

Are you looking for something to do to keep your brain active and engaged? We're here to help with Science at Home! You can conduct these fun science experiments using commonly found items. You can also visit us at the Museum's [Science at Home](#) page for additional resources.

## Red Cabbage pH Indicator



### Materials:

- 1 cup red cabbage leaves, torn into 2"x2" pieces
- Microwave
- 4-cup microwavable glass measuring cup
- 2 cups water
- Slotted spoon
- 2-cup plastic or glass container with lid

### What We've Learned

The measurement used to determine if a liquid is an acid or a base is called pH. Acids and bases can be strong or weak, depending on how far away from "neutral" they are on the pH scale. To determine the pH of a liquid, a pH indicator solution is used. The pigments (*anthocyanins*) that give red cabbage leaves their color can be used as pH indicators because they change color when exposed to different acids and bases.



### Instructions:

- Put 2 cups of water in a 4-cup microwavable glass measuring cup.
- Microwave the water on high power until just boiling. Be very careful when removing the measuring cup from the microwave.
- Add 1 cup of torn cabbage leaves to the hot water and make sure all the pieces are submerged.
- Allow cabbage to soak in the hot water for 15–30 minutes. Use a slotted spoon to remove and discard the cabbage pieces.
- Carefully pour the remaining liquid into a plastic or glass container. The liquid is now ready to be used as a pH indicator solution. Keep refrigerated until use. Can be stored in the refrigerator for up to one week.
- As a family, come up with a list of household liquids to test (*e.g. lemon juice, vinegar, baking soda dissolved in water, soap, milk, etc.*). To test a liquid's pH, place 1 tablespoon of the Red Cabbage pH Indicator Solution into a small white or clear cup. What color is it?
- Now add 1 tablespoon of the liquid to be tested to the cup. Did a color change happen? Use the color chart above to estimate the pH of the liquid you tested.
- To test a new liquid, empty the cup, rinse it with water and repeat **Step 6**.

### Having Fun?

We want to see! Tag [@naturalsciences](#) on social media, so we can see you and your loved ones enjoying our Science at Home experiments.