

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Acid/Base Indicators

Objective: To use a variety of indicators to approximate the pH of some common acids and bases.

### Procedure:

1. Break off a few small pieces of red cabbage and place inside a small beaker filled with water. Place the beaker on a hot plate. Heat it until it begins to boil and the cabbage juice has leached from the cabbage into solution.
2. While it is heating, obtain seven test tubes and place in a test tube rack.
3. When the cabbage juice has boiled, remove it from the hot plate and place it on the table top for two minutes.
4. Next, prepare an ice bath in a larger beaker and place your cabbage juice indicator beaker inside it.
5. When it has cooled, filter the solution through a filter paper placed inside a funnel and resting in an Erlenmeyer flask.
6. Obtain four test tubes and place in a test tube rack.
7. Fill each test tube with one of the following substances until it is one quarter full:
  - a. vinegar
  - b. drain cleaner
  - c. pure water
  - d. soap
  - e. baking soda
  - f. ammonia
  - g. seltzer
8. Test the substance in the first test tube with both red and blue litmus paper. Color your table appropriately. Throw out the pieces of paper when done.
9. Add a few drops of **cabbage juice indicator** to the first test tube. Color your table appropriately.
10. Add a few drops of **phenolphthalein** to the second test tube. Color your table appropriately.
11. Add a few drops of **bromothymol blue** to the third test tube. Color your table appropriately.
12. Add a few drops of **Congo red** to the fourth test tube. Color your table appropriately.
13. Clean out the test tubes and repeat steps 7-12 for the remaining substances.