

Name \_\_\_\_\_

Hour \_\_\_\_\_ Date \_\_\_\_\_

## A Field View of Soil - Digging Around

**Description:** Students will investigate variations in the soils around their school to discover that soil properties like moisture and temperature exhibit considerable variability across a single landscape. They will be able to identify factors such as slope, shade, plants, compaction, which affect the appearance of soils and their ability to hold moisture.

### Key Concepts

- Soil profiles can be described based on the five soil-forming factors.
- Soils within a small geographic area can show considerable variety.
- Soil factors also affect soil moisture content and temperature.

### Skills

- *Observing and describing* soil samples
- *Collecting* data in the field
- *Identifying* relationships between the soil-forming factors and the resulting soils

### Materials and Tools

- 1 small shovel or trowel per group
- 1 large, heavy duty zipper freezer bag per group
- 1 sharpie per group
- 1 clipboard per group to record observations
- 1 GLOBE flag per group
- 1 computer disk per group, labeled with your name and hour
- 1 50-meter measuring tape per class

### Outside Procedure:

- Before leaving classroom, all groups should use the check boxes to be sure they have the first 5 items listed above.
- Before leaving the classroom, record (on your data table) the meter mark your group will be sampling.
- The group that is taking measurements at the start, or zero point, must carry the meter tape out to the site.
- Once outside, go to the start point, as directed by your teacher. Group 1 (starting point) should put their flag in at the beginning of the transect. One person in the group must hold on to the tape until all groups have their sites along the transect.
- A student from the last group should then take the meter tape and roll it all of the way out in a straight line, as the teacher directs.
- One student at each end of the transect will hold the meter tape and make sure it stays straight until all groups have their flags placed.

- ❑ Each group should place their flag at their designated distance along the transect. After all groups have set their flags, the meter tape may be rolled up by a member of the last group. (The last group is responsible for taking the meter tape back inside.)
- ❑ Before digging, the digital camera will be passed from group to group. Each group should take one picture (zoomed all of the way out) at elbow height, and pass the camera to the next group. Use your disk only, and take it out before you pass it along.
- ❑ Look closely at the area you are about to sample. Record details about what you see. Record all types of organisms, plant, animal, fungus, that you can see. Describe each in detail. If the camera is available, you may take pictures for later identification. (If it is not available, please place your organisms in the bag and photograph them later.)
- ❑ When you take your sample, try to keep it all together in one cone shaped sample, if possible. Push your trowel into the ground as far as you can. If you can, pull the trowel out a little, then push it back down. Keep doing this until you have gone around a full circle, then pull the soil out and place it in the bag.
- ❑ If the soil is too hard or rocky for the last step to be done in a reasonable amount of time, get as much of it as you can. Try to place it in the zipper bag so that the surface is at one end and the bottom of the hole is at the other end.
- ❑ Record how warm or cool the soil feels, and how moist your sample feels in the data table. (Does it feel the same at the top and bottom?)
- ❑ When all of the groups have accomplished this, go back into your classroom with your teacher's permission.
- ❑ If you have to store your sample at this point, be sure your group meter number and hour are written on the bag with the sharpie, *AND THE BAG IS COMPLETELY SEALED!*

**Inside Procedure: (This may be continued on the next class day, if necessary.)**

- ❑ Fill out your data table and record additional observations.
- ❑ There will probably be only one color book for the class to use, so use it as soon as another group gets it, then pass it to the next group.
- ❑ Use your vocabulary words from this unit in your descriptions.
- ❑ The more **valid** data and metadata you record, the better!
- ❑ Don't worry about being absolutely certain about how you use the vocabulary words; this is an introductory activity, and we will discuss each of them as they relate to your samples.

## Data Table : Soil Properties

Group Number	Hour	Point on meter tape
Group Members		
Color		
Description of surface vegetation. Include references to any pictures taken.		
Describe the amount and color of roots in soil.		
Describe the shape of the soil particles.		
Describe how the soil feels.		
Describe the amount, size, shape and kind of rocks in the soil.		
Describe any organisms you find in the soil. Take pictures and refer to them if possible.		
Use this space to record any other observations you made.		