

# Lab Report Template

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**Project 4.2.3 - Soil Buffers**

## **Problem**

This experiment will determine the buffering capacity of sand, loam, and clay. Which one will be the most stable and have the most buffering capacity.

## **Hypothesis**

Sands ph will be the most stable, because I believe it will have the the most buffering capacity. I think sands ph will be more stable than loam, and clay.

## **Materials**

- LabQuest2
- pHSensor
- Buffer solution
- 2 - 250ML Beakers
- Marker
- 3 plastic spoons
- Distilled water
- Rinse bottle
- HCL dropper
- NAOH dropper
- Stir rod
- Sand soil
- Loam soil
- Clay soil
- 4 9 oz plastic cups
- Laboratory tape
- 2 – 50ml beakers

## **Procedures**

1. Get safety equipment (glasses, apron).
2. Get materials.
3. Add 100ml of water to sand, loam, and clay, and then mix.
4. Add 5 drops of acid to the sand, soil, and clay, and mix.
5. Test pH

6. Collect data.
7. Find the change
8. Clean up materials

## Data Collection

Table 1 pH of Different Soils

Soils	pH Before HCL Was Added to Soil	pH After 30 Drops of HCL Was Added to Soil
<b>Sand:</b>	<b>6.80</b>	<b>7.90</b>
<b>Loam:</b>	<b>7.45</b>	<b>7.80</b>
<b>Clay:</b>	<b>7.35</b>	<b>7.90</b>

## Analysis of Results

So by looking at the data that I have collected it shows that sand was actually not the most stable so my prediction was wrong. Sand was actually the worse out of all the soils. Loam was the most stable for us, and clay was the second most stable.

## Conclusions

My prediction was wrong because I said that I believed that sand would be the most stable and it was actually the opposite, because sand was actually the least stable and the n loam was actually the most stable, with clay being the second most stable.