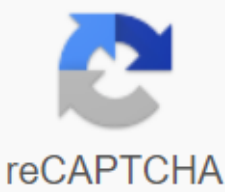




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Self inflating balloon project hypothesis

I assumed the balloon would start to grow bigger and vinegar and the balloon would mix together. Can you blow up a balloon without using your mouth? In this simple scientific experiment, we will show you how to do it with just a few everyday items that you probably already have in your home. This is a great experiment for young children because the set-up is simple and it only takes a few minutes to get to an exciting finale. In addition to video demonstrations and detailed printable instructions, we also have a scientific explanation of how this simple chemical reaction works, making it ideal for older scientists as well. GO TO SECTION: Instructions | Video tutorial | How Does It Work Supplies Needed for Balloon Blow-Up Science Experiment Small Soda Balloon Baking Soda Vinegar Funnel Spoon BALLOON BLOW UP SCIENCE INSTRUCTIONS STEP 1 – Start with some questions: How do you blow up a balloon? What if I told you that you couldn't blow air into it, do you think you could still inflate the (blow-up) balloon? Then observe the supplies for experiments. Do you think they could be used to launch a balloon? If so, how? Write down your hypothesis (prediction). Step 2 - Using a funnel, pour about a third of a cup of vinegar into the bottle. We used apple cider vinegar, but any kind of vinegar will work. Step 3 – Then insert the next funnel into the mouth of the balloon. We recommend using two different funnels. One funnel to fill the bottle with vinegar and one for the balloon. However, you can experiment with only one funnel. Just make sure you completely wash and dry the funnel after adding the vinegar and before putting it in the balloon. That's very important. Step 4 - Place two teaspoons of baking soda in the funnel so that it falls into the balloon. When the balloon is filled with baking soda, carefully remove it from the funnel. Step 5 - Next, secure the mouth of the balloon above the mouth of the bottle. Take the time to do this and don't let any of the baking soda fall out of the balloon and into the bottom of the bottle. Take a moment to make some comments. What happens if we pick up the balloon? Write down your hypothesis (prediction) and then test to see if you were right! Step 6 - While holding the bottle, lift the end of the balloon and let the baking soda drop into the bottle. Step 7 - What happens to the balloon? Was your hypothesis correct? Wondering what caused the balloon to inflate? The answer can be found in how this experiment works below. Balloon Blow Up Science Experiment Video Tutorial Check Out the Balloon Blow Science Experiment Step by Step Instructions, How Does a Scientific Experiment Work? When mixing soda (base) and vinegar (acid), they create a chemical reaction that leads to carbon formation Gas. Gases do not have a specific shape or volume, rather they expand quickly and fill their container. Gases spread rapidly because their particles move at high speed in all directions. Since carbon dioxide fills the bottle, it has nowhere else to go, so it starts filling the balloon. As carbon dioxide fills the balloon, the balloon inflates. The more gas that is generated, the larger the balloon will inflate. The baking soda and vinegar chemical reaction will continue to inflate the balloon as long as there is still baking soda and vinegar to react. As soon as the reaction between baking soda and vinegar stops, the balloon slowly begins to blow out. Acid is a substance that tastes bitter, reacts with metals and carbonates and turns blue litmus paper red. The base is a substance that tastes bitter, feels slippery and turns red litmus paper blue. More ideas on how to try it Changing the amount of baking soda and vinegar to change the size of the balloon when it inflates? What would happen if you used another acid like lemon juice instead of vinegar? Would it react the same way to baking soda? I hope you enjoyed the experiment. Here are some printable instructions: A small soda bottle balloon baking soda vinegar funnel using a funnel, pour about a third of a cup of vinegar into the bottle. Tip: I used apple cider vinegar, but any kind of vinegar will work. Then insert another funnel into the mouth of the balloon. Tip: It is best to have two funnels, one for filling the bottle with vinegar and one for the balloon. If you have only one funnel, it is important to wash and dry the funnel completely after adding vinegar and before inserting it into the balloon. Place two teaspoons of baking soda in the funnel so that it fall into the balloon. Then remove the balloon from the funnel. Next, secure the mouth of the balloon above the top of the bottle. Tip: Don't let any of the baking soda fall into the bottle... Still! When holding the bottle, lift the end of the balloon so that the baking soda falls into the bottle. Watch in amazement as the balloon magically inflates! As with all experiments, please consult with one of your adults that they are happy to give it a try. Tell them what's going on, what you need and where you plan to do it. (After testing this one myself, I recommend it to you in an area where spills won't be a problem – like outside.) Check out the list of devices and methods below, then make a note of what you think will happen. This will be the idea you will test – your 'hypothesis'. Here are some ideas to get you thinking: 1. It is possible to blow up a balloon using kitchen ingredients. 2. It is not possible to throw away the balloon using kitchen ingredients. 