**Soil Testing**

Choose two different soils from the Concordian Campus to test and compare.

All students must record data during the lab.

Wear lab coats and safety glasses and wash hands at the end of the lab.

**Method:**

**Day 1**

1. Write observations of the soil and the area it was collected in your notes.

Look for evidence of soil productivity by noting plants growing in the soil you are testing.

1. Soil texture by feel:

Follow the instructions on the paper located in the lab. Write observations.

1. Percent of water (Percent soil moisture)
2. Measure the mass of a dish. (Day 1)
3. Collect soil, add it to the dish and weigh. (Day 1)
4. Place the soil in the oven to dry the soil. (Day 1)
5. Weigh the soil and dish after it is dry. (Day 2)
6. Use the following formula to calculate the % of water content:

 Loss in mass after drying x 100 = % water content

Massof fresh soil

**Day 2**

1. Soil Texture
2. Grind the dry soil with a mortar and pestle.
3. Weigh each of the soil sieves.
4. Add ground soil to the sieves.
5. Shake the dry soil through the sieves.
6. Weigh each of the sieves with the soil.
7. Calculate the total sand, silt and clay.
8. Calculate the percentages of each particle type.
9. Use the soil texture triangle to classify the texture of the soil.
10. Percent of organic matter/humus content
11. Flame-dry a crucible and cover.
12. After it cools, weigh the empty crucible.
13. Add dry soil to the crucible and weigh.
14. Heat the soil and crucible strongly for at least five minutes over a Bunsen burner until no further change takes place.
15. Allow the crucible to cool.
16. Weigh the burnt soil.
17. Heat the crucible containing the soil again strongly, cool and weigh.
18. Repeat this until no further change in mass occurs.
19. Use the following formula to calculate the % of humus content:

Loss in mass after heating x 100 = % humus content

 Mass of dry soil

1. Soil pH test:
2. Place 20 g of soil into 100 mL beaker.
3. Add 40 mL distilled water and stir well with a glass rod.
4. Allow to stand for 30 minutes with intermittent stirring.
5. Test the water suspension with pH paper. Record the colour. Determine the pH.
6. You may want to use a pH meter or soil meter to verify your result.
7. Nitrogen content:

Use the Nitrogen soil kits to test for nitrogen in the soil.

Follow the instructions in the kit and record the colour.

Determine the amount of nitrogen in the soil.

**Present your report:**

Data Collection: Table with data and observations use table numbers and descriptive titles

Data processing: Calculated data to aid the comparison of the two soils, including any sample calculation examples to show your processing.

Data presentation: Present your processed data finding using graphs, charts etc to aid interpretation.