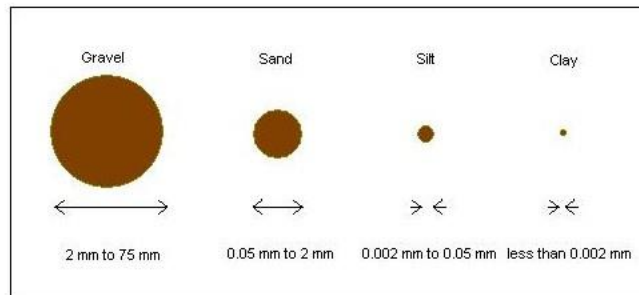


Name of those in your group:

Erdkinder Team Study Guide

Soil Unit; Soil Layers & Particulates



Overview: Soil (aka dirt), covers nearly 1/3 of our planet and nourishes our grass, trees, bushes, and gardens. Soil is a mixture of tiny pieces of rock and organic matter. The amount of organic matter, dead plants & animals, varies from zero in places like a desert, to 100 % in peats, carbon-rich decomposed plants. Healthy soils contain bacteria, fungi, microorganisms, and small animals like earthworms.

Essential questions: Cutting out a 2 ft cubed volume of soil, what layers would I see? Which particles in soil do you think are the heaviest? Lightest?

Chores: Feed & Water Chickens (3-4); water plants in greenhouse as well as the flower bed on North side (4), leave two gallons of water full in the greenhouse when finished; dig 3 2 ft by 2 ft by 2 ft holes where the cone is (6), surround with caution tape; build tiers for melons/squash (3-4); determine where to put the labyrinth & pile rocks; sweep wood chips; weed; re-pot tomatoes into larger pots (2-3);

Checklist

Materials needed for each team: shovel, measuring tape, study guide, papers, magnified glass, paper cup, picture of water, mason jar and lid

_____ **Examine** the surface of the grass-covered soil. **List** what you observe on this level:

Note: These objects you observe will eventually become part of the organic matter in the soil below.

_____ Place the pieces of 2ftX2ft sod on a paper at your team table. (Later, you will return the sod to its original spot) Look at the sides of the hole. **Sketch** the layers that you see in the soil here:

Soil particles are classified according to size.

Soil Class	Size
Gravel	2mm-75mm
Sand	.06mm-2mm
Silt	.002mm-.06mm
Clay	Less than .0002mm

_____ **Collect** a soil sample from each layer you see & label them in a baggie (be sure to include some soil from the grassy sod)

_____ **Shovel** the soil back in the hold and replace the grassy sod

_____ **Spread** a small amount of soil from each sample you collected. Keep track of which sample is on which paper. Use a magnifying glass to look at the particles.

Can you **find** particles that look like sand; pieces of rock? Can you detect pieces of plant leaves, bark, roots, twigs, seeds? Can you detect animals such as ants, beetles, grubs, worms?

_____ **Repeat** this observation with all of your samples

_____ Pour one of your samples into a paper cup. Slowly add water to the cup. Do you see bubbles coming out of the soil? Discuss as a group why you would see bubbles?

_____ **Mix** all your samples together and fill a mason jar 1/3 full with this soil Then fill the jar nearly full with water. Put on the cover and shake it for one minute. Our next class period we will observe? You will immediately see that the water has become cloudy. The clay in the soil has caused the water to appear cloudy. Be sure to look at the bottles and how the soil has settled tomorrow.

If you have time, you may move the sod piece and place a shovel full of soil onto some paper. Put on a pair of gloves & **sift through** the soil to search for animals. Use a magnifying glass to look for very small ones.