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CASE

Project 2.1.7 Lab Report Template

Problem

-What are the properties of top soil and sub soil, and when could you encounter them in a real life situation?

- Permeability rate is how quickly water moves through soil. Water holding capacity is how much water is retained by soil particles. Pores in the soil are created by, roots and other organic matter

Animals, such as worms and rodents, soil particle size and “fit”. Available water is free to plants for use, Unavailable water is held too tightly by clay particles and surface tension, and saturated soils have excess water that will run off increasing erosion concerns. Using my knowledge I know soil porosity, water holding capacity and permeability all depend on each other.

Hypothesis

I think that the top soil we will be observing is going to pertain 50 percent silt, 20 percent sand, and 30 percent clay. The soil structure type I believe will be crumbly and the grade for top soil will be moderate or weak. There will be mottles present. The soil will be a dark brown and light. The sub soil texture I think will be 50 percent silt, 20 percent sand, and 30 percent clay. The structure will be blocky, and the grade will be strong. There will be mottles present as well. I think the color will be dark dark brown or grey.

Materials

- Project 2.1.7 lab template.
- Project 2.2.7 Evaluation Rubric
- Pencil and eyes
- Growers notebook
- A 2 by 2 soil pit with different horizons.

Procedures

1. First I wrote down predictions of the top and sub soil.
2. When you arrive at the pit you look at the different t horizons and the horizon connected to the grass.
3. Evaluate soil by using the ribbon test.
4. I felt the soil with my bare hands.
5. In the lab report write what you observed and what you found out about the soil.

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: In the soil it had various grey and white in it, also it was in between 0 and 5 inches. The texture of the soil made me feel the soil texture would be sandy clay loam, clay loam, or silty clay loam. It didn't have many coarse fragments in it either. The soil looked to have been blocky and moderate. Its horizon name is A. **Second Horizon: This horizon was between 5 and 8 inches and was light brown, and yellowish. The texture had to be clay or silty clay. This horizon had a little more coarse fragments then the first. The second was platy and moderate. Its horizon name was**

Table 2. ***Texture Determination of Soil Samples***

Your Findings	**Class Average or Official Analysis**	**Explanation for Potential Differences**
First Horizon (__5_ to 6___ inches) Color __4____ Texture __4____ Coarse Fragments __1____ Structure Type __3____ Structure Grade __3____	**First Horizon** (__5_to__6_inches) ___4___ Color ___4___ Texture ___3__ Coarse Fragments ____4__ Structure Type __4____ Structure Grade	An explanation for the difference in the students data is because they may have not been looking at different sections of the top and sub soil horizons.

Horizon Name __A____	___AB___ Horizon Name	
Second Horizon (__3_ to _4__ inches) Color __2____ Texture __5____ Coarse Fragments __2____ Structure Type __2____ Structure Grade __3____ Horizon Name __B____	**Second Horizon** (__3_ to __4_ inches) _4_____ Color ___3___ Texture __2____ Coarse Fragments ____1__ Structure Type ____1__ Structure Grade ____AB__ Horizon Name	An explanation for the difference in all the students data is because of how we perceive things, like instead of dark brown another student may see a tint of red in the clay or silt.

Analysis of Results

In the soil it had various grey and white in it, also it was in between 0 and 5 inches. The texture of the soil made me feel the soil texture would be sandy clay loam, clay loam, or silty clay loam. It didn't have many coarse fragments in it either. The soil looked to have been blocky and moderate. Its horizon name is A. This horizon was between 5 and 8 inches and was light brown, and yellowish. The texture had to be clay or silty clay. This horizon had a little more coarse fragments then the first. The second was platy and moderate. Its horizon name was B.

Conclusions

First, in class we practiced differently learning the different texture, structure types, structure grade, presence of mottles, and the different soil colors. We did different things to be able to have a understanding mentally and a physical structure. We did things like physically held a soil type that was either sand silt or clay or a combination. We played with play-doh and modeled the different structure types like granular, platy, blocky, prismatic, and massive/single grain. Doing these different things like this taught us and got us prepared for when we saw the soil pit and did this case report.

Next for the report I created a problem for this lab and I listed the materials and procedures. I made my predictions about the different top and sub soil and recorded them. Then I went out to the soil pit and did my analysis and recorded the information I got from the soils. I found out things about the horizons like

their depth how many inches tall the horizon is and the color. Also, things like texture, coarse fragments, structure type, structure grade, and the and the horizon name. While was making my different analysis the soil was interesting because of how much it changed to me and the differences and just a few inches deeper might do. It was hard to understand the structure type but I just studied the top and sub soil and I had a better idea.

At the end we compared our data with a friend and saw how they compared to each other, some things I seemed to hit right on and some things we were not close at all. We might have got such different data because we might have perceived the soil differently or felt different parts of the top soil or the sub soil. In the first horizon we got the same thing for the color and texture for coarse fragments we did not get similar data she got coarser fragments than I did. Our structure type and grade type were for the most part similar. The horizon grade is A positive. Overall this experiment led me to understand the top soil and sub soil and how much they are different from one another.