3. The size of the bottle you are using makes a difference in how big your balloon is when you use kitchen ingredients to inflate. 4. explode when it is inflated with kitchen ingredients. 5. Any other idea you thought of yourself! You will need: 1. Empty bottle with soft drinks (You can try different sizes.) 2. Food coloring (You can try any color.) 3. White vinegar 4. New, unho blown balloon (Note from Kesta: It is very important that your balloon is new and has no holes in it. Trust me. I tested it! The results were surprising... and messy!) 5. Sodium bicarbonate (It is often called 'bicarb' in a nutshell, and in America it is called 'baking soda'. It is used in the kitchen to make cakes increase when cooked, but it must be activated by something sour, such as yogurt, milksayle, lemon juice or chocolate.) 6. Funnel 1. Place a few drops of food coloring on the bottom of an empty soft drink bottle. 2. Fill half of the bottle with vinegar with a funnel so that you do not spill it. 3. Rinse and dry the funnel thoroughly. 4. Use a funnel to put a teaspoon of bicarb into the balloon through the hole where you would normally blow up. 5. Carefully place the neck of the balloon over the top of the bottle, completely cover the edge of the bottle and make sure that the head of the balloon filled with a bicer hangs down so that none of the bikakarbs get into the bottle. 6. Now all the preparation is ready, lift the head of the balloon so that the bicep falls out of the balloon and into the bottle. 7. Watch what happens! When you did the experiment and found out if your hypothesis was correct or not, feel free to share your results – what happened – and your conclusions – what you found – by telling us what happened in the notes below. You might want to try the experiment again, but testing a different hypothesis. I wonder if it's possible to inflate the balloon completely. I wonder how much vinegar you're going to need? Or how many biakubs... (If you go down this track, be sure to consult with the head chef in your family to make sure they have enough vinegar and bicarb in stock to experiment.) You may need a smaller bottle. Or bigger. What if you don't use food coloring? Is the balloon going to inflate? Is food coloring important? If so, why? (If you look at the step by step pictures I took while testing Kim's experiment, you'll see that I forgot the food coloring. Since my balloon had holes in it, I was really glad I forgot! Can you guess what happened?) There are so many things to test! Have fun! Kesta, if you have done this experiment already yourself. This is what happens when your bottle is too small and your balloon has holes in! Next time, I'll make some adjustments to my method. A self-inflating balloon science experiment is a true scientific experiment that would be perfect for science fairs or science lessons. What children learn in this lesson is that chemical reactions and gases can be used to inflate balloons. The real question is, will any of the balloons be able to swim? * This post may contain affiliate links for your convenience. Click here for my full disclosure. What you'll need for a self-inflating balloon experiment: Balloons (1 for each type of inflation material) Plastic squeeze bottles (1 for each type of inflation material) Yeast Sugar Baking Soda Vinegar Warm Water Measuring Mug One thing to note before starting is that a yeast balloon takes some time to inflate. You'll want to get started before you dive into the others, so you can compare them at the same time. We waited about 10 minutes after starting our yeast mixture to give it time to inflate before we did any more experiments. Q: What mixture will inflate the balloon best? Hypothesis: Kids thought that baking soda and vinegar would be the biggest balloon because I've made baking soda paint bombs before, and know the power of this reaction! How to Do A Self-Inflated Balloon Experiment: To preserve this scientific, add the same amount of inflation material to each bottle. We add about 3 tablespoons of hot water to one bottle, vinegar to the other and warm water to the third (for yeast). We add 1 teaspoon of sugar along with half the yeast package to the bottle of yeast. On top of each bottle, tape the balloon tightly around the discharge so they can't pop off. Screw the lid firmly onto a bottle of yeast and a hot water bottle. Fill the lid with baking soda and quickly screw the lid on to the last bottle. Baking soda and vinegar are inflated the most and fastest. In fact, our almost popped the lid off the bottle and made a huge mess, but we caught it on time. Yeast is a slow-inflating balloon, but it lasted the longest. The hot water was barely enough air to help build the balloon straight. What children learn in the self-inflatable balloon experiment This experiment is a classic scientific experiment with hypothesis, experiment, and record results. This experiment is simple, but it helps children understand how the scientific process works. Besides, who wouldn't want to know what is the best substitute for helium in balloons? Of course, some kids may be disappointed to learn that these balloons won't actually float in the air, but that's another lesson too! These balloons can not swim, because none of the fillings are lighter than air! Looking for more STEAM (Science, Technology, Engineering, Art and Mathematics) projects and inspiration? Can't get enough of STEAM? We've got you under control. With super affordable, super sweet STEAM Kids books! My year is worth hands-on science, technology, engineering, art, & math activities for kids. Plus a lot more.... And you get a free STEAM Kids Valentine's Day eBook with every purchase STEAM Children's Book. Book.