

## Soil Test Directions

### Texture Test

1. Take a handful of soil from your quadrant and spray it with water until it is damp, but not soaking wet.
2. Rub the soil between your fingers and observe and feel its texture.
  - How does the soil feel? Is it sticky, slippery, or gritty?
  - Do the particles look and feel small, large, or somewhere in between?
  - Does the soil feel most like sand, silt, or clay?
3. Use the Texture-by-Feel Analysis of Soil key (or the chart on the back of it) to figure out what type of soil you have.
4. Repeat this test three times in different spots within your quadrant.

### Taking the Soil Temperature

1. Insert the soil thermometer 2.5 inches into the soil (until the black mark is just touching the ground). You should try to take readings at this same depth each time.
2. Hold the thermometer in place for two to three minutes in order to get an accurate reading.
3. Repeat this test three times in different spots within your quadrant.

### Compaction Test

1. Within your quadrant, push the pointy end of a pencil into the soil as far as you can, using normal force.
2. Use another pencil to make a mark on the pencil at the soil level.
3. Pull the pencil out of the soil. Using a ruler, measure the distance from the mark you made to the pencil point. This will tell you how far you were able to push the pencil into the soil.
4. Use an eraser to remove the mark you made on the pencil, and then repeat this test several times in different places within your quadrant.

## **Percolation Test**

1. Push the can (a soup can with both ends removed) 3 cm into the soil, until it reaches the line encircling the can.
2. Pour water into the can until it reaches the top. Once you start pouring, be sure to fill the can quickly. Don't let the water overflow the can. (One student should pour the water while another gets ready to start the stopwatch).
3. Immediately use a stopwatch to measure how long it takes for the water to soak completely into the soil. If you do not have a stopwatch, you can use the second hand of a watch.
4. Repeat this test three times in different spots within your quadrant.

## **Soil Profile Measurement**

1. Take a new soil core for this activity. Leave the sample in the core. Take a photo of the sample.
2. Draw the sample, and include the following in your drawing
  - Measure the depth of each layer. Label each layer O, A, B, C and label the measurement for each.
  - Use colored pencils to show the color of each layer. Use the color chart to find the scientific description of the different colors (label these on your drawing.)