Candy Chemistry

Best for Ages	Workspace	Is electricity required?
6+	Flat indoor surface	Yes, gas or electric stovetop/kettle is needed

Description

Bring the Hershey's Lab into your home with this fun experiment where you learn about acids and bases using candy and items you can find in your house! You will make your own red cabbage indicator solution, test ingredients, and journal your results! **Adult supervision required.**

Materials

- Small head of red cabbage
- Grater
- Two pots
- Water
- Strainer
- Small, clear cups (1 for each item being tested)
- Amazeum YOU journal or paper and pen
- Dropper or small spoon
- Household items to test: 3 or more: fruit juice, vinegar, baking soda, candy, lemon juice, milk, etc.

Concepts Explored

- Acids and Bases
- Scientific Terminology

What to Do

1. First, make the red cabbage solution. Grate or chop the entire head of red cabbage and place in a pot. Pour in enough boiling water to cover the cabbage. Turn off heat source.
2. Stir cabbage occasionally and steep until it is at room temperature. Don't worry - if it smells funky, you're doing it right!
3. Place the strainer over the second pot. Pour the cabbage into the strainer. Press down on the cabbage with a spoon to squeeze out the liquid. The colorful liquid is your indicator solution!
4. Use the solution to test the items and candy. For this indicator, the acidic (sour) foods will turn red and basic (bitter) foods will turn blue. Record your predictions in your journal. Place one item per small cup. If using candy, remove the wrapper, place candy in the cup and fill halfway with water. You may want to melt or dissolve the candy using hot water.
5. Use the dropper to add a few drops of the cabbage solution into the first cup. Continue adding drops until the color changes. Repeat for each item.
6. Observe the color change and write your results in your journal.

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Troubleshooting Tips

- Is your solution not changing color? Keep adding more of the cabbage solution and stir until it change.
- Do not use bleach for this activity. Do not mix more than one test item with the cabbage solution. Mixing some household materials together can result in a toxic solution.
- Don't have a grater or a strainer? Use a knife to chop cabbage into small pieces and use cheesecloth to strain.

What other household items could you test?

What surprised you about this experiment?

What other foods taste sour or bitter?

What is Happening?

- The **red cabbage solution** contains a pigment that turns red when mixed with **acids** and turns blue when mixed with **bases**. A **neutral** substance turns the solution purple. Acids taste sour and bases have a bitter taste. In the Hershey's Lab, scientists get to taste test black licorice, Ice Breakers, and cocoa nibs to determine whether they are more basic or acidic. Give this a try at home with any candy you may have!
- **Scientific terminology** can help you understand experiments and learning the terms is a useful skill. A scientist will make a hypothesis (educated guess), conduct an experiment, and will compare and contrast the results. Discuss how you used these terms in today's experiment.

Taking it Forward

- Connecting this activity to the real world:

  Do a food and candy taste test with what you have around your house. Predict which foods are more acidic (sour) or basic (bitter) and write your predictions and results in your Amazeum YOU journal.

- If you like this activity, you'll like these Amazeum YOU experiments. Don't forget to document your results in your journal.
  - Fluffy Slime
  - Fizzy Fun