

## Essential Question: Why is soil important to all living things?

### Activity 8 - What are Soil Nutrients?

**Purpose:** To identify the key **nutrients** of healthy soil, and describe what each **nutrient** provides to plants.

**Vocabulary:**

- Nutrients – Chemicals organisms need to get from the environment to build new cells & make internal processes work (like building DNA, digestion, make leaves). [http://www.ctahr.hawaii.edu/MauiSoil/c\\_nutrients.aspx](http://www.ctahr.hawaii.edu/MauiSoil/c_nutrients.aspx)



**Background:**

When sand, silt, and clay are broken down different minerals are released. Some of these minerals are vital nutrients for plants. There are 12 essential nutrients taken up by plants. The primary nutrients are called Macronutrients. They are Nitrogen, Phosphorous, and Potassium. The rest are micronutrients. Another key factor is the pH of the soil. The pH of the soil can block or speed up the uptake of nutrients. Since nutrients and pH are linked we'll study both in this activity.

Please use your [soil notes](#) to help answer these questions.

**Notes:** Write down the importance of each nutrient in the data table below.

Data Table 1. Nutrients in Soil		
Nutrient	Part of plant affected	Description
Nitrogen		
Phosphorus		
Potassium		
pH		

Nitrogen is needed most by plants. (N<sub>2</sub>) is abundant in the atmosphere. However, plants can't use Nitrogen in this form!

**Data Table 2.** Nutrients in Unknown Samples vs. Garden Soil

Soil Sample	pH	Nitrogen	Phosphorus	Potassium
Garden Soil				
Sample 1				
Sample 2				
Sample 3				

**Analysis Questions:**

1. Which sample in Data Table 2 do you think would be the best for growing plants? Explain using the lab data.

2. Tell how you think a forest gets these nutrients?

3. Draw how you think a forest gets these nutrients.



Write down three questions that you think could show up on a test about this activity:

<u>Level 1 - Easy</u>	<u>Level 2 - Harder</u>	<u>Level 3 – Harder, yet doable</u>