

Physical and Chemical Properties of Soil Worksheet

Data Tables

Part A. Physical Properties of Soil

Soil Particle Layer	Sand (1 min.)	Sand + Silt (30 min.)	Sand + Silt + Clay (24 hours)
Height			

Part B. Chemical Properties of Soil

Test	pH	Nitrate	Phosphate
Level or concentration			

Post-Lab Questions

- Calculate the percentages of sand, silt, and clay in the soil sample. Divide the height of each respective soil layer by the combined height of all three layers and multiply by 100.
- Using the soil texture triangle (Figure 1) identify the soil texture class.
- Describe the quality of the soil using your results from Part B:
 - Is the pH of the soil acidic or basic?
 - Are the nitrate and phosphate levels suitable for plant growth?
 - If you were a farmer planning to plant crops in this soil, would fertilizer be necessary? Why or why not?
- Why do excess nitrates and phosphates from fertilizers often end up as runoff in natural bodies of water and groundwater? Why is this problematic?
- Using the information learned in this activity, explain why few plants grow on the beach or in a sandbox.