Name: ____Eileen Bradway_____

CASE

Project 2.1.7 Lab Report Template

Problem

The investigation is to make a prediction about what types of soils make up the topsoil and subsoil within the soil pit before actually going in and analyzing it. It is important to understand these properties in order to see if the soil would be beneficial for plant growth, or if it would be a hazard during a storm or flooding conditions. The previous information that we have gathered on the soil is that the surface soil permeability is moderate, the subsoil permeability is low, and it has a low wind erosion hazard, a moderate water erosion hazard, and good internal drainage. I expect to find Loam and Clay Loam in the soil.

Hypothesis

I predict that the topsoil will be comprised of loam because of the moderate permeability rate, and the subsoil will be comprised of clay loam because of the slow permeability rate.

Materials

- Project 2. 1. 7 Lab Report Template
- Project 2. 1. 7 Soil Evaluation Card
- Project 2. 1. 7 Evaluation Rubric
- Clipboard
- Water bottle
- Knife or Screwdriver
- Pencil
- Computer with word processing and spreadsheet software
- Agriscience Notebook
- Soil Pit
- Digital Camera

Procedures

1. Problem – explanation of the question you are investigating

2. Hypotheses – predictions of what you expected the results to be

3. Materials – list of supplies needed to conduct the experiment

4. Procedure – how and what data is collected

5. Data Collection – graphs, charts, and illustrations to communicate results

6. Analysis of Results – report of the data and related findings

7. Conclusion – summary of findings and what they mean, including errors made and recommendations for future investigations

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: 0-5 inches of soil, with a color of light brown. The texture was that of sandy clay loam, and the coarse fragment rate is 15 to 35%. The structure type is Granular, with a moderate grade, and a horizon name of A. **Second Horizon: 5-8 inches of soil, with a color of dark grey to light grey. The texture was that of sandy clay loam, and the coarse fragment rate is 35 to 60%. The structure type is massive, with a single grain, with a moderate grade, and a horizon name of B.** **Third Horizon:** **Fourth Horizon:**

Table 2. *Texture Determination of Soil Samples*

Your Findings	Class Average or Official Analysis	Explanation for Potential Differences

First Horizon	**First Horizon**	
(_0__ to _5__ inches)	(___ to ___ inches)	
Color ___2___	_____ Color	
Texture __4____	_____ Texture	
Coarse Fragments ___2___	_____ Coarse Fragments	
Structure Type ___1___	_____ Structure Type	
Structure Grade ___3___	_____ Structure Grade	
Horizon Name ___2___	_____ Horizon Name	
Second Horizon	**Second Horizon**	
(___ to ___ inches)	(___ to ___ inches)	
Color __4____	_____ Color	
Texture __4____	_____ Texture	
Coarse Fragments ___3___	_____ Coarse Fragments	
Structure Type ___5___	_____ Structure Type	
Structure Grade __3____	_____ Structure Grade	
Horizon Name ___4___	_____ Horizon Name	
Third Horizon	**Third Horizon**	
(___ to ___ inches)	(___ to ___ inches)	
Color _____	_____ Color	
Texture _____	_____ Texture	
Coarse Fragments _____	_____ Coarse Fragments	
Structure Type _____	_____ Structure Type	
Structure Grade _____	_____ Structure Grade	
Horizon Name _____	_____ Horizon Name	

Fourth Horizon	Fourth Horizon	
(___ to ___ inches)	(___ to ___ inches)	
Color _____	_____ Color	
Texture _____	_____ Texture	
Coarse Fragments _____	_____ Coarse Fragments	
Structure Type _____	_____ Structure Type	
Structure Grade _____	_____ Structure Grade	
Horizon Name _____	_____ Horizon Name	

Analysis of Results

In the end, the soil that was found on top (top soil) was a very dark, greyish color of brown. The soil itself felt a lot like wet, sandy clay, which led me to believe that it consisted of Sandy clay loam, clay loam, or silty clay loam. There was a small range of coarse fragments (15 to 35) as the soil was moderately rocky, with few rocks clumped with the soil. The soil structure was granular, with a moderate grade. The horizon name of the topsoil is also A.

The sub soil layer was very light grey, and almost carried hints of yellow within the heavier clumps. The soil felt like wet, sandy clay, and had a similar texture to the top soil, which consisted of sandy clay loam, clay loam or silty clay loam. There was a medium range of coarse fragments (35 to 60) as there was a large amount of chunks of rocks that was riddled within the chunks of soil. The structure was massive, with a moderate grade. The horizon name of the subsoil is B.

Conclusions

The inferences that I made were more or less on the ball. I was off on the top soil mostly because of the presence of mottles, and I put that the structure grade was low, even when it turned out to actually be high. I was correct about the soil color, however, I was wrong about the soil type, as I put blocky when it was granular.

For the subsoil, I was correct on the texture of the soil, and for the color, however, I got the structure type, and grade wrong. Initially I put that the type was small, and granular, and for the grade I put weak. In reality, the type was massive, and the grade was moderate.

Errors were from my own judgement, as I am premature at the soil identifying field, and so my errors were common novice errors. I have no questions based on my results.