Names: _____

Soil Texture and pH

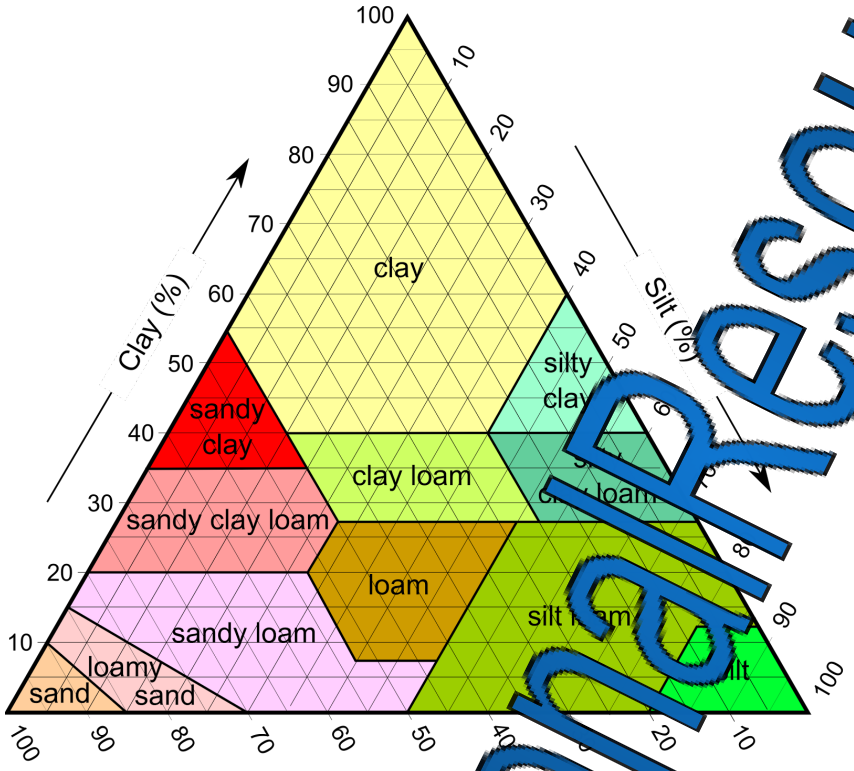
Day One

Fill your graduated cylinder with 25 percent soil.
Add soap solution until your cylinder is filled to 50 percent. A little more is better than a little less.
Insert a stopper into the top of the cylinder.
Shake the cylinder's contents vigorously for 5 minutes.
Use tape to label your cylinder and place it on the back lab table. We will let it sit for a day.

Day Two

- 24 hours has passed and lines between sand, silt and clay should be visible.

1. Use the soil triangle to determine the type of soil that you have.
   a. What type of soil? _____



- **Soil pH Lab**
- Add about 20 grams of soil to a bea
- Add 50 ml of distilled water to the soil
- Use the mixing rod to mix the co ents til you no longer see chunks of soil.
- Let it settle for another for a few mi ute

2. Use the pH strips to deter e the p levels of the solution.
   a. What is the pH lev of yo ? _____
3. Why would knowing w at type o soil you have be important for farmers?

4. Which soil type wou dra water quicker? Sandy loam, loam, or silt loam?

5. Which soil pe wou retai water better? Clay, silty clay, clay loam?

6. Why would knowing H le be important for farmers?

Teacher instructions and reflections

- My students first read this webpage on soil and then we discussed their reading and some of the pictures found on it.
    - http://earthscience.xyz/Soil
- Materials: mixing rod, very clear graduated cylinders, soap solution, rubber stoppers that fit into your graduated cylinders, soil (preferably found in different locations), pH strips or some other pH level tester
- Soap Solution: Mix 1 gallon of water, 1/4 tsp powdered dishwashing detergent, 1/4 cup baking soda.
- My students do this lab with their table groups.
- Students have to shake the “mud” vigorously and until they really get the particles to break apart. If they don’t it tends not to work as well. Air bubbles should be completely removed and the soil should be completely broken down.
- Use a sandy type of soil. I used my garden soil and really only got two layers to settle. Some had three layers, but ideally you want a layer of sand, silt and clay. My soil tended to show a huge layer of silt a small layer of clay and only one group had a layer of identifiable sand.
- Make sure students use rubber stoppers that are bigger than the cylinder hole. I had 4 rubber stoppers get stuck.
- I wasn’t impressed with my cylinders. They are the type to have a lip, so that it is easier to pour a liquid out. This allowed some mud to escape when students were shaking it. I will be purchasing stoppers next year that don’t have that lip.