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Teacher's Corner Lesson Plans

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Learning About Different Soils and Their Water Retention Ability^{*†}

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Grade level: Grade 5-6.

Provincial curriculum links: Quebec.

Subject: Science; Language.

Keywords: Soil, water, earth, compost, clay, sand, dirt, experiment.

Description

Students will work in groups and look at four different kinds of soil (garden soil, clay, sand and compost). They will need to describe each kind, and then add water to observe what occurs.

Curriculum Framework

The topic includes all ranges.

Specific Lesson Goals

- Students will be able to identify different kinds of earth, and be able to describe the differences with a richer vocabulary.
- This fits in well with lessons in life-long learning, an integral part of the curriculum reform in Quebec.

Preparation

Preparation time: 30 min.

Length of lesson: 45 min.

Resources required:

*I made this one up because we had so much clay in the yard, and so the idea of knowing what kind of soil you have is important. References to Quebec curriculum.

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- 8 small containers (1/2 cup) with lids
- Measuring cups
- Adequate amounts of sand, garden soil, compost and clay to fit into two containers each
- Science write-up sheet (See example in Procedure - Part 2)
- Pencils

Procedure

Part I

1. Divide the class into 5-8 groups. It is important that each group has at least one of the containers of soil and that each student be able to touch each sample.
2. On the board, list the four types of soil.
3. Each group describes the physical characteristics of each soil type and records their observations on the write-up sheet. They then make their educated guesses as to which soil is in each container.
4. Each group has a minimum of eight minutes to work on each soil sample until each group has seen all four samples.

Part II

1. Observe what happens when 1/4 cup of water is poured into each soil sample.
2. Students describe their findings in groups and will follow-up with an individual science write-up.
3. Allow about five minutes for each group to discuss their findings
4. An appointed chairperson for the group reports to the class what his/her group observed with the sample of soil.

Science Write-up Sheet should look something like this:

Container Number	Observations	Our Guess of Soil Type	What Happened When We Added Water	Our Discoveries
1				
2				
3				
4				

Discussion and Questions

After Part I:

Discuss as a class:

1. Can you guess which soil sample is which? How did you come to that conclusion?
2. What new vocabulary did you learn from this lesson?

Student Evaluation

- Group observation, participation and co-operation
- Individual write-up sheet

Enrichment and Extension Activities

If the soil proves to be a problem in terms of water retention, mixing the soil with some of the other soils may be beneficial. The samples can be mixed with small amounts of soil of the group's choice (ie. Clay with sand, or clay with compost) to see if the result is a more loamy soil.