

5th Grade - Lesson 3.1

What's the Difference between Baking Soda and Baking Powder?

Student Reading

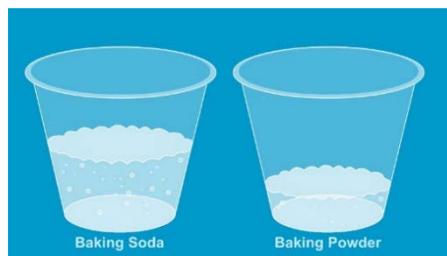
Sometimes when two substances are mixed together, a chemical reaction happens. That means that the atoms and molecules of the two substances interact and form a new and different substance. A common example of a chemical reaction is the one between vinegar and baking soda.

The Vinegar-and-Baking Soda Reaction

In the vinegar-and-baking soda reaction, the molecules of vinegar and baking soda interact. The atoms that make up the molecules rearrange to form a gas and other substances. The gas produced is in the bubbles that you see when you mix these two substances. One of the characteristics of baking soda is the way it reacts with vinegar. In fact, if you wanted to compare baking soda and another substance, like baking powder, you could add vinegar to both and compare how each substance reacts with the vinegar.



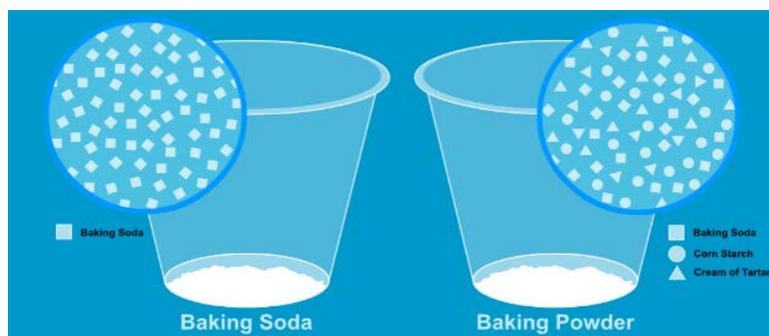
Testing Baking Soda and Baking Powder with Vinegar



Baking Soda Produces More Gas than Baking Powder

If you add vinegar to the same amount of baking soda and baking powder, both have a reaction and both produce a gas. But the baking soda produces more gas than the baking powder.

Both powders react with vinegar because they both contain baking soda, and vinegar reacts with baking soda. The reason why baking powder bubbles less is because baking powder has some other molecules in it that don't react with the vinegar. Since baking soda is pure baking soda, it produces more gas than an equal amount of baking powder, which contains baking soda and other substances.



Ingredients in Baking Soda and Baking Powder

A Delicious Reaction

Baking soda and baking powder are useful even when they're not reacting with vinegar. The gas produced by baking soda and baking powder when heated is what gives cakes, cookies, and pancakes the tiny little bubbles that make them light and fluffy.

