

# Ready, Set, Fizz!

Which fizzes faster—big pieces or little pieces?

## Description

In this activity, kids explore the chemical reaction between water and effervescent antacid tablets.

Suitable for kids of all ages.



## Materials

4 cups or glasses  
*(ones that you can see through are best)*  
Effervescent antacid tablets  
Water  
Food coloring



## Time

**Preparation:** 5 minutes  
**Activity:** 5 minutes  
**Cleanup:** 5 minutes

## Safety

Do not eat or drink any of the materials in this activity. The antacid tablets contain medication. Supervise children at all times.

# Step 1

Fill two of the cups halfway with water.  
Put the same amount of water in  
each cup.

Add a drop of food coloring to each cup.



# Step 2

Remove two antacid tablets from their  
wrapper.

Drop one into one of the empty cups.

Crush or break the other tablet into  
many small pieces, and put it in the other  
empty cup.



# Step 3

At the same time, pour the colored water  
into both of the cups containing the  
antacid.

Which fizzes up faster, the whole tablet or  
the tablet you broke into lots of pieces?



## What's going on?

The crushed tablet fizzes faster than the whole tablet. That's because it has a greater *surface area to volume ratio*.

For the same amount of antacid, the crushed tablet has more surface—or exterior—to react with the water. Because the water can reach more of the antacid immediately, the chemical reaction (fizzing) happens faster.



## How is this nano?

A material can act differently when it's nano-sized. A nanometer is a billionth of a meter.

Things on the nanoscale have a lot of surface area, so they react much more easily and quickly than they would if they were larger.

For example, nano-sized particles of aluminum are explosive. Good thing regular-sized aluminum doesn't explode, or it would be dangerous to drink soda pop!



Nano-sized aluminum is explosive

## Surface area

Nanotechnology takes advantage of the way things behave differently at the nanoscale to make new products and applications.

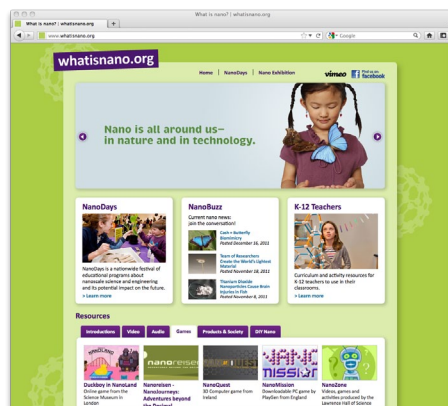
For example, an extra-sticky glue can be made from tiny starch molecules that are only 100 nanometers in size. This eco-friendly adhesive is used to stick graphics onto cardboard packaging.



Nano-sized starch makes extra-sticky glue for packaging

## Learn more

Learn more at:  
[www.whatisnano.org](http://www.whatisnano.org)



## Credits



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