Name_____Block_____

pH Analysis Lab

AKA The Dip Strip Lab

(Adapted from ExploreLearning.com)

OVERVIEW AND PURPOSE

Have you ever heard a product advertised as "pH balanced"? **The abbreviation "pH" is short for "power of hydrogen."** It is a measure of hydrogen ion concentration. The pH scale is used to measure whether a substance is an acid (acidic), a base (alkaline), or neutral.

The pH scale ranges from 0 to 14. A substance with a pH of 7, such as pure water, is neutral. Substances with a pH between 0 and 7 are acids. Substances with a pH between 7 and 14 are bases.

Plants depend on soil having the right pH level for proper growth, and our bodies must maintain the proper pH level to function properly. In addition, scientists and engineers use pH information when creating batteries, soft drinks, detergents, medicine, and more.

In this activity, you will use pH indicator strips (pH Hydrion 0-14 paper) to determine the pH level of various common substances and a few "mystery" substances as well.

MATERIALS

Various squeeze bottles of common substances
A few squeeze bottles of "mystery" substances
container of pH indicator strips (pH Hydrion 1-12 will suffice)
paper towels

PROCEDURE

1. For each substance, **PREDICT** the pH of that substance and write it on the data table.
2. Open the pH test paper tube and remove 1 new pH indicator strip. Put the remaining strips back into the vial and close tightly. **DO NOT LEAVE STRIPS OPEN & EXPOSED TO THE MOIST ENVIRONMENT. IT WILL RUIN THEM.**
3. Carefully squeeze 5 drops of substance onto the pH test strip.
4. **Immediately** compare the color at the end of the strip with the color chart on the tube.
5. Write down the pH number on the data table for that substance tested.
6. In the 4^{th} column mark acid, alkaline (base), or neutral for that substance.
7. Repeat these procedures for each substance as directed by the instructor.
8. When finished all substances, put away safety goggles and fold away apron.
9. On a separate sheet of paper, draw a diagram of the pH scale from 0 to 14. Use arrows or labels to show where the substances you tested fall onto this scale

pH TEST RESULTS TABLE (0 to 14 *or* 1 to 12 pH indicator paper)

Substance	pH Test Strip Result	Is it an Acid, Base or Neutral?
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		

ANALYSIS

1. On the pH color chart (side of tube), do colors in the red-orange family indicate that the substance is an acid or a base (alkaline)?

2. On the pH color chart (side of tube), do colors in the blue-green family indicate that the substance is an acid or a base (alkaline)?

3. Acids have a pH reading that ranges between _____ and _____.

4. Bases (alkalines) have a pH reading that ranges between _____ and _____.

5. Substances with a pH reading of 7 are considered _____.

6. Draw a diagram of the pH scale from 0 to 14. Use arrows and labels to show where the substances you tested fall on this scale.