Which Soil is Best?

Objectives:

Students will:

· Understand that soil differs depending on the environment

· Conclude that the best soil is healthy, wet soil that allows for lots of plants to grow

· Engage physically with soil and composition

Educator Notes:

· Gather enough materials for students a day in advance (soil samples can be obtained from a commercial source or by yourself, and feel free to mix your own soil samples

· Remind students not to touch their face or eyes, since they will be touching soil and dirt

· Let the students wash their hands thoroughly upon completion of the activity

· It might be helpful as a pre-activity to discuss soil and its composition: ask students about different plants that they know about, and different places they've been where soil and land appear different (forest, garden, desert, beach, etc.)

· Explain that soil composition varies depending on the environment, and what makes soil soil affects what plants can grow in it (for example, cactus plants grow in drier places, flowers grow where there is healthy grass, and seaweed grows in or near water)

Materials:

· Plastic cups

· Soil samples (one healthy, one dry)

· White paper

· Magnifying glasses

· Safety goggles

· A picture of a cactus in the desert

· A picture of a bountiful garden of flowers

Preparation:

Provide each student with two cups: one with healthy soil (this soil should contain roughly equal proportions of sand, silt, clay), the other with drier soil (this sample will be more sandy). Also give each student two sheets of white paper and a magnifying glass.

Key Vocabulary:

soil | clay | environment

Activity:

In this module, students will determine soil from two different environments: a healthy wet

garden and a drier place. Students will use their senses and magnifying lenses to observe two types of soil: soil formed in a dry environment with little vegetation, and soil formed in a wet environment with abundant vegetation. Students should first use their sight to determine visual properties of the soil in their two cups. Students can also smell the soil. Then ask the students to put a bit of each sample onto a sheet of white paper (one sample on each sheet). Students should wear goggles and refrain from touching their eyes. Get the students to clean up their soil samples and wash their hands before returning to their desks for the wrap-up activity.

Wrap-Up:

The point of this activity is to show that soil varies in different environments. Show the students the pictures of the cactus and the flower, and ask them to guess which type of soil each was planted in. Guide the students to understand that wet, healthy soil allows for more plants to grow, and thus is the best soil for planting.

Extension Activity (K-5):

For older students, a scientific observation activity can be done in which students observe and take detailed notes on each part of the soil, from smell to color to texture. This should impress upon students the scientific nature of observing and the need for accuracy in order to draw conclusions. Furthermore, students can produce a short write-up at the end of the module about a place they now with little or a lot of plant growth, and, knowing what they just learned, explain the reason for the heavy or light plant growth.

Sources:

http://www.teachervision.fen.com/tv/printables/SRPA07201_3.pdf