

6

Describing Soil Scientifically

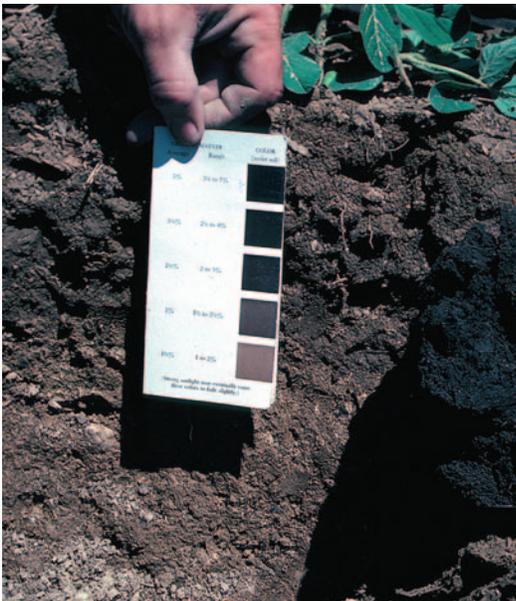


The next day, Ms. Clayson brought two bags of soil to class. One of the bags contained soil from the school garden. She brought it in so that the class could find out what might be wrong. The other bag contained soil from another garden in which plants were growing well. Unfortunately, she forgot to label the bags, and she couldn't tell them apart! She asked the class to help her figure out which soil came from the school garden.

Like the students in Chris's class, you will try to identify each soil by closely examining some soil characteristics. These include color, texture, and consistence. **Color** of soil can vary from grayish to yellow to deep red brown to black. **Texture** (TEKS-chur) describes the size of the particles. Rubbing soil between your fingers tests the soil's texture. **Consistence** (con-SIS-tens) describes how easily the soil clumps can be broken apart.

CHALLENGE

How do scientists describe soil?



Scientists use a variety of tests to determine soil composition.

Activity 6 • Describing Soil Scientifically

MATERIALS	
	<p>For each pair of students</p> <ul style="list-style-type: none">1 sample of Soil A1 sample of Soil B1 cup of water1 Soil Color Chartpaper towels

PROCEDURE

1. In your science notebook, make a table like the one below.

Table 1: Soil Observations

Soil Composition	Soil A	Soil B
Color		
Consistence		
Texture		

2. Compare the color of each soil with the Soil Color Chart. Record your observations in your data table.
3. Compare the consistence of the soils by trying to break apart a small clump of each soil. Record your observations in your data table.

The soil consistence is

loose if the soil breaks apart when held.

friable if the soil breaks apart with a small amount of pressure from one finger.

firm if the soil breaks apart with a lot of pressure between two fingers.

4. Compare the texture of each soil by wetting one finger and rubbing a little soil between your fingers. Record your observations in the data table.

The soil texture is

grainy if the soil is made up of large-sized pieces and feels gritty, like sand.

silky if the soil is made of medium-sized pieces and feels powdery, like silt.

sticky if the soil is made of small pieces and feels gummy, like wet clay.

ANALYSIS



1. Copy the lists of words shown below:

List 1

color

brown

red

grayish

texture

List 2

loose

sticky

consistence

firm

friable

List 3

rocks

layers

organic matter

cylinder

soil

- a. In each list, look for a relationship among the words. Cross out the word or phrase that does not belong.
- b. In each list, circle the word or phrase that includes the others.
- c. Explain how the word or phrase you circled is related to the other words on the list.



2. a. Read the following descriptions of soils.

SCHOOL GARDEN IN PHOENIX, ARIZONA

This soil is light brown to grayish. The consistence is firm because it takes some pressure to break apart small clumps. Its texture is gritty and sandy. This soil is found all over the southwestern United States, particularly in Arizona, New Mexico, and parts of Texas.

GARDEN IN ORLANDO, FLORIDA

This soil is a light to medium brown color. The consistence is friable because it falls apart with only a little pressure. With the exception of the twig particles, this dirt feels silky to the touch. This soil is rare in the United States, but can be found near the marshes of central Florida.

b. In your science notebook, make a table like the one below.

Table 2: Composition of Soils

	<i>School Garden in Phoenix, AZ</i>	<i>Garden in Orlando, FL</i>
<i>Color</i>		
<i>Consistence</i>		
<i>Texture</i>		

3. Compare the descriptions of the soils from each garden to your observations of Soils A and B.
 - a. Which soil is from the school garden in Phoenix, Arizona? Support your answer with evidence and data from this activity.
 - b. Which soil is from the garden in Orlando, Florida? Support your answer with evidence and data from this activity.
4. The best soil for plants in the school garden is a dark, silky soil that is loose or friable. Which would be better for the school garden—Soil A or B? Explain.