



DIRT DESSERT!

OUTWIT OUTGROW
SEED SURVIVOR
OUTLIVE sponsored by Agrium

activity: grades 1 to 3



DIRT DESSERT!

Time Approximately 30 minutes

Concept

- Soil particles
- Function of living and non-living things in the soil

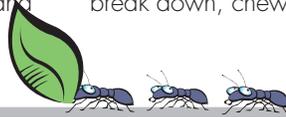
Objective Learn about the needs of plants and animals, small crawling and flying insects and rocks and minerals.

Background If you have not covered particle sizes in your study of soil, you will need to talk about clay (being the smallest), silt (medium) and sand (largest). Another way to describe soil particles is if clay is a golf ball, silt would be a baseball and sand would be a basketball. Clay is smooth, sticky when wet and has very small particles. Sand is rough, the particles are larger and

may stick together when wet. Silt has fine particles, is soft in texture and holds water well. An ideal soil for growing would have a combination of these particles. For instance, a good soil should be able to hold water without becoming waterlogged, have enough sand to prevent hardening of the ground and enough silt to increase the ability to hold nutrients. The mixture of these three particles makes up a 'loam soil.'

Soils are unique in their texture, water holding ability and fertility. The different particles blend to create different types of soils, ideal for different situations. Agrium has a game on its website www.agrium.com in the education centre called SoilTris. This Tetris-like game requires students to compose a soil profile using sand, silt and clay particles for different plants.

There is also a living component to soil, the organic matter. It is made up of dead plants, animals and feces. The organic matter decomposes (with help from worms and micro organisms) that break down, chew, digest and stir up the soil.



Ingredients Suggestions based on the size and nature of the things they represent in the soil.

Soil particles

- Clay – Cinnamon spread
- Silt – Cocoa powder
- Sand – Brown sugar

Organic matter

- Decaying animals – gummy frogs or bears
- Worms – gummy worms
- Micro organisms – coloured icing sprinkles
- Decaying plants – pretzel sticks
- Animal feces – chocolate covered raisins

Method Students should wash their hands carefully before and after this assignment.

Place a central bowl of an ingredient on a group table or smaller cups on the desks of individual students. Students are asked to feel this ingredient — to rub it between their fingers.

Students wipe their hands on a paper towel before picking up a pencil and noting in their journals what the first sample feels like. Encourage them to be as descriptive as possible. They write down the actual ingredient beside their description so they remember its texture.

Give the second ingredient and repeat the exercise. When they have done this for all three bowls, they label their samples and descriptions with sand, silt or clay.

Tell students that the healthiest soil is a mixture of all three of these particles.

Start adding in other ingredients and ask them to explain their significance to the soil. These living things will also appear in varying amounts depending on their size. Micro organisms are so small that there can be millions of them in just a tablespoon of healthy topsoil. When it comes to the organic matter, students will love the gross factor. Talk about other things that decay and add to the health of the soil.

Pick out your snacks and put the experiment away.

