

## Sensational Super Soil!

**Overview:** Soil is around us outside. Plants, trees, and flowers use soil for support and to get food. This is a unit that will take 4 or more days.

**Procedure:** Hand out *Soil: Kid's Discover* books ([www.carolina.com](http://www.carolina.com)). Read pg. 2-7 together as an introduction. Collect the books to use again another day.

**Day 1:** Make soil babies:

a) Bring in panty hose knee highs and fill with soil. Hot glue googly eyes and pompoms to create a face. Add grass seed. Put in paper bowls. Squirt with water. Place where they get sun. Eventually, your soil babies will grow grass hair.

b) Bring in flower pots. Take a digital photo of a student's face, but cut off the hair in the photo. Glue the photo to the pot. Use Modge Podge over the photo so that it will not get damaged from water. Add soil and grass seed. Once again, when the grass grows, the child's photo will have hair.

Listen to "The Needs of a Plant" song <http://www.youtube.com/watch?v=kkqETB7Xc5g>  
Discuss all the needs that the song lists, but focus specifically on "soil."

**Day 2:** Discuss that composting and decomposing makes soil healthy. Read *Diary of a Worm* by Doreen Cronin and Harry Bliss.

Make your own composting bags or boxes. Relate these bags or boxes to how we take cafeteria scraps and put them on our school garden. Take gallon zip top bags. Punch tiny holes in the bag with an ice pick. Fill the bag with soil. Add banana peels, egg shells, and other scraps from time to time. Place the bag in a foil pan. Place in the sun. Note the changes to the soil. Have soil without scraps in another bag so you can compare.

**Day 3:** Hand out *Soil: Kids Discover* books again. Read pg. 12-13 together. Collect books again to use another day. Bring in tubs of dirt. Purchase fishing worms and add to the dirt. Have students dig through the dirt and find the worms!

**Day 4:** Go to Google and to Smart Exchange. Type in "Soils." An activity will come up with a lemon and a strawberry on top. Load this into your SmartBoard. It is a very basic explanation of soils. Bring in clay soil, sandy soil, and topsoil so your students can complete the chart on the SmartBoard.

Hand out *Soil: Kids Discover* books again. Read pg. 8-11 together. Collect books again. After completing this activity, make soil to eat (enhanced "DIRT" pudding) with the different layers of soil to teach four layers of soil: sand, silt, clay, and loam  
<http://www.thekidsgarden.co.uk/teachingkidsaboutsoil.html>

**ASOL Covered in this Activity:**

**3S-ESS 3** The student will investigate and understand the major components of soil, its origin, and its importance to plants and animals including humans. Key concepts include:

- a) soil provides the support and nutrients necessary for plant growth

Soil Songs: Use any songs from the following Web site to enhance the lessons above. Write the songs on chart paper. Use the ones that are appropriate for the abilities of the students in your class. [www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/kthru6/?cid=nrcs142p2\\_054313](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/kthru6/?cid=nrcs142p2_054313)

**3S-ESS 3** The student will investigate and understand the major components of soil, its origin, and its importance to plants and animals including humans. Key concepts include:

- b) topsoil is a natural product of subsoil and bedrock

The Topsoil Dance: <http://www.youtube.com/watch?v=J6l2dMdAx5M>

Extension Idea: “Act out” The Topsoil Dance

**3S-ESS 3** The student will investigate and understand the major components of soil, its origin, and its importance to plants and animals including humans. Key concepts include:

- d) soil is a natural resource and should be conserved

Print and copy *The Soil Coloring Book* from the following Web site:

<http://www.epa.gov/gmpo/edresources/ssoil.html>

Extension Idea: Color, read, and discuss how the farmer did or did not conserve soil.

Soil Conservation Song: A Science Music Video by Untamed

<http://www.youtube.com/watch?v=FH-WHnacBJ0>

Extension Idea: Listen and discuss conservation.

**5S-SI 1:** The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which

- h) hypotheses are developed as cause and effect relationships.

**5S-SI 2:** The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which

- i) Inferences are made and conclusions are drawn.

**8S-SI 3:** The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which

- m) models and simulations are constructed and use to illustrate and explain phenomena.

## **Additional extension ideas**

**3M-MG2** The student will:

- a) order by length using non-standard units
- c) measure length of objects using standard tools, such as rulers, yardsticks, and meter sticks

Extension Idea: When “digging” for worms, lay the worms on cookie sheets. Use the worms to measure objects using non-standard measurement. Provide rulers for students. Have them measure individual worms and decide which is the longest or the shortest.

**Materials Needed:** *SOIL: Kids Discover* class packs, potting soil, grass seeds, hot glue gun, googly eyes and pompoms, panty hose, flower pots, photos, Modge Podge, *Diary of a Worm* by Doreen Cronin and Harry Bliss, crayons, soil coloring book, zip top gallon bags, foil pan, food scraps, soil, milk, instant vanilla and chocolate puddings, whipped topping, chocolate sandwich cookies (1/2 crushed), clear plastic cups, gummy worms and sprinkles, mixer, bowls, spatula, spoons, tubs of dirt, fishing worms, cookie sheets (with sides if possible), objects to measure, small rulers (6 inch work best)

**Instructional Setting:** Special education or general education classroom.

**Community Connections and/or Peer Interaction:** Contact your Cooperative Extension Office to plan an in school field trip. Plant a school garden bed and set up an observation area to watch for worms and changes in the soil. Partner with general education peers to complete a garden scavenger hunt. Take a trip to a local park to compare soil in different areas (tail, playground, sports field, parking lot).

**Functional Activity/Routine:** Provide funnels for students to their flower pot or their panty hose.

-When the dirt recipe is made, type out directions and have students follow them. Or give more than one direction at a time. Can students follow them in order?

-Use a switch activate measuring cup to allow all students to participate in making the pudding.

**Strategies to Collect Evidence:** Photograph the Grass Hair “Babies.” Ask the students to write, type, or rubber stamp an answer to the following question: “What did the soil do for the grass?” Answer: Provide nutrients and support for the grass to grow. Answers may vary in wording. I have access to Intellitools Activity Exchange/Classroom Suite. Use the “Easy Writing” Plants template to have students write about what plants need. Using Smart Board activities have students circle what soil does for plants. Provide pictures on the assessment and have students circle the correct answers.

**Specific Options for Differentiating this Activity:** Some students with fine motor needs might have difficulty coloring. Use Wiki Sticks to put around a space for the student to color. This allows him or her to have a raised outline to stay within. When you write songs on chart paper, cut out Boardmaker icons to match with appropriate words in the song. Program communication devices with words needed for your lessons. Provide switch activated devices to allow all students the opportunity to pour and/or mix the pudding.