glue
- heavy paper
other materials from nature were mixed with the mud to create different colors.

ACTIVITY
1. Ask several students to scoop a half-cup of soil from where they live and bring it to school in plastic bags.
2. Place all the bags on a table, and compare the colors and textures of the soils, first just by looking at it in the plastic bags.
3. Now have students feel the soils, and compare the different textures. Wet a small amount of soil and have students work it between their fingers. They should feel for grittiness (sand), smoothness (silt) and slickness (clay).
4. Have students look at the soil through a microscope or magnifying glass.
5. Put handfuls of different kinds of soil in separate clear containers. Fill the containers with water, and shake until the water is cloudy. Set the containers aside, and compare them after an hour or two. The largest soil particles will sink first, and the fine particles will float to the top. The film on top is called humus. Good garden soil will have several different particle sizes.
6. Have students draw pictures and outline them in glue, then sprinkle soil on the glue for color.

ADDITIONAL ACTIVITIES
1. Take cuttings from two or three easy-to-grow houseplants (philodendron, aloe vera, spider plant), and place them in water until they begin to grow roots. Place cuttings from the same plant in different kinds of soil—one in good potting soil, one in sand and one in clay soil. Have students watch the progress of the different plants over a period of time and chart which plants do best in which kinds of soil.
2. Have students map the soils on a color wheel and discuss the hue locations.
3. Make dirt shirts from Oklahoma red dirt. Fill a bucket half full with water. Add enough red dirt so the water is gritty and muddy looking. Place a white cotton T-shirt in the bucket. If desired, tie knots in the shirt or tightly secure random sections with rubber bands for a tie-dye effect. Use a long wooden stick to stir the shirt in the muddy water until the shirt has attained the desired color. Hang the shirt in the sun to dry. When the shirt is dry, rinse it in cold water to remove
excess mud, then wash it in cold water in the washing machine and dry hot to set the color.

2. Sing to the tune of “Three Blind Mice:"

   I love dirt. I love dirt.
   It can’t hurt
   On my shirt.
   I love to squirt it with my hose.
   I love to squeeze it between my toes.
   The fun we have just grows and grows.
   Oh, I love dirt. I love dirt.

RESOURCES
Ray, Mary Lyn, and Lauren Stringer, Mud, Harcourt Brace, 1996.

EVALUATION
Could the students see and feel the difference in the soils brought from different students’ homes? Could they identify other materials in the soil when examining it with a magnifying device? Did students recognize the different colors of soil?