

Dirty Pictures

Skills: Science, Visual Arts

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 other materials from nature were mixed with the mud to create different colors.

Science

1. Send notes home with students asking parents to send a cupful of soil from the yard in a plastic bag.
 - Read and discuss background.
 - 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.

P.A.S.S.

KINDERGARTEN

Creative Skills—1.3
Science Process—1.1,3
Earth Science—3.1

GRADE 1

Science Process—1.1; 2.1;
3.1,2,3; 4.3

Physical Science—1.1,2

Life Science—2.1,2

Visual Arts—3.1,2

Music—3.1

GRADE 2

Science Process—1.2; 2.1;
3.1,2,3; 4.3

Life Science—2.1

Earth Science—3.1

Visual Arts—3.1,2

Music—3.1

GRADE 3

Science Process—1.2; 2.1;
3.1,2,3; 4.3

Earth Science—3.2

Visual Arts—3.1,2

Music—3.1

GRADE 4

Science Process—1.2; 2.1;
3.1,3; 4.1

Plant Science—3.1

Visual Arts—3.1,2

Music—3.1

GRADE 5

Science Process—1.2; 2.1;
3.1,2,3; 4.3

Physical Science—1.1

Life Science—2.2

Earth Science—3.1

Visual Arts—3.1,2

Music—3.1

Materials

soil samples from various locations

plastic bags

magnifying glasses

clear containers

glue

heavy paper

- Students feel the soils, and compare the different textures.
 - Students dictate descriptive words.
 - 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).
 - Students look at the soil through a microscope or magnifying glass.
2. 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.
 3. Take cuttings from two or three easy-to-grow houseplants (philodendron, aloe vera, spider plant).
 - Place cuttings 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.
 - Students watch the progress of the different plants over a period of time and chart which plants do best in which kinds of soil.

Visual Arts

1. Students map the soils on a color wheel and discuss the hue locations.
2. Students draw pictures.
 - Students outline pictures in glue.
 - Students sprinkle soil on the glue for color.
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.
4. Use muddy footprints and handprints as the basis for works of art.

Music

1. 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.

Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, 4-H Youth Development, in cooperation with the Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.

Oklahoma Ag in the Classroom
Oklahoma 4-H Programs
205 4-H Youth Development
Oklahoma State University
Stillwater, OK 74078
405-744-8889 <http://www.agclassroom.org/ok>



The fun we have just grows and grows.
Oh, I love dirt. I love dirt.

Extra Reading

- Ray, Mary Lyn, and Lauren Stringer, *Mud*, Harcourt Brace, 1996.
Stille, Darlene, *Soil Erosion and Pollution, A New True Book*, Children's Press, 1990.
Wallace, Bill, *Danger in Quicksand Swamp*, Minstrel, 1991.
Wilkes, Angela, *My First Nature Book: A Life-Size Guide to Discovering the World Around You*, Knopf, 1990.

Vocabulary

clay—an earthy material that is sticky and easily molded when wet and hard when baked

hue— a particular variety of a color

humus—a brown or black product of partial decay of plant or animal matter that forms the organic portion of soil

layer—one thickness or fold over or under another

mineral—a solid chemical element or compound (as diamond or quartz) that occurs naturally in the form of crystals and results from processes not involving living or once-living matter

organic—of, relating to, or obtained from living things

port silt loam—Oklahoma state soil

sand—loose material in grains produced by the natural breaking up of rocks

silt—very small particles left as sediment from water; also : a soil made up mostly of silt with little clay

soil—the loose surface material of the earth in which plants grow

surface—the outside of an object or body