

BALLOON BLOW UP

These are the materials we will need:

- distilled vinegar
- measuring cup
- funnel
- food coloring
- 3 clear containers
(you can use a clear glass or plastic water bottles, whatever you have around the house)
- baking soda
- tablespoon
- tray or baking sheet
- 3 balloons
- gloves (optional)
- table
- plastic table cloth
(sometimes science can be a bit messy so be sure that when doing experiments you are using a space that is okay to be a bit messy in and taking precautions, like putting down a table cloth)

Now that we have all our materials let's start experimenting.

Step 1: Using your funnel and measuring cup fill each container with 1/2 cup of vinegar. In this experiment our constant variable, or the variable that remains the same is the amount of vinegar. We are using 1/2 cup of vinegar in each container.

Step 2: In each container put a few drops of food coloring. A different color in each container so that you can tell them apart.

Step 3: Set the filled containers on the tray and set them aside.

Step 4: Now it is time to fill the balloons. Rinse off and dry your funnel. Place your funnel into the first balloon and fill it with one tablespoon of baking soda. Place your funnel into the second balloon and fill it with two tablespoons of baking soda. Place your funnel into the third balloon and fill it with three tablespoons of baking soda. In this experiment our independent variable, or the variable that you can change is the amount of baking soda, there is a different amount of baking soda in each balloon.

Step 5: Carefully wrap the end of the balloon around each top of the container being sure that no baking soda falls into the container and comes into contact with the vinegar. Be sure you are arranging them in an order so you know which container is going to get which amount of baking soda. I am going to have my red get 1 tbsp, green get 2 tbsp, and blue get 3 tbsp.

Step 6: Now let's see what happens. Flip over each balloon and allow all the baking soda to fall into the vinegar.

Step 7: Watch! I wonder what baking soda to vinegar ratio will fill up the balloon the most? Let's talk a bit about what's happening. When vinegar and baking soda are combined a chemical reaction occurs. A chemical reaction is when two or more materials are combined, and a new material is created. In this case, carbon dioxide gas is created. The gas has to escape and the only way it can is through the top of the container, so it rises to the top and flows into the balloon, blowing up the balloon. Keep watching the balloons blow up until the bubbles have stopped being creating in the reaction in your container.

Step 8: Time to play!! You can keep testing this in different ways. Change the amount of vinegar and keep the amount of baking soda the same. Do the experiment again with different amounts of baking soda and vinegar. The options are endless! Keep experimenting until you run out of ingredients or your science experimenting time is up.

Step 9: Clean up! You always want to be sure that when you make a fun science mess you also clean up the fun science mess.