

Soil Laboratory

Water Drainage – Different soils drain water at different rates. When the particles are small, the space between the particles is small, making it difficult for water to drain through. Compost attracts water and therefore absorbs it, which also makes it difficult for water to drain through.

Test each soil sample for Water Drainage by following the procedure below:

1. Make up a soil mixture that combines any two soil components. Record your mixture on your worksheet.
2. Identify 5 seedling containers to hold **Sand, Clay, Gravel, Compost**, and your **Mixture**.
3. Cover the bottom of each container with a coffee filter, and secure the filter with a rubber band.
4. Fill the containers halfway with sand, clay, gravel, compost, and your mixture.
5. Place beakers under your containers to catch the water that you'll pour through.
6. Pour 25mL of water into each container. Record the time when the water is first poured into each container.
7. After 5 minutes, compare how quickly each soil container allows the water to drain.
8. Allow the water to drip for 20 minutes. At the end of those 20 minutes, measure and record the amount of water in each glass or beaker. **While you're waiting, complete the next section of the lab.**

Soil Characteristics – Different soils are classified based on different characteristics. While your water is dripping for the test of drainage, record the following characteristics

- Colour(s) – record the colour of each soil sample (record more than one if you wish)
- Average Size – use a hand lens and ruler to measure the diameter of an average particle.
 - give a general description of what you see
 - collect a group of soil particles in a small circle
 - **estimate** how many particles there are along the width of your circle
 - **measure** the diameter of your group of particles
 - divide the diameter by the number of particles
- Texture – Rub a small amount of soil between your fingers. How does it feel? Press the soil sample together. Does it stick together or crumble? Wet the sample and try again. Record your observations.

Reflection – On the back of your worksheet, write down one or two things that you learned during this lab, one thing you enjoyed, and one thing you would like to have done.

Date:

Group Members:

Our Mixture:

	Sand	Gravel	Clay	Compost	Mixture
Colour(s)					
Average Size (in millimetres)					
Texture & Texture When Wet					
<u>Water Drainage</u> Start Time: Rough comparison after 5mins: Amount of water after 20mins:					