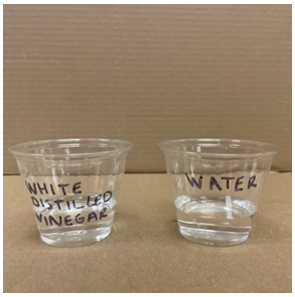
Air Quality and Acid Rain Activity Guide
Environmental Science Camp

What you need

- Two pieces of chalk containing calcium carbonate
- One cup of with water
- One cup of white distilled vinegar
- Optional: One-fourth measuring cup
- Optional: Permanent marker

Preparation

Step 1. Gather materials.



Step 2. Pour approximately 2 fluid ounces, or one-fourth of a cup, of water into a cup. Repeat with vinegar. Optional: Label the contents of each cup with permanent marker.

Step 3. Make a prediction about how a piece of chalk will react in a cup of vinegar and a cup of water. Then, place one piece of chalk in each cup for at least ten minutes.

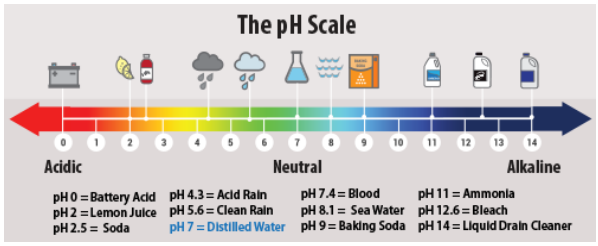
Activity modified from *Experiment 9 Observing The Influence Of Acid Rain On Marble And Limestone* in *Learning About Acid Rain A Teacher's Guide For Grades 6 Through 8* from the Environmental Protection Agency.

What to do

Observe what happens when you place a piece of chalk in the cups containing water and vinegar. What happens to each piece of chalk? How does this compare to your prediction?

What is happening?

A pH scale goes from zero to fourteen and is used to measure if a chemical is acidic, basic (also known as alkaline), or neutral. A chemical with a pH of seven is neutral. A chemical with a pH below seven is acidic. A chemical with a pH above seven is basic. Acids like white distilled vinegar can react with and dissolve materials like chalk containing calcium carbonate. Air pollution can cause acid rain. Acid rain can harm the environment and damage materials that contain calcium carbonate like limestone buildings.



A pH scale. Acid rain has a pH of 4.3. Image from the Environmental Protection Agency.