

## Project 2.1.7 Lab Report Template

### Problem

I am looking into the soil profile and to figure out the top soil and sub soil. While investigating the top and sub soils we will be trying to determine the texture and to grade the two soils. We will be looking to see the structure of the soils by looking at the peds as well as looking to see how much sand, silt and clay is in the soil. Also, we will be looking at the structure grade by seeing if it's strong, moderate, weak or structureless. Soil permeability rate is how quickly water flows through the soil. The sand has a very high permeability rate because the ped space is bigger than the silt or clay. The silt has a medium permeability rate and the clay has a low permeability because clay holds the water better than the other two soil types. Therefore water holding capacity is how much water is retained by the soil particles which clays will be the highest since it holds the water in more so than sand or silt. I think that the top soil will have a high permeability rate but will have a low water holding rate. But with the subsoil I think that it will be the opposite of the top soil. We will be grading the soil by looking to see if the ample pore space is good. If the pore space is good then it will be defined as strong. I think I will see a strong pore space for the sub soil but the top soil I think will be either moderate or weak.

### Hypothesis

I think that the top and sub soils will be 50% silt, 20% sand and 30% clay. For the top soil I believe that the structure type will be crumbly and the grade will be either moderate or weak. The color for top soil will be a brown-ish. Then for the sub soil the structure type will be blocky and the grade will be strong. The color for sub soil will be a darker brown.

### Materials

- Project 2.1.7 lab report template
- Project 2.1.7 evaluation rubric
- Pencil
- Agriscience notebook

### Procedures

1. When you arrive at the soil you look at the soil that's connected to the grass
2. Then evaluate the soil by using the ribbon test

3. In the lab report write out 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
	<p><b>First Horizon: In the first horizon I saw dark and light grey and white soil particles. It was about five to six inches wide. The texture was sandy clay loam, clay loam or silty clay loam, with a coarse fragment of 35% to 60%. The structure grade was very strong and structure type of prismatic. I came up with the horizon name of 7.</b></p> <p><b>Second Horizon: In the second horizon I saw dark and light grey and white soil particles. It was about three to four inches wide. The texture was clay, silty clay or sandy clay, with a coarse fragment of 15% to 35%. The structure grade was structureless and a structure type of granular. I came up with the horizon name of 7.</b></p>

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

Your Findings	Class Average or Official Analysis	Explanation for Potential Differences
<p><b>First Horizon</b> ( <u>  5  </u> to <u>  6  </u> inches)</p> <p>Color <u>  4  </u></p>	<p><b>First Horizon</b> ( <u>  0  </u> to <u>  5  </u> inches)</p> <p><u>  4  </u> Color</p>	

Texture ___4___	___4___ Texture	
Coarse Fragments ___3___	___1___ Coarse Fragments	
Structure Type ___4___	___3___ Structure Type	
Structure Grade ___4___	___3___ Structure Grade	
Horizon Name ___AB___	___A___ Horizon Name	
<b>Second Horizon</b> (_3_ to _4_ inches)	<b>Second Horizon</b> (_5_ to _8_ inches)	
Color ___4___	___2___ Color	
Texture ___3___	___5___ Texture	
Coarse Fragments ___2___	___2___ Coarse Fragments	
Structure Type ___1___	___2___ Structure Type	
Structure Grade ___1___	___3___ Structure Grade	
Horizon Name ___AB___	___B___ Horizon Name	

## Analysis of Results

In the first horizon I saw dark and light grey and white soil particles. It was about five to six inches wide. The texture was sandy clay loam, clay loam or silty clay loam, with a coarse fragment of 35% to 60%. The structure grade was very strong and structure type of prismatic. I came up with the horizon name of 7. In the second horizon I saw dark and light grey and white soil particles. It was about three to four inches wide. The texture was clay, silty clay or sandy clay, with a coarse fragment of 15% to 35%. The structure grade was structureless and a structure type of granular. I came up with the horizon name of 7.

## Conclusions

Prior to this lab we work on how to find the structure type, the structure grade, horizon name and coarse fragments. We had many worksheets to help us be prepared for this report, with this information before the lab I was able to show my understanding about what I learned. We did numerous activities physical to also help us identify weather the soil is sand, silt or clay and how much of each is in the soils. To help us know what to look for in our structure types we use play-doh to physically see what we need to keep a look out for.

Next, we put a problem together and then we had to list the materials needed and the procedures to find a solution to the problem. After this I made a prediction about the top and sub soils and then recorded my information I thought I would find. Following this, I went outside to see if my prediction was right or

wrong. I did this by using the ribbon test and my knowledge on how to find the structure type, structure grade, coarse fragments, texture, and horizon name. After doing so, I had to also find out the depth of the first and second horizon. While I was doing this I thought it was pretty cool to find out what a couple inches down from the top soil can do.

Finally, we compared our data with a friend or the official document provided by the teacher. With this we could see what each of us thought we saw and could find out who was right, and who was almost right. We might have been totally off but in the end we are still learning what to look for in the different soil types. I was pretty close to being right but I was off by a little bit. Even though I was off its okay, because I am still learning what to look for an be more accurate when looking at the different soil structures.