**Soil Quality Lab**

**Question:** Are there areas with quality soil on our school campus?

**Background Info:**

Soil quality can be measured through a series of tests. Typically, pH, nitrates, and phosphates can be measured in soil samples to give an idea of soil quality.

pH (power of Hydrogen) is a measurement of how acidic or basic materials are. It is measured on a scale of 0-14 with a pH being neutral and materials becoming more acidic as you reach 0 and more basic as you reach 14. The pH of soil can affect the amount of nutrients are available to plants.

Nitrates (the element Nitrogen) can enter soil through decayed plant and animal material, fertilizer, and from the atmosphere. Plants use nitrogen to make chlorophyll (green pigment that is important for photosynthesis).

Phosphates (the element Phosphorous) can be found naturally in water, fertilizer, and waste water. Phosphorous is necessary for root growth and development. Very important in food crops with edible roots (carrots, beets, potatoes, etc.)

**YOUR SAMPLE Data:**

|  |  |
| --- | --- |
| Sample # |  |
| Location |  |
| Color |  |
| Texture |  |
| pH |  |
| Nitrate |  |
| Phosphate |  |

**CLASS SAMPLE Data:** Write data found from three other samples from the class.

|  |  |  |  |
| --- | --- | --- | --- |
| Sample # |  |  |  |
| Location |  |  |  |
| Color |  |  |  |
| Texture |  |  |  |
| pH |  |  |  |
| Nitrate |  |  |  |
| Phosphate |  |  |  |

**Analysis:** Answer the following questions in complete sentences…

1. Which soil sample is the most nutrient rich? What data did you use to support this decision?
2. Soil samples #2 and #4 were both found near the greenhouse area. What similarities and differences did you find between their soil quality tests? What factors may have contributed to this?
3. Soil samples #2 and #3 were both near trees. What similarities and differences did you find between their soil quality tests? What factors may have contributed to this?