

Names: \_\_\_\_\_

Team Number: \_\_\_\_\_

### pH Lab Activity

**Total Points Possible: 150-points**

**Objective:** You will work with a partner to predict and then determine the pH of certain household substances.

#### Pre-Lab Questions (50-points)

Write answers to pre-lab questions on a **separate sheet of paper**.

- 1) Where should I be writing the answer to this question?
- 2) How many points is this lab worth?
- 3) What will happen if you eat or taste any lab samples?
- 4) What determines what station you start at?
- 5) Before you test for pH, what should you do?
- 6) Where do you get pH strips?
- 7) Do you have an unlimited supply of pH strips?
- 8) Where are pH strip indicator color charts located?
- 9) Where should used pH strips go?
- 10) When are post-lab questions due?

#### Activity (50-points)

*Do not eat or taste any of the lab samples! Doing so will result in a zero for the lab.*

*The only **exception** is testing the pH of your saliva. You only need to touch the pH paper to your tongue for a second!*

**Your team number equals the station number you start with.**

*If one team is already working at a station, WAIT before moving on to that station. Do **NOT** interrupt other teams.*

- 1) Go to the station number assigned to you first (team number is your first station number)
- 2) Record the substance number in Table 1 at the end of this lab activity. Example: Station 3 is Vinegar. In the table, write vinegar in the row labeled Station 3.
- 3) Hypothesize the pH for this substance. In the *Predicted pH* column write your hypothesized pH. Hint: Use your notes to take make your best guess---acids tend to be sour, bases tend to be bitter and slippery, etc.
- 4) Move to the next stations in sequential order (1, 2, 3, ...) until you have guessed the pH of all substances (12 stations, 12 substances).
- 5) See Ms. Epley to collect fresh pH paper. You will be given a limited amount of pH paper--make sure to conserve and do not waste!
- 6) Divide your pH paper into 12 equal segments.
- 7) Go back to the first lab station you visited.
- 8) Dip a piece of pH paper briefly into the solution and remove. Recap solution--DO NOT LEAVE SUBSTANCES UNCAPPED.
- 9) Compare the color of the wet paper with the pH color chart located in the center of the laboratory bench.
- 10) Write down the pH number that corresponds to the color of the pH strip in Table 1 under the column *Actual pH*.
- 11) Based on this pH, is this substance an acid, a base, or is it neutral? Answer this question in

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the column labeled *Acid/Base*.

12) Move to the next stations in sequential order (1, 2, 3, ...) until you have determined the pH of all substances.

**13) Throw used pH strips away in the cups located in the center of the lab benches.**

**Throwing used pH strips in the sinks will result in a zero for the lab.**

14) Before you are dismissed from the lab, a lab check will be done to ensure the lab is clean.

**Table 1. Substances tested for pH.**

Station	Substance	Predicted pH	Actual pH	Acid/Base
1				
2				
3	Vinegar			
4				
5				
6				
7				
8				
9				
10				
11				
12				

### Post-Lab Questions (50-points)

Write the answers to post-lab questions on the same paper you wrote the answers to pre-lab questions.

1) Stomach acid has a pH of 2. Looking at the actual pH of Mylanta and hypothesize how it reacts with stomach acid to calm a sour stomach.

2) Sodas have small amounts of phosphoric acid (used to kill bacteria and prohibit contamination during transport). How could this acid affect the enamel of our teeth?

Identify the following as a acid or base.

3) pH 3

4) pH 8

5) pH 1