Soil Texture Lab Name_____

Identifying Soil Texture by Feel

Feel test – Rub some moist soil between fingers.

- Sand feels gritty. Y / N
- Silt feels smooth. Y / N
- Clays feel sticky. Y / N

Ball squeeze test – Squeeze a moistened ball of soil in the hand.

- Coarse texture soils (sand or loamy sands) break with slight pressure.
- Medium texture soils (sandy loams and silt loams) stay together but change shape easily.
- Fine textured soils (clayey or clayey loam) resist breaking.

How my soil sample reacted to the ball squeeze test: _____

Ribbon test – Squeeze a moistened ball of soil out between thumb and fingers.

- Ribbons less than 1 inch
  - Feels gritty=coarse texture (sandy)soil
  - Not gritty feeling=medium texture soil high in silt
- Ribbons 1 to 2 inches
  - Feels gritty=medium texture soil
  - Not gritty feeling=fine texture soil
- Ribbons greater than 2 inches = fine texture (clayey) soil

My soil sample ribbons _____ inches long and feels _____

By feel, my soil sample most likely is _____.

Take a small sample of your soil, put on a small piece of paper, and observe under magnification.
Record your observations:

_____

_____

Identifying Soil Texture by Measurement

Figure 3. Measuring Soil Texture

1. Spread soil on a newspaper to dry. Remove all rocks, trash, roots, etc. Crush lumps and clods.

2. Finely pulverize the soil.

3. Fill a tall, slender jar (like a quart jar) a one-quarter full of soil.

4. Add water until the jar is theee-quarters full.

5. Add a teaspoon of powdered, non-foaming dishwasher detergent.

6. Put on a tight fitting lid and shake hard for 10 to 15 minutes. This shaking
   breaks apart the soil aggregates and separates the soil into individual mineral
   particles.

7. Set the jar where it will not be disturbed for 2 to 3 days.

8. Soil particles will settle out according to size. **After 1 minute,** mark on the jar the depth of the sand.

9. **After 2 hours,** mark on the jar the depth of the silt.

10. **When the water clears** mark on the jar the clay level. This typically takes 1
    to 3 days, but with some soils it may take weeks.

11. Measure the thickness of the sand, silt, and clay layers.

a. Thickness of sand deposit b. Thickness of silt deposit c. Thickness of clay deposit d. Thickness of total deposit

_____

_____

_____

_____

12.

Colorado Master Gardener[sm] Program
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CMG GardenNotes #214

Estimating Soil Texture

Sandy, Loamy or Clayey?

Outline:

Note: For additional information on managing soils refer to *CMG GardenNotes* #213, **Managing Soil Tilth**.

Sand, Silt and Clay

Texture refers to the size of the particles that make up the soil. The terms ***sand***, ***silt***, and ***clay*** refer to relative sizes of the soil particles. Sand, being the larger size of particles, feels gritty. Silt, being moderate in size, has a smooth or floury texture. Clay, being the smaller size of particles, feels sticky. [Table 1 and Figure 1]

Table 1. The Size of Sand, Silt and Clay

Name	particle diameter
Clay	below 0.002 mm
Silt	0.002 to 0.05 mm
Very fine sand	0.05 to 0.10 mm
Fine sand	0.10 to 0.25 mm
Medium sand	0.25 to 0.5 mm
Coarse sand	0.5 to 1.0 mm
Very coarse sand	1.0 to 2.0 mm
Gravel	2.0 to 75.0 mm
Rock	greater than 75.0 m (~2 inches)

Calculate the percentage of sand, silt, and clay.

[clay thickness]
---------- = ___ percent clay [total thickness]

[silt thickness]
---------- = ___ percent silt [total thickness]

[sand thickness]
---------- = ___ percent sand

[total thickness]

13. Turn to the soil texture triangle and look up the soil texture class.