

Standards-Based Lesson Planning Springfield Schools

Standard(s): Science and Technology/Engineering

Strand # 1: Earth and Space Science

Learning Standard # 4: Explain and give examples of the ways in which soil is formed (the weathering of rock by water and wind and from the decomposition of plant and animal remains).

Standard(s): English Language Arts

Strand: Composition

Learning Standard # 19: Writing - Students will write with clear focus, coherent organization, and sufficient detail.

Strand: Language

Learning Standard #2: Questioning, listening, and contributing – Students will pose questions, listen to the ideas of others, and contribute their own information or ideas in group discussions or interviews in order to acquire knowledge.

Desired Results

Scope and Sequence

Topic: Changes in Nature: Soil Formation

Suggested Time Frame: Two day environmental education experience at **ECOS (Environmental Center for Our Schools)** in Forest Park, Springfield, MA

Essential Questions

- How is soil formed?
- Where does soil come from?
- Why does soil come in different colors?

Content and Skills (Progress Indicators)

- Identify the forces of weathering.
- Describe the different texture and color of humus, clay and sand.
- Identify decomposing organisms of a decaying log.

Assessment Evidence

- Students participate in answering teacher prompted questions to assess their knowledge of soil formation.
- Using journals, students will demonstrate their understanding of how soil is formed.

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Learning Activities

- Observe rocks that are presently undergoing the physical changes of weathering. Note tree roots that are breaking apart the rock, the smoothness of the rock due to weathering, lichen and moss growth covering the rocks.
- Observe various soil samples with a microscope. Note the difference in soil color, texture, odor and clumping ability. Note any organic fragments, or particles that resemble minerals.
- Observe decaying logs. Note decomposing organisms such as mushrooms, earthworms, sow bugs, and millipedes.
- Observe decomposing leaves on the forest floor. Note that leaves in the litter habitat become more decomposed the deeper they are.