

Plant, Soil, & Tree Trunk

Title: Soil Layers

Subject: Science

Grade Level: Middle Grades (6th grade)

Objectives: Students will be able to identify the difference between topsoil, subsoil, and parent material. Students will be able to color each soil layer, name each layer, and describe items that can be found in each layer.

Program of Studies: S-8-ESS-1; S-7-ESS-2

Core Content: SC-M-2.1.4

Materials: Ask students to bring underlined materials from home and send a note to parents explaining why these materials are needed.

- The following materials for soil layers:
 - silty, sandy, and clayed soil sample (see references), sand, pebbles, twigs, grass clippings, dried leaves, and biodegradable liquid dish soap
- plastic jar (at least 1 Liter) with large lid such as a tennis ball container
- spoon and bucket
- paper squares in black, gray, dark brown, medium brown, light brown, and orange
- poster or bulletin board
- tape
- crayons, colored pencils, or markers
- Student Handouts 3A & 3B (one per students)
- *Dig It! Hands-On Soil Investigation* book or copy of Lesson 3 (pgs 17-21) included
- *Sing in Our Garden* CD and *Dirt Made My Lunch* cassette tape (included in trunk)
- CD / cassette player

Activity Procedure: Teacher should read Teacher Background of *Dig It!* (pg 17) and then discuss ideas and the terms topsoil, subsoil, and parent material with the class. Follow activity procedures for Learning Cycle and Exploration (pgs 18-20). Play *Sing in Our Garden* CD and *Dirt Made My Lunch* cassette while students work on activities.

Method to Assess Objectives: Hand out Student Handout 3B. Have students color each soil layer, name each layer, and describe items that can be found in each layer. Evaluate handouts on correction and neatness.

Accompanying Handouts/Material:

- Materials needed for Application Activity (can be used as an extension):
 - 9 x 13 inch cake pan, clear plastic cups, crushed vanilla wafers, soft chocolate pudding, crushed dark chocolate cookies, six gummy worms (optional), spoons,

- napkins, *Dig It!* pg 20 (included)
- Lesson 3 Extension from Dig It! (pg 21) included
- Following resources included in trunk:
 - Let It Rot!* composting guide, *Ten-Minute Field Trips*, Paper Potmakers Kit, Soil Sorting Sieves, Sedimental Kit, Professional Soil Test Kit, BioQuest Biodiversity Tree Study Kit, Five Leaf and Flower Press and blotting paper, *Fanning Tree Field Guide*, *Fanning Wildflower Field Guide*, and "Let's Make Paper" Paper Making Kit
- Websites relevant to this trunk: see www.nku.edu/~enved/regional.htm

References: Ask a local greenhouse or NRCS or USDA Office for donations of or suggestions on how to obtain samples of silty, sandy, and clayey soil.

Dig In! Hands-On Soil Investigations, published with support from the Natural Resources Construction Service, US Department of Agriculture