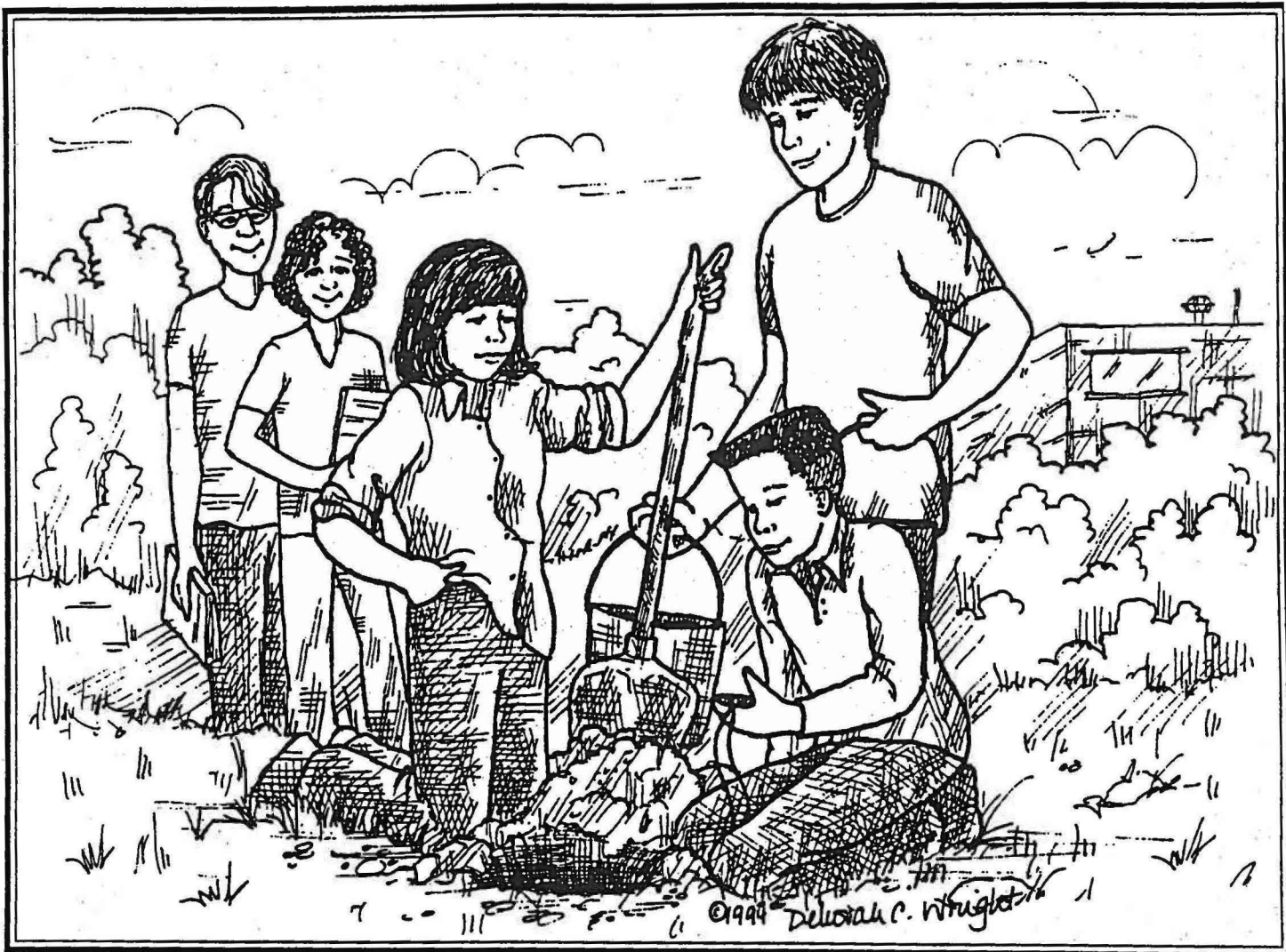


#1 - What is a Perk Test?



Focus Question:

What can a perk test tell us about the soils beneath us?

Objective:

The students will measure the rate at which the same amount of water is absorbed by various soils.

Suggested Grade Level:

Grades 5-8

Materials Needed:

- 3-6 large plastic peanut butter jars (same size)
- 3-6 plastic milk gallons
- 3-6 white coffee filters
- 3-6 soil samples to be obtained from students
- a bucket of gravel or small stones
- a water source
- clock w/ second hand or stopwatch

Overview:

The speleothems found within caves are the result of the precipitation of minerals from groundwater as it percolates through various soils.

Procedure:

- 1) Set aside 4-8 equal-sized plastic containers.
- 2) Place a white coffee filter inside the mouth of each of the jars allowing the majority of the filter to sag to the center of the jar. Secure top of filter to outside of jar with rubber bands.
- 3) Label each of the different jars as to the student specimens of soil.
- 4) Add two tablespoons of soil to each of the jars.
- 5) Pour two cups of water, same temperature, over each of the samples.
- 6) Allow the water to percolate through the filter, some of the water will be absorbed by the soil.
- 7) Remove the filter and soil sample making sure to record which sample is with which jar.
- 8) Use the litmus paper, red=acid, blue=alkaline, and record if there is any specific acid or alkaline nature for each of the samples.
- 9) Examine the color of each soil and water specimen.
- 10) Prepare a brief report on the samples and the findings, including the color of solution after pouring water, and nature of litmus test.

Conclusion:

Soils are a very complex entities. They represent the erosion of native rock and are the result of subtle changes influenced by climate and vegetation. Soil science is important not only to the agri-business but to the builder and contractor, the landscaper and homeowner.

Further Investigations:

Students may want to learn more about the soils in and around their neighborhoods. Contacting agricultural extension agents and district or county soil scientists may prove an interesting spin-off to this introductory activity.