

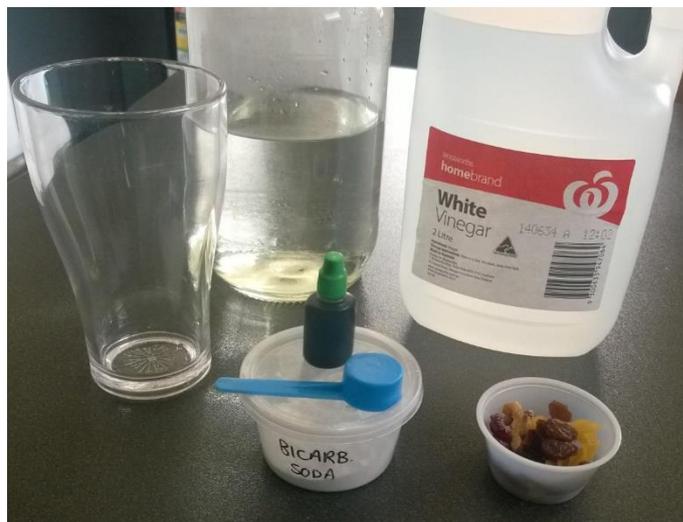


## Try This EXPERIMENT @ Home!

### Floating and Sinking!

You will need:

- A tall clear plastic container
- Water
- Vinegar
- Bicarb soda
- Food colouring (optional)
- Assorted small food items  
eg sultana, rice, dried fruit,  
broken spaghetti bits,  
halved grapes



Step 1: Fill the container about  $\frac{1}{4}$  full with vinegar. Top up the container with water, leaving room at the top of the container.

Step 2: Very slowly add one teaspoon of bicarb soda. Observe what happens.

Step 3: When the reaction settles, slowly add another teaspoon of bicarb soda. When the liquid settles again, add a couple of drops of food colouring. Observe what happens to the food colouring.

Step 4: Gently drop in one of your small food items (eg a sultana). Do you think it will sink or float? Drop in a few more of the same item. Wait a few minutes while watching to see what happens.



The items will usually sink at first, but after a small time will rise to the surface, and then sink again. Try adding some different small food items. Can you get any to dance? If the movement slows down before you have finished experimenting, slowly add another teaspoon of bicarb soda.

#### What is happening?

Vinegar is an acid and bicarb soda is a base. When an acid and a base are mixed, a chemical reaction occurs producing carbon dioxide gas. That is why the liquid bubbles when the bicarb soda is added to the vinegar solution.

While many food items sink in water, the carbon dioxide bubbles in our mixture slowly build up on the surface of the food item. When enough bubbles form, the item floats to the surface where the carbon dioxide gas is released. The item will then sink back to the bottom of the container until it builds up enough carbon dioxide bubbles to make it rise again.

