

## Red Cabbage pH Activity

### Objectives

The purpose of this lab is to practice pipetting and practice setting up a lab notebook and recording results. Powdered materials could also be tested in order to gain experience working with the scientific scale.

### Materials

- Red cabbage pH solution
- Test Liquids of various pH, such as
  - o Dishwashing detergent
  - o Baking soda solution
  - o Lemon juice
  - o Vinegar
  - o Ammonia
  - o Washing soda solution
  - o Cola
  - o Cream of Tartar
  - o Antacid

### Equipment/Labware

- Test tubes
- Micropipettes
- Pipet tips

Red cabbage gets its color from a pigment called anthocyanin. Anthocyanin is sensitive to pH and will change colors depending on how acid or basic a solution is. Acidic solutions are red, neutral are purple, and basic are greenish.

You will be adding measured amounts of test liquids to your red cabbage pH liquid to see what the color changes are. Set up a table in your notebook so you can record the type of test liquid added, the amount added, and the resulting color.

1. For each test liquid, measure out 1 ml of red cabbage solution into a test tube.
2. Add a small amount of test liquid, swirl the test tube and check for a color change. Continue to add test liquid until you get a noticeable change. Record the amount you added and the resulting color in the table you set up.

### Red Cabbage pH Solution Recipe:

1. Chop up a red cabbage into very small pieces (or use a blender) until you have about 2 cups of chopped cabbage. Place in a heat-safe pot or bowl.
2. Add about 2 cups of boiling distilled water to the cabbage.
3. Let the color develop for at least 10 minutes (or cover and let stand overnight). Let the solution cool until it is safe to handle.
4. Filter liquid through coffee filters to remove all plant matter.
5. As each cabbage is different, the instructor may want to test the different liquids and dilute them to ensure students get to work with a range of pHs.