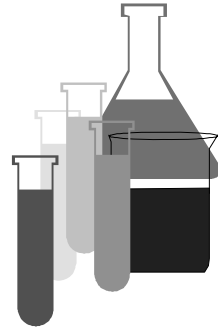


Natural pH Tester

Materials

Red cabbage
Vinegar
Ammonia



Procedure

1. Cut the cabbage into pieces and boil it in about twice as much water as leaves. Turn off the heat and allow to soak 20 minutes.
2. After at least 20 minutes, strain out the cabbage and save the liquid. Set aside to cool.
3. Once the cabbage juice has cooled, you can use it as a natural pH tester. First, mix a small amount of the juice with a small amount of vinegar, a known acid. What color does the juice turn? Have children make careful note of this, perhaps recording the results on paper.
4. Now mix a small amount of the juice with a small amount of ammonia, a known base (alkaline substance). Again, note the color change.
5. Use the established color change patterns to test other liquids in the same way.
6. Attempt to neutralize the pH in the sample by adding equal parts vinegar and ammonia. Does this work? Try adding more of one or the other.

Acids are substances that contain high amounts of hydrogen ions, and they score below a 7 (which is neutral, like pure water) on the pH scale, which ranges from 0 to 14. Bases are substances that contain high amounts of hydroxyl ions and score above a 7 on the pH scale. For example, lemon juice is a pretty strong acid at a pH of about 2, and milk of magnesia is a moderate base (or alkaline) at a pH of about 10.

Note: Violets are also natural indicators. Try putting a blue violet in a small glass of vinegar and wait about 10 minutes. The violet turns red! “Roses are red, violets are... red?”

