

Life Science 7

(Copy the following set up in to your Science Notebook)

Title: Activity 5 Lab: Macronutrients in Soil

Objectives:

- Collect and Prepare soil samples for testing
- Identify the three components found in soil types
- Discover the four types of soil testing that we use
- Identify the organisms found within the soil

Challenge Question: What is soil and how do we collect and test soil?

Background:

Soil and the Rock Cycle:

- The exposure of rocks to weathering and erosion at the earth's surface breaks them down into smaller grains producing soil.
- The grains (soil) are transported by wind, water and gravity and eventually deposited as sediments. This process is referred to as erosion.
- The sediments are deposited in layers and become compacted and cemented (lithified) forming sedimentary rocks.

Vocabulary:

Term	Definition	Picture
macronutrients		
organic		
inorganic		
erosion		
humus		
soil		
Dust Bowl		

Materials:

rapitest® Soil Test Kit

Soil PowerPoint notes

Ecology and the Environment book

Procedures:

1. Complete Cornell Notes for Soil PowerPoint lecture notes.
2. Read pages 226 - 229 in *Ecology and the Environment* book.
3. Follow teacher directions to collect soil sample from school ground.
4. Read and follow the directions to prepare your soil sample for testing. Refer to rapitest® Soil Test Kit instructions.
5. Observe and draw your soil sample with as much detail as possible. Record observations in Table 1.
6. Read and follow the directions to conduct the rapitest® Soil Test Kit. Record data from your soil tests in Table 2.
7. Complete Vocabulary. Answer Analysis Questions. Write Conclusion.

Data/Results:

Table 1

Soil Observations

Organic Materials found in soil sample	Inorganic Materials found in soil sample

Table 2

Soil Test Results

Test	Result <i>(write a detailed description of your test result here)</i>
pH	
N Test	
P Test	
K Test	

Analysis Questions:

1. What is soil?
2. Describe the composition of soil.
3. Identify and describe the different soil types (sandy, loamy, clay). What type of soil is your sample?

Conclusion: How do the macronutrients in soil contribute to the growth and development of plants? Use data, evidence and examples from the lab, book reading, and lecture notes to support your answer.