



Water Retention in Soil Lab Sheet

(Teacher Demonstration)

Water retention in soil helps plants grow even when there is no rain during a long period of time. The size of the soil particles can determine how much water will be held in. Water is also kept by soil organic matter.

Test with your classmates which component of soils can hold the largest amount of water!

Directions to set up lab:

Part 1

Set up your samples using the 3 empty, plastic soda bottles.

1. First draw a line 4" from the top (see model 1).
2. Then using the razor knife, cut the top off (see model 2).
3. Flip the top, inversely place on top (see model 3) and tape to secure it in place.
4. Place coffee filter in the top and add $\frac{1}{2}$ cup of each sample as you test them.

Label each sample as: #1 pebbles #2 sand #3 clay

Model 1



Model 2



Model 3



Part 2

Use your Soil Drainage and Recording Sheet to follow along with the teacher demonstration.



1. Using a graduated cylinder, pour 50ml (2nd grade) or 20ml (1st grade) into each sample.
2. Wait 5 minutes for each sample.
3. Take out the filter from top and pour the remaining water back into the graduated cylinder.
4. Record how much water was drained.
5. **Subtract** the amount drained from 50mL or 20mL to find out how much was retained.

Answer the last 2 questions. Why did this happen?