

**Name of Lesson Plan:** Apple Earth and Soil Study **Topic:** Nutrients in Soil and Conserving Soil  
**Time required:** 30 min. **Space:** Classroom **Preparer:** Christina Millson  
**Audience:** Whole Group **Number of Students:** 23

**Resources:** Projector, document camera, Interactive notes, apple, knife, soil from home, magnifying glasses

**VA Science:**

3.7 The student will investigate and understand the major components of soil, its origin, and importance to plants and animals including humans. Key concepts include

- a) soil provides the support and nutrients necessary for plant growth;
- d) soil is a natural resource and should be conserved.

**Behavioral Objectives:** Given apple demonstration, students will observe and discuss the amount of land on Earth that has soil suitable for plant growth.

Given interactive notes, students will highlight pertinent information about nutrients in soil and importance of conserving soil.

**Lesson Description:**

**Introduction:** Begin lesson by passing out soil packet and interactive notes. Ask students to remember what unit they had begun the previous day. Explain that students will continue their study of soil and will be observing a demonstration under the document camera. Read the front page of the packet and describe how the packet will be used for the study of soil. Open to the section on Apple Earth.

**Content Focus:** Explain that apple represents the earth. Ask students to read aloud the first section of the page “Water covers  $\frac{3}{4}$  of the Earth”. Ask students “If  $\frac{3}{4}$  of the Earth is covered by water, then how much of the Earth is land?” Continue activity and cut pieces of the apple as the page describes how less and less of the earth contains useable soil. Finally, there will be  $\frac{1}{32}$  of the apple left and students will realize how little earth is left for farming and growing plants.

After the apple activity, ask students to close soil packet and open interactive notes. Highlight pertinent information about the nutrients in soil and the need to conserve soil. Then draw pictures to represent the highlighted notes.

Close interactive notes and ask students two table groups at a time to get soil from their cubbies. Move students so that everyone has soil to share, emphasizing that it is ok if students were not able to bring in soil from home. Then open soil packets to the page titled “Soil study” explaining to students that they will be examining their samples of soil. Ask students about the type of

thinking map included on the page (tree map). Explain that students will describe the feel, smell, and look of the soil in their tree map. Tell students to begin to smell their soil samples, describing how it smells on the chart. Then ask students to feel the soil with two fingers, not their entire hand, once again describing it on the chart. Finally, hand out magnifying glasses and ask students to write down what the soil looks like and whether the particles are big or small.

**Closure:** Ask students to share their observations and describe where the soil came from. Students should begin to realize how the soil samples came from different locations and therefore had different characteristics.

**Evaluation: *Formative:*** Observe students during lesson to determine if they are paying attention and looking at the speaker. Students' ability to answer questions during lesson.

***Sumative:*** Performance on Soil quiz.

**Differentiation:** The lesson is differentiated for visual, kinesthetic, and audio learners and there are multiple teaching techniques utilized to meet the diverse needs of the class. Visual learners benefit from the apple demonstration and ability to physically see how little earth is left, whereas the audio learners benefit from the discussion surrounding the apple demonstration. Kinesthetic learners benefit from the hands-on-learning and inquiry science involved in the "soil study" portion of the lesson.