



# SOIL POUR-THROUGH

## SUPPLIES

2 or 3, 20 oz. clear soda bottles or tennis ball containers (top cut off and holes drilled in the bottom)

2 or 3 Clear cups marked with 1/4, 1/2, 3/4 and 1-cup measurements

2-3 Different soils, enough to partly fill each soda bottle container or tennis ball container

2-3 Plastic cups or measuring cups marked with a 1-cup line

1 clock or stopwatch



**FIGURE 1.** Find 2-3 different soils. Pour water through them. What differences and similarities do you observe?

*Time needed: 40 minutes*

Water moves differently through different soil types. This can affect how plants grow in different soils; whether they can get enough water or too much water. How does water move through your soil?

## LET'S DO IT!

- To test the differences in water moving into the soil and moving through the soil, begin with clear soda bottles (or similar plastic containers) with holes drilled into the bottoms.
- Use soils collected from your backyard, park, woods, swamp, etc.
- Soil samples should be dry. To dry soil, lay them out on a tray on a sunny windowsill for a week or two.
- Put the same amount of soil (about 1-2 cups) into the bottle
- Fill your cup with water to the one-cup mark.
- Using the soil and water drainage sheet, write down a hypothesis about what you think will happen.
- Make a hypothesis about which soil water will travel through the fastest.
- Using a clock or stopwatch, pour water into your soil samples and observe how fast the water moves through the soil.
- After 30 seconds, observe how much water drained into the cup. Record your measurement on your work sheet.
- Continue observing the water drain through the soil. Measure at 30-second intervals until most of the water has drained.

## TALK IT OVER

- Which soil drained the fastest? Which drained the slowest?
- What does the water look like from the drained soils?
- What happens if we use compacted soil?
- What if the soil is already wet? Can we change the structure of the soil? How?
- What is the relationship of water drainage in soil to plant growth?
- Compare the total water quantity that drained with the amount of water added.
- Which soil retained the most water after drainage stopped? Why?
- Which soil has the most total porosity?

### EARN YOUR SOIL BADGE

Complete three soil activities and earn a Super Soil Sleuth award.