STEM Garden Soil PBL – Work in progress

AP Environmental Science

4.2 Soil Formation and Erosion and 4.3 Soil Composition and Properties Soils are generally categorized by horizons based on their composition and organic material. Water holding capacity—the total amount of water soil can hold—varies with different soil types. Water retention contributes to land productivity and fertility of soils. The particle size and composition of each soil horizon can affect the porosity, permeability, and fertility of the soil. There are a variety of methods to test the chemical, physical, and biological properties of soil that can aid in a variety of decisions, such as irrigation and fertilizer requirements. A soil texture triangle is a diagram that allows for the identification and comparison of soil types based on their percentage of clay, silt, and sand.

Ask – Based on your knowledge of soil composition and properties from analyzing the wetland soil samples, what can you determine about the soil properties in the various STEM Garden plant beds?

Article Reference – [Cation Exchange Capacity](http://nmsp.cals.cornell.edu/publications/factsheets/factsheet22.pdf)

Be sure to incorporate soil data that was received by UGA on the wetland, spectrophotometry data, and soil tests from class.

Future applications and relevance – Based on what you had growing in your STEM garden beds, the plant growth over time, and the soil analysis: should the composition of the plants be modified in terms of crop rotation to naturally replenish nitrogen?