25.10.20 Soil lab

Format:

- Title: short and sweet
- Purpose: direct, should cover what you intend to do
- Materials: detailed list of what is needed beyond normal lab gear
- Procedure: can be numbered, must include each step
- Data: anything that can be represented by numbers
- Observations: anything that cannot be represented by numbers
- Conclusions/Error analysis: circle back to the purpose and answer your own question

Physical tests:

1. Gather soil samples in special scientific soil gathering cups (red is best) using scientifically approved trowel or soil implement
2. Notice tilth, smell, color and friability (ability to crumble)
3. Bring soil back to elab, clean out soil sieve ("sifter" to Americans)
4. Gently pour sample into the sieve (sifter) and shake horizontally to sort the soil
5. Calculate the mass of each level by subtracting from the tare ("empty" for Americans) weight of each level
6. Calculate the percentage in each level, first by combining all levels for a total, then by ignoring the first "overlayer" or O layer debris (also known as detritis)

Chemical tests:

1. Open a soil test kit and read the directions (these are printed words that explain the process)
2. DeWilde kit process:

   https://www.amazon.com/live/video/0ea771ec274746808b16bf4afb0883b1

   1. take the soil from your lowest (finest) level or a combination of levels and place 2.5 cm (1 inch for Americans) of soil in the larger tube
   2. add distilled water (our sinks are rain water, which is essentially distilled water) to fill the tube
   3. shake for 1 minute
   4. stand upright for 30 minutes until the soil and water separate (should be clear)

pH test:

- using the pipette, draw clear liquid from the test tube and fill to the "2" mark on the small tube
- add 4 drops of pH test solution

- close and shake
- wait 1 minute, read color, compare to color chart

Potassium test:

- using the pipette, draw clear liquid from the test tube and fill to the "2" mark on the small tube
- add 2 drops of potassium test solution
- close and shake
- wait 1 minute, read color, compare to color chart

Phosphorus test:

- using the pipette, draw clear liquid from the test tube and fill to the "2" mark on the small tube
- add 2 drops of phosphorus test solution
- close and shake
- wait 1 minute, read color, compare to color chart

Ammonia Nitrogen test:

- using the pipette, draw clear liquid from the test tube and fill to the "1" mark on the small tube
- add 4 drops of Ammonia activator solution
- close and shake
- add 2 drops of ammonia nitrogen solution
- close and shake
- wait 1 minute, read color, compare to color chart

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