KITCHEN ACADEMY

Red Cabbage pH Indicator Experiment

This fun and safe science experiment uses red cabbage juice as a natural pH indicator to test common household substances. Red cabbage contains anthocyanins, pigments that change colour depending on the pH of the solution, making it a simple and visual way to explore acids and alkalis.

Equipment & Ingredients
For the indicator solution:

- ¼ red cabbage (roughly 200g)
- 500ml water
- Blender or grater (optional, to speed up the process)
- Saucepan and sieve (or fine-mesh strainer)
- Clear glasses or small transparent containers (one for each test sample)

Household items to test:
Acidic:

- White vinegar
- Lemon or lime juice
- Clear soda (e.g., lemonade)
- Neutral:
- Tap water

Alkaline:

- Bicarbonate of soda mixed with water
- Clear washing-up liquid diluted with water
- Clear antacid tablets dissolved in water

🥣 Method

1. Make the cabbage indicator:
   - Chop the red cabbage into small pieces or shred it using a grater.
   - Place it in a saucepan with 500ml of water.
   - Bring to a boil, then reduce the heat and simmer for 10 minutes.
   - Remove from the heat and let it cool for a few minutes.
   - Strain the liquid through a sieve into a jug or bowl.
   - You should have a deep purple liquid, which is your pH indicator.

2. Prepare your test samples:
   - Pour a small amount of cabbage indicator into several clear glasses or containers.
   - Add a teaspoon or a few drops of each household item into separate glasses.
   - Stir gently and observe the colour changes.

🌈 Colour Guide

The cabbage indicator will change colour depending on the pH of the substance:

- Pink / Red → Acidic (pH 1–4)
- Purple → Neutral (pH 7)
- Blue / Green → Weakly alkaline (pH 8–10)
- Yellow / Pale green → Strongly alkaline (pH 11–14)

🔥 Experiment Tips

- If you want to create a pH scale, line up the glasses from most acidic to most alkaline to visually demonstrate the colour gradient.
- For more accurate testing, use pH test strips or a pH meter to compare the results.
- You can freeze leftover cabbage indicator in ice cube trays for future experiments