Acids and Bases Hands-on Lab

Today you will test various substances and determine if they are acids or bases. You will conduct two tests on each substance: pH paper and litmus tests.

Pre-Lab Questions:

1. What does pH mean?

2. What are the pH ranges for acids, bases and neutral substances?

3. What are the different properties of acids, bases and neutral substances?

4. Acids give off what ions when in water?

5. Bases give off what ions when in water?

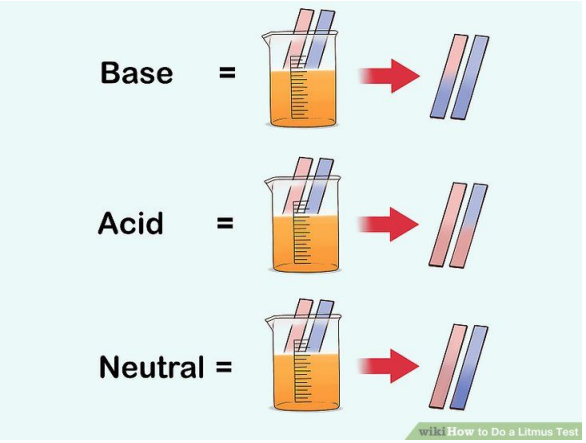
Hypothesis: Develop an "If....then..." hypothesis for this lab

Materials:

1. pH strips
2. Litmus test strips
3. Suggested substances to test:
    a. Tap water
    b. Dish soap
    c. Lemon juice
    d. Laundry detergent
    e. Vinegar
    f. Coffee
    g. Soda
    h. Salt water
    i. Milk
    j. Shampoo
    k. Mouth wash
    l. Human saliva
    m. Bleach
    n. Antacid
4. Plastic cups to test substances
5. Sharpie to label plastic cups
6. Paper towels

Procedure:

1. Label the plastic cups for each substance to be tested
2. Fill the cup with a small amount; just enough for the tests
3. Fill in the data table below with the substance you will test and your prediction. You may test more substances, just add rows to the data table.
4. Conduct the litmus test for each substance. Use a new strip for each substance and repeat the process. Record your results on the data table; acid, base or neutral.



5. Conduct the pH test for each substance. Use a new strip for each substance and repeat the process. Record your results on the data table; acid, base or neutral.
6. In the last column of your data table mark if your initial prediction was correct.

Data Table:

Substance	Prediction: Acid, Base or Neutral?	Litmus Test: Acid, Base or Neutral?	pH Paper: pH Number	Prediction Correct: Yes or No?

Post-Lab Questions:

1. Why do acids and bases have different tastes? Either sour or bitter.

2. What are three real world applications of pH and litmus tests?

3. What two organs maintain pH balance in the human body? How do they do this?

4. What is respiratory and metabolic acidosis? What are the symptoms and treatments?

5. What is respiratory and metabolic alkalosis? What are the symptoms and treatments?

6. Create your own pH scale using the substances that you tested in this lab.