

Cedar Tree Neck Soils Investigation Site Information and Predictions

Site Name: _____

Description of site: _____

Latitude and Longitude (if GPS or Google Earth is available): _____

Make Predictions (Hypotheses):

Texture and Type: What type of soil do you think you will find at this site? Why?

Percolation and Compaction: How well will the soil at your field site drain? How compacted is the soil?

Habitat and Human Impact: What might the soil profile look like? Why?

Cedar Tree Neck Soils Investigation Data Collection Sheet

1.) Soil Sort Observations:

List examples of organic and inorganic materials you found when you sorted your soil sample.

Organic Material	Inorganic Material

2.) Texture Test Results:

Describe how the soil feels (gritty, sticky, slick, other): _____

Describe the particle size (large, small, medium, other): _____

3.) Soil Test Results

	Trial 1	Trial 2	Trial 3	Average
Compaction Test (How far did the pencil go into the ground?)				
Percolation Test (How long did it take for the water to soak into the ground?)				
Soil Temperature (in Fahrenheit)				

On a separate sheet of white paper, follow the directions for the Soil Profile Measurement

Cedar Tree Neck Soils Investigation

Data Analysis and Investigation Summary

Analyze your Data: What does your data tell you?

Draw Conclusions: Was your hypothesis true? Do your results agree with your hypothesis? Summarize what your investigation showed. Accept or reject your hypothesis.

Recommendations/Application:

1. Looking at all the data you have collected so far, what is the most interesting or surprising thing you have noticed?

2. Based on the soil properties at your study site, which location would be the best place to plant a garden? Explain why.

3. List any additional questions you have after doing these activities that you might want to investigate later.

4. What variables might affect the data you gathered through this test? What could you do to make these tests more accurate?

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Test Directions

Texture Test

1. Take a handful of soil from your quadrant and spray it with water until it is damp, but not soaking wet.
2. Rub the soil between your fingers and observe and feel its texture.
 - How does the soil feel? Is it sticky, slippery, or gritty?
 - Do the particles look and feel small, large, or somewhere in between?
 - Does the soil feel most like sand, silt, or clay?
3. Use the Texture-by-Feel Analysis of Soil key (or the chart on the back of it) to figure out what type of soil you have.

Taking the Soil Temperature

1. On your soil thermometer, measure 2.5 inches from the tip and mark the spot with the permanent marker or tape.
2. Insert the soil thermometer in the soil until your mark is just touching the ground. You should try to take readings at this same depth each time.
3. Hold the thermometer in place for two to three minutes in order to get an accurate reading.

Compaction Test

1. Within your quadrant, push the pointy end of a pencil into the soil as far as you can, using normal force.
It is important here that students not use excessive force, such as hammering or stomping the pencil into the soil.
2. Use the other pencil to make a mark on the pencil at the soil level.
3. Pull the pencil out of the soil. Using a ruler, measure the distance from the mark you made to the pencil point. This will tell you how far you were able to push the pencil into the soil.
4. Use an eraser to remove the mark you made on the pencil, and then repeat this test several times in different places within your quadrant.

Percolation Test:

1. Push the can (a soup can with both ends removed) 3 cm into the soil, until it reaches the line encircling the can.
2. Pour water into the can until it reaches the top. Once you start pouring, be sure to fill the can quickly. Don't let the water overflow the can.
3. Immediately use a stopwatch to measure how long it takes for the water to soak completely into the soil.
4. Repeat this test several times in different spots within your quadrant.

Soil Profile Measurements:

1. Take a new soil core for this activity. Leave the sample in the core. Take a photo of the sample.
2. Draw the sample, and include the following in your drawing
 - Measure the depth of each layer. Label each layer O, A, B, C and label the measurement for each.
 - Use colored pencils to show the color of each layer. Use the color chart to find the scientific description of the different colors (label these on your drawing.)