James Farm Activity

This activity is recommended for 3rd grade but may be adapted for other grade levels. It is designed to correlate with curricular resource Earth Materials, Full Option Science System (FOSS).

Challenge:
Can you describe the differences between soils collected from five sites at James Farm and determine what they are using the soils data chart?

Materials:
Hand lens, plastic spoons, snack size baggies (5 per group). Bags should be numbered 1-5, a copy of the James Farm Map, copies of Soil Data Collection Chart for each student, pencils, clipboard, paper for drawing or writing observation.

Procedures for teacher:
1. Students will meet at the pavilion to go over the rules and procedures of the day.
2. They will be divided into groups of 2-4 students depending on the size of the group. Teachers will hand out materials and the map of James Farm.
3. Explain that the map has the 5 soil collection sites marked. Tell students they will go to each site and work with their group to collect a soil sample making sure they fill up any holes that are made at each site.
   - Site #1. A bare spot near the pavilion.
   - Site #2. Top of the hill (this is an ancient sand dune)
   - Site #3. Intersection of the Blue and Red trails.
   - Site #4. Before the first boardwalk.
   - Site #5. Beach
4. To model the activity, direct each group to collect their first sample at the pavilion area. They should find a bare spot and scoop up some soil placing it in baggie #1. Once the soil sample is collected guide them as they make their site observations:
   - What kind of plants do you see?
   - Is the site mostly covered with plants or is it mostly bare earth?
   - Is the site flat or hilly?
   - Do you see any water?
   - Is there any evidence of wildlife?
5. Groups will continue their collections by following the Red trail down to the beach area. Students will collect the soil samples from each site and put them into the corresponding bag. Soil samples should be taken from the edge of the trail so sites 2, 3, and 4. Teachers should remind the students to observe their surroundings at each site as they did at the pavilion area. They may want to draw or write down their observations for the discussion later.
6. After the soil samples are collected, follow the Red trail back to the pavilion area. Each group will compare the soils from the baggies and fill out the chart. This may be teacher lead or individual group discussion.
7. After groups have completed the chart, discuss the following questions:
   - What soil characteristics did you observe at each site?
   - Is there evidence in your sample that shows where the soil came from?
   - Could you determine a water source for the area where the soil came from? (Ex. Rain water, stream, bay, run-off)
   - Can you find anything in your sample that was not natural?

Extensions:
- A follow-up to this lesson would be to use a “Wetlands Soil “color chart and “The Key to Soil Texture Chart to determine the types of soil that they found. (WOW book p. 238 )
- Look around your school yard and find soils which match your samples from James Farm.
### Soil Data Collection Chart

**Challenge:** Can you describe the difference between soils collected from five sites at James Farm? Can you determine the relationship between the surrounding and the type of soil found?

Your job is to collect soil at each site, write a site description, then complete this chart once you have returned to the pavilion area.

<table>
<thead>
<tr>
<th>Site Description</th>
<th>Texture (feel)</th>
<th>Particles (describe)</th>
<th>Color</th>
<th>Other</th>
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**Texture:** Rub the soil between your fingers. Is it dry, moist, wet, or gritty? Does it fall apart, stick together or is it sticky? Can you mold it or is it too wet or too dry?

**Soil particles:** What size and shape is the particle? Sand (feels gritty), minerals (tiny bits of rock), clay, silt (like flour or powder), pebbles, organic matter, bits of leaves, twigs, bark

**Other features:** What does it smell like? Describe any rocks, dead plants, or other non-living materials in the soil. Describe any living things such as worms, roots, or insects.