CASE

Project 2.1.7 Lab Report Template

Problem

What is topsoil and subsoil a compromise of and how can it be analyzed?

The soil properties contain permeability rates which are how quickly water moves through soil. The properties also include porosity, which is a combination of texture, structure, and organic matter. They also include water holding capacity, meaning how much water is retained by soil particles. Next are the structure and the grade. These components relate to the strength and the shape of the ped. I expect to find all of these components and to investigate the differences between all of these components.

Hypothesis

I predict that the soil will have a very high permeability rate. I believe that water will move through the soil very easily. I also predict that the soil will be very dry to the touch due to the high permeability rate that the soil contains.

Materials

- Project 2.1.7 Lab Report Template
- Project 2.1.7 Soil Evaluation Card
- Project 2.1.7 Evaluation Rubric
- Pencil
- Computer with word processing and spreadsheet software
- Agriscience notebook
- Soil pit

Procedures

1. Went to soil pit

2. Observed the soil

3. Touched the soil

4. Examined the top soil/ subsoil

Data Collection

Table 1. *Summary of Findings*

Digital Photo of Soil Profile	Written summary of findings for each horizon as determined on the soil evaluation card Use a line to indicate horizon transitions
	First Horizon: The color was dark gray, and the texture was loam and silt loam. The course fragment was 35-60%, the structure prismatic and the structure grade was strong. Lastly the horizon name was AB. **Second Horizon:** The soil is 3 to 4 inches; it's also dark gray color. The texture is clay, silty clay; coarse fragments are 15%-35%. The structure type is granular and also the structure grade is structure less. The horizon name is AB. **Third Horizon:** **Fourth Horizon:**

Table 2. *Texture Determination of Soil Samples*

Your Findings	Class Average or Official Analysis	Explanation for Potential Differences
First Horizon (_0__ to __5_ inches)	**First Horizon** (_0__ to _8__ inches)	The differences between my findings of the first horizon and the class analysis' finding are different by the inches. My findings were a range of inches from 0 to 5 inches. The class analysis findings were from 0 to 8 inches.
Color ___4___	_____ Color	
Texture ___4___	___2_ Texture	
Coarse Fragments ___3___	_____ Coarse Fragments	

Structure Type __4___ Structure Grade _____4____ Horizon Name __7___	_____ Structure Type _____ Structure Grade ___2___ Horizon Name	
Second Horizon (_6__ to __12_ inches) Color __4____ Texture __5____ Coarse Fragments __2____ Structure Type _1_____ Structure Grade __1____ Horizon Name __7____	**Second Horizon** (__28_ to __34_ inches) ____ Color __5__ Texture ____ Coarse Fragments ____ Structure Type _____ Structure Grade ___7__ Horizon Name	My findings of the second horizon are similar to the class analysis second horizon. I predicted that the texture would be 5, which is clay, and sandy clay. The class analysis has the same findings as well. Also with the horizon name my findings were the same as the class analysis findings. They were both 7, which is AB, BA, BC
Third Horizon (___ to ___ inches) Color _____ Texture _____ Coarse Fragments _____ Structure Type _____ Structure Grade _____ Horizon Name _____	**Third Horizon** (___ to ___ inches) _____ Color _____ Texture _____ Coarse Fragments _____ Structure Type _____ Structure Grade _____ Horizon Name	
Fourth Horizon (___ to ___ inches) Color _____ Texture _____	**Fourth Horizon** (___ to ___ inches) _____ Color _____ Texture	

Coarse Fragments _____	_____ Coarse Fragments	
Structure Type _____	_____ Structure Type	
Structure Grade _____	_____ Structure Grade	
Horizon Name _____	_____ Horizon Name	

Analysis of Results

Through this study I have learned that the differences between top soil and sub soil. I was able to analyze these soils and I found that the different layers of soils differ by texture, and permeability. I was able to be hands on with this lab by feeling the textures and seeing the soil types in person. That helped me get a better analysis of this lab.

Conclusions

Based on my findings I have found that the soil is different from what I originally thought it was. I have found that my findings were proven to be very similar to the class analysis but different in the texture and the horizon name. Possible sources of error can be found through the exact place that the soil was found in the ground. Half of it may have been able to get more water than the other half due to water sprinklers or irrigation systems. I do not have any questions from this lab.