

Name: _____ Period: _____ 7th Grade Science
Lab#4: Identifying Acids and Bases Prof. Bulalang

Goal: Demonstrate that the pH scale (0-14) is used to measure acidity and classify substances or solutions as acidic, basic, or neutral

Background:

Many common household products are either acids or bases. Today you will be utilizing litmus paper to determine if twelve common substances are acids, bases, or neutral.

Materials: Baking powder, baking soda, vinegar, milk, bleach, dish detergent, soda, coffee, apple juice, antacids dissolved in water, ketchup, laundry detergent, litmus paper.

Safety precaution: Please wear goggles and aprons to prevent any splashing. Although these are common household items, they can be eye irritants. Some items may stain clothing.

Procedure: There are 12 substances in your table. You will dip HALF of a strip of red litmus paper and HALF of a strip of blue litmus paper into each substance and record the results. After you have completed your testing, please discard the used litmus papers into the provided containers.

Substance	Blue Litmus Paper	Red Litmus Paper
1. Baking Powder		
2. Baking Soda		
3. Vinegar		
4. Milk		
5. Bleach		
6. Dish Detergent		
7. Soda		
8. Apple Juice		
9. Anatacids dissolved in water		
10. Ketchup		
11. Laundry Detergent		
12. Coffee		

Analysis:

1. What is the difference between a strong acid or base and a weak acid or base?
2. What is litmus paper?
3. Can we determine if a substance is a strong or weak acid or base using litmus paper? Explain.
4. What are some properties of acids and bases?
5. How can you apply this knowledge of different household pH in real life?

PART B

Demonstrate that the pH scale (0-14) is used to measure acidity and classify substances or solutions as acidic, basic, or neutral

Background:

Common household products that are acids or bases can be further tested to determine their exact pH. Today you will be utilizing pH paper to measure the pH of twelve common substances.

Materials: Baking powder, baking soda, vinegar, milk, pineapple juice, dish detergent, soda, bubble solution, apple juice, antacids dissolved in water, ketchup, and laundry detergent.

Safety precaution: Please wear goggles and aprons to prevent any splashing. Although these are common household items, they can be eye irritants. Some items may stain clothing.

Procedure: There are two solutions at six different stations around the lab. At each station you will dip one strip of pH paper into each solution and record the results. After you have completed your testing, please discard the used pH papers into the provided containers.

For each of the following substances, please write down the measured pH based on the pH paper chart.

Substance	pH paper Reading
1. Baking Powder	
2. Baking Soda	
3. Vinegar	
4. Milk	
5. Bleach	
6. Dish Detergent	
7. Soda	
8. Apple Juice	
9. Antacids dissolved in water	
10. Ketchup	
11. Laundry Detergent	
12. Coffee	

Analysis:

1. What is the pH scale? How are acids, bases and neutral substances numerically classified on this scale?
2. Would pH testing be a qualitative or quantitative test? Would litmus testing be a qualitative or quantitative test? Why?
3. When would a solution be neutral?
4. On the space below draw a replica of the pH scale. Mark all twelve substances on this pH scale and label appropriately.

