Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period\_\_\_\_\_\_\_\_\_\_\_\_

Nutrient Test Lab

In 4 groups you will be testing for levels of pH, Nitrogen, Potassium and Phosphorus.

Each group will be testing for a particular nutrient. At the end we will compare the results of each of the soils. The soils are the same ones we textured. We will see if the texture relates to the nutrients that the soil has. Depending on the test that your group will be doing read the instructions below. All but the pH will take the majority of the class.

Fill out the chart below for the one that your group is testing. As a class we will fill it out after everyone has finished their tests

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample Number | Texture | pH | Nitrogen | Phosphorus  | Potassium  |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |

Based on the results answer the following questions

1. Which soil would be the best for a garden and why
2. Which soil would be the worst for a garden and why
3. What soil has the highest pH
4. What soil has the finest texture

There are a lot of inexpensive soils testing kits available the one that I use is the rapitest kit. It works well and is cheap. <http://www.carolina.com/product/665404.do?s_cid=ppc_gl_products&gclid=CMTH9KbC8a4CFeYbQgoduxd5KA>

I would suggest for your samples rather than using the comparator to hold the water use small test tubes. This will speed the process up. Depending on the test kit you have this can be modified.

**Preparing Your Soil Samples**

For lawns, annuals or house plants, take the soil sample from about 2-3" below the surface. For perennials especially shrubs, vegetables and fruit, the sample should be from 4" deep. Avoid touching the soil with your hands. Test different areas of your soil, as it may differ according to past cultivation, underlying soil differences or a localized condition. It is preferable to make individual tests on several samples from different areas, than to mix the samples together. Place your soil sample into a clean container. Break the sample up with the trowel or spoon and allow it to dry out naturally. This is not essential, however it makes working with the sample easier. Remove any small stones, organic material such as grass, weeds or roots and hard particles of lime. Then crumble the sample finely and mix it thoroughly.

**Testing For Soil pH Only**

**1.** Remove the cap from the green comparator and take out the package of capsules. Make sure the color chart (film) is in place.
**2.** Fill test chamber to soil fill line with soil sample.
**3.** Holding the capsule horizontally over the test chamber, carefully separate the two halves of the green capsule and pour powder into the test chamber.
**4.** Using the dropper provided, add water (preferably distilled) to water fill line.
**5.** Fit the cap onto comparator, making sure it is seated properly and caps tightly. Shake thoroughly.
**6.** Allow soil to settle and color to develop for about a minute.
**7.** Compare color of solution against pH chart. For best results allow daylight (not direct sunlight) to illuminate the solution. Refer to the information that follows for adjusting soil pH, if required, as well as the pH Preference List enclosed.

**Testing For N, P, & K Only**

**1.** Fill a clean container with 1 cup of soil and 5 cups of water. (Larger or smaller quantities may be tested as long as the 1 part soil to 5 parts water proportions are maintained) For best results use bottled or distilled water.
**2.** Thoroughly shake or stir the soil and water together for at least one minute; then allow the mixture to stand undisturbed until it settles (30 minutes to 24 hours, dependent on soil). A fine clay soil will take much longer to settle out than a coarse sandy soil. The clarity of the solution will also vary, the clearer the better, however cloudiness will not affect the accuracy of the test.
**3.** Select the appropriate comparator for the test you wish to make. Remove the cap and take out the capsules which should be the same color as the cap. Make sure the color chart (film) is in place. Do not interchange color charts between comparators.
**4.** Using the dropper provided, fill the test and reference chambers to the fill mark on the chart with solution from your soil sample. Avoid disturbing the sediment. Transfer only liquid.
**5.** Remove one of the appropriate colored capsules from its poly bag. Holding the capsule horizontally over the test chamber, carefully separate the two halves and pour the powder into the test chamber.
**6.** Fit the cap on the comparator, making sure it is seated properly and caps tightly. Shake thoroughly.
**7.** Allow color to develop in the test chamber for 10 minutes.
**8.** Compare the color of the solution in the test chamber to the color chart. For best results, allow daylight (not direct sunlight) to illuminate the solution. Judge colors, if necessary, and note your results for future reference. Follow the same easy steps for each of the N, P and K tests. When you have the test results you need, refer to the information below.