



# LEARNING ABOUT ACIDS & BASES

In this experiment kids will learn that *Acids and Bases* isn't the name of a metal band



Most kids are familiar with the sour or tangy taste of lemon juice, and have seen a cake being made with baking soda. What they probably don't know is that they've already had their first chemistry lesson in acids and bases!



In this experiment kids will learn whether certain liquids are acids or bases by using cabbage juice as an indicator. This will take some adult supervision and care for younger kids, but they'll be excited to see the color-changing effect of acids and bases in this exploration. They'll probably be relieved to know they don't have to eat the cabbage once the project is finished.

## GATHER THIS:

- Shredded red cabbage
- Clear cups or jars
- Lemon juice or vinegar
- Eyedropper or small spoon
- Baking soda
- Hot water

## THEN DO THIS:

1. Put the cabbage in a pot or bowl and pour hot water to cover. Let it sit for at least 30 minutes for the color to seep into the water.
2. Prepare your acid: Mix 1/2 cup of lemon juice or vinegar with 1-1/2 cups of water and set aside.
3. Prepare your base: Mix 1/2 tablespoon of baking soda with 1 cup of water and set aside.
4. Pour the cabbage water into two cups or jars.
5. Using the eye dropper, place a few drops of the lemon juice or vinegar solution in one cup, and a few drops of the baking soda solution into the other cup.
6. Watch what happens to the color of the cabbage juice!

## ASK THIS:

- What did you notice when you added the acid or base to the cabbage water?
- What happens if you add acid and base solutions to the cabbage juice?
- What happens if you add more of each solution to each cup?

## WHAT IS HAPPENING?

The cabbage juice has lots of natural chemicals called anthocyanins, that occur in many foods like strawberries, blackberries and oranges. Anthocyanins change color when mixed with bases or acids. If you add both in appropriate amounts, they neutralize one another and the solution returns to its original purple.

## WHAT THIS TEACHES:

Skills: Measurement, observation, scientific method  
Themes: Chemistry, reactions, biological diversity