

**Section 6.9: Conduct an Investigation**  
**Measuring the pH of Household Products (p.163 - 165)**

You may work in groups but each student is required to complete and hand in their own lab report. You must complete your lab report on the pages provided by your teacher.

Acids and bases can be distinguished from one another by the colours they turn certain indicators. The pH paper you will use in this investigation is a universal indicator. It contains several indicators, which turn different colours in solutions with different pH values. You will also use another indicator (red cabbage juice) that you will develop a colour scale for.

**Question:** \_\_\_\_\_  
(Do not answer this question, simply copy it down.)

**Materials:** *Record (in point form) the items used during the lab.*

**Procedure:** *Follow the procedure below for this investigation.*

- 1) Choose 6 different household products you will be using for this lab. Try and choose different kinds of substances, so you have a wide-range of pHs.
- 2) Fill in your data table (next page) with the 6 household products and **make a prediction** for each household product. Will it be an acid, a base or neutral?
- 3) In groups of 3 or 4, you will move from station to station to test your different household products.

At each station follow these instructions:

- 4) Pour ~~about~~ 20 mL of your product into a beaker.

8) Complete Steps 4 - 7 for each of the 6 household products you have selected.

[illegible]

**Analysis:** *Answer the following questions in complete sentences.*

1) Which solutions were

- a) acidic? \_\_\_\_\_
- b) basic? \_\_\_\_\_
- c) neutral? \_\_\_\_\_

2) Which solution was the most

- a) acidic? \_\_\_\_\_
- b) basic? \_\_\_\_\_

**Apply and Extend:** *Answer the following questions in complete sentences.*

3) Samples of water were taken from two swimming pools. One sample had a pH of 4. The other sample had a pH of 5. Which one is more acidic?

\_\_\_\_\_

4) Seawater has a pH of 8.3 - is it an acid or a base?

\_\_\_\_\_

5) Hydrochloric Acid (HCl) is found in your stomach and has a pH between 1 and 2. Is it an acid or a base?

\_\_\_\_\_

**Conclusion:** *Answer the following questions in complete sentences.*

6) What is an acidic solution?

\_\_\_\_\_

7) What is a basic solution?

\_\_\_\_\_

8) Define what a neutral solution is and give an example.

\_\_\_\_\_

\_\_\_\_\_

9) Were most of your samples acids or bases?

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10) Did you have any surprises in your predictions about acids and bases?

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