



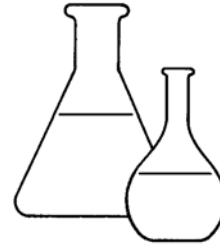
Biocomplexity Lab Activity: Permeability and Porosity of Somerset County Sediments

Objective: To predict and test the permeability and porosity of sediments in Somerset County, New Jersey

Warm Up: What % porosity do you think the sediment on HMS grounds is? Why?

Materials:

- 1) 6 different soil samples from school grounds (approx. 50 grams of each)
- 2) Water (250-350 ml)
- 3) Holding Bottle (1 per group)
- 4) Collection Bottle (1 per group)
- 5) Scale
- 6) Graduated Cylinder
- 7) Weighing paper
- 8) Ziploc bags for soil samples
- 9) Stopwatch



Procedure:

1. Students will walk around the HMS Campus and collect 6 samples of sediment (approx. 50 grams each) from 6 different areas of the grounds (refer to map of school grounds.)
2. Dry out each sample of sediment (over a few days or in an oven) and weigh each sample and record each on the Permeability Data Chart.
3. Students will create a hypothesis within their groups about the permeability of each sample.
4. After each sample has dried and been weighed, obtain the lab bucket containing all the materials and set up the bottles for the Permeability Lab test using HMS sediment.
5. Conduct the permeability test for each sample and record the elapsed time on the data chart.
6. Clean up the Permeability Lab set-up.

7. Share findings aloud and record data on chart paper in classroom.
8. Students will create a hypothesis within their groups about the porosity of each sample (use Warm Up as a reference).
9. Set up the bottles for the Porosity Lab Test.
10. Conduct the Porosity Lab Test on all 6 sediment samples and record the Finish Volumes on the Porosity Data Chart.
11. Clean up the Porosity Lab set-up.
12. Calculate the Pore Space Volume for each sample as well as the Porosity and record each on data chart.
13. Share findings aloud and record data on chart paper in classroom.
14. Examine all of your data and write a conclusion on the Lab Worksheet.

Assessment: Observation of class participation in Lab Activity and Review of Lab Worksheet.



Name _____

Date _____

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**Permeability**

hypothesis: _____

Permeability Data Chart

Date	Sample ID	Sample Weight (grams)	Elapsed Time(s)
/ /			
/ /			
/ /			
/ /			
/ /			
/ /			

Porosity

hypothesis: _____

Porosity Data Chart

Date	Sample ID	Start Volume	Finish Volume (ml)	Pore Space Volume (ml)	Porosity (%)
/ /		250 ml			
/ /		250 ml			
/ /		250 ml			
/ /		250 ml			
/ /		250 ml			
/ /		250 ml			



Name _____

Date _____

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Permeability

Conclusion: _____

Porosity

Conclusion: _____

