Shake Rattle and Roll

Objective: To identify the amounts of soil particles that make up a soil’s texture.

Time: 20 Minutes

Materials: Jar, soil, water, permanent marker

Prior to Activity: Explain to the gardeners that when they take a soil sample, they should not just scrape soil off the top, but should dig about 6 inches into the soil and take the sample from there. Briefly discuss how to safely use a garden tool such as a shovel or trowel. Tell them they will test the soil to find out how much sand, silt, and clay are in it.

Methods:
1. Take a soil sample from an outdoor play area and from the outdoor garden if there is one. Fill a large jar half-full with soil from the soil sample and the rest of the jar with water.
2. Ask the gardeners to take turns shaking the jar for several minutes until the larger clumps are broken apart.
3. Let the jar sit for 1 minute and use a permanent market to draw a line to mark what has settled. Tell the gardeners the sand makes up the heaviest particles, which sink more quickly to the bottom.
4. Allow 24 hours without moving the jar for the mixture to settle further. The top layer will be clay, which includes the smallest, lightest particles. The middle layer will be silt, and the bottom sand. Point out that any material floating on the water surface is organic matter.
5. Have the gardeners decide which layer is the thickest to determine the soil’s texture. Explain that organic matter contains nutrients and makes any kind of soil texture even better.

Have students graph the height of the separate layers. The students can then break into groups and duplicate the activity with soils from different areas and then graph those results.

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