

Pick-a-Path

Standards of Learning

Science 3.1, 3.3, 3.7, 4.9

Objective

Students will:

- Identify the three main types of soil
- Model the different properties of soil

Materials

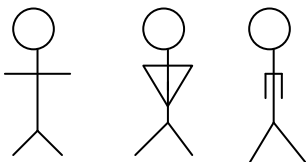
- Student volunteers

Background Information

There are three main types of soil – sand, silt and clay. When all three are mixed together, they create loam. Humus, anything in the process of decaying, is the organic matter found in soil. In this activity, the students will pretend to be the different soil types. Sand, being the largest and heaviest soil particle, allows water to flow through the easiest and fastest. Plants that like fairly dry roots do well in sandy soil. The coastal plain has the highest concentration of sandy soil. Silt, a fine textured soil that feels like talcum powder, is the next smallest particle. Water can flow through silt but it takes more time. None of Virginia's regions have a major portion of silty soil. Most of the silt can be found in the rivers and tributaries of Virginia. Clay, the final soil type, is the smallest soil particle. Clay packs together very tightly. It is difficult to dig and very clumpy. Most clay-based soils are west of Virginia's fall line. Water has a difficult time flowing through clay. In fact, often the water sits on top of the clay creating mud. When all three soil types are mixed together, loam is created. Loam is the best growing soil.

Procedure

1. Divide the class into 4 groups. Assign each group one of the following titles: water, sand, silt, and clay.
2. Soil particles should position their arms like the examples illustrated in this lesson plan.
3. Group the sand particles together so that each particle is touching another (fingertip to fingertip). Tell students in the water group to try and carefully flow through the sand group. They should be able to flow through with little difficulty.
4. Repeat the above step for silt and clay. Silt particles should be touching elbows, and clay particles should be touching shoulders. Discuss the results of water trying to get through the different soil types.
5. Mix up the sand, silt, and clay particles (students) to make loam. Ask the water group to flow through. Discuss the results.



This lesson was adapted from Dirt: Secrets of the Soil by Utah AITC



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