Soil Ingredients

Summary

Soil ingredients are sorted into organic materials and rock sediments.

Time Frame

1 class periods of 30 minutes each

Group Size

Small Groups

Materials

For the each group of 3-4 students:

- 1 cup soil (do not use potting soil)
- Worksheet divided into 3 sections labeled Animal, Plant, Mineral
- Hand lens
- Tweezers
- Measuring tape or ruler (metric is preferred)
- Newspaper
- "Soil Ingredients" worksheet

Background for Teachers

The largest percentage of soil (usually about 45%) consists of very small rock particles formed as a result of weathering and erosion (the processes of wearing down rocks into sediments and moving them). Twenty-five percent of a given soil is air. Another twenty-five percent is water. The remaining five percent is organic material, or the remains of plants and animals, called humus. Topsoil (the top-most layer of soil) usually contains more humus than does subsoil (the soil layers under topsoil). Topsoil is usually darker than subsoil.

Intended Learning Outcomes

- Observe objects and report observations.
- Use instruments to measure.
- Record data accurately.

Instructional Procedures

- Group the students.
- Instruct the students to cover their workplace with newspaper.
- Distribute soil, worksheet, hand lens, tweezers, and measuring tape. Their soil sample should be on the newspaper.
- Instruct the students to sort through the soil particles and decide if the particles are plants, animals, or mineral and rocks. The particles should be placed in the appropriate section of the worksheet.
- After sorting the particles, the students should complete the worksheet, "Soil Ingredients."
- When the students are finished with the worksheets, go over the information together.
- Ask them what the ingredients of soil are. As a class, make a list on the board of four general ingredients of soil:
    - plant and animal parts, rock sediments (mineral), air, and water.
    - Ask the students to identify which ingredients are living (any insects they may have found),

nonliving (air, water, rock sediments) and once living (plant and animal parts).

Assessment Plan

Ask the student to list four ingredients of soil. Beside each ingredient, ask them to identify it as living, nonliving, or once living.

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