



Curiosity Guide #605

Acids and Bases

Accompanies Curious Crew, Season 6, Episode 5 (#605)

Antacid Bubbles

Investigation #8

Description

Plop, Plop! Fizz, Fizz! Oh, what a relief it is!

Materials

- 3 similar glasses
- Spoon
- 3 antacid tablets
- Measuring cup
- Water

Procedure

- 1) Fill one glass with 1 cup vinegar and 1 cup water.
- 2) Fill the second glass with $\frac{1}{2}$ cup vinegar and $1\frac{1}{2}$ cups water.
- 3) Fill the third glass with $\frac{1}{4}$ cup vinegar and $1\frac{3}{4}$ cups water.
- 4) Stir each mixture with a spoon.
- 5) Place an antacid tablet in each glass.
- 6) What do you notice?

My Results

Explanation

Antacids are designed to neutralize acids. Vinegar is a weak acid. During the chemical reaction between the acid vinegar and the antacid base, the antacid tablet begins to dissolve and releases carbon dioxide gas that bubbles away from the tablet. The cup with the highest concentration of vinegar bubbles the most vigorously because there is more acid with which to interact.

Our stomachs hold a very strong acid called hydrochloric acid. Hydrochloric acid helps us digest our food and kill bacteria. Sometimes that acid can reflux into a person's esophagus and cause discomfort. When we swallow an antacid, which is a base, the tablet chemically neutralizes the gastric acid and provides relief.

Whenever acids and bases combine, the acids and bases neutralize each other and result in the production of salt and water. Acids and bases play other important roles in our bodies, too. We make lactic acid in our muscles from exercising, and the pancreas uses an alkali base as part of digestion as well. Amazing!

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