Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_

**pH Lab**

Measuring pH indicates whether a solution is an acid or a base. A pH less than 7 indicates an acid and a pH more than 7 indicates a base. Acids and bases are chemical opposites but if a solution's pH is 7, it is neutral which means it is neither an acid nor a base and has an equal concentration of hydrogen and hydroxide ions.

**Performance Objectives:**

* Students will be able to construct a pH scale
* Define pH and understand that it is a relative measurement

**Materials:**

* 4, 100mL beakers
* Water
* Vinegar
* Soda
* Bleach
* pH indicator paper

**Procedures:**

1. Hypothesize the pH of each of the solutions in the table below. Record your hypothesis for each under the column ‘Hypothetical pH”.
2. Dip the tip of a strip of pH indicator paper into each beaker to test the pH of each known solution. Use a different strip of pH indicator paper for each solution. Use the color scale on the indicator paper package to estimate the pH of each solution.
3. Record the actual pH of each solution in the table below.

|  |  |  |
| --- | --- | --- |
| **Table 1. pH of solutions** | | |
| **Solutions** | **Hypothetical pH** | **pH** |
| Water |  |  |
| Vinegar |  |  |
| Soda |  |  |
| Bleach |  |  |

1. Throw away your used pH strips and complete the post-lab questions.

**Post-Lab Questions:**

1. Label the pH scale below using the ranges for acids, bases, and neutrals. Then label the solutions you tested on the scale below.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

0 7 14

**pH scale**

1. Based off the data you collected, predict the pH of the following solutions.

* Tomato juice
* Detergent
* Orange juice
* Milk
* Saliva
* Toothpaste

|  |  |  |
| --- | --- | --- |
| Acidic | Neutral | Basic |
|  |  |  |

1. Explain your reasoning behind classifying the above solutions as acidic, basic or neutral.