

CO2 Balloons – Visualize this Vital, Invisible Gas!

The vibrant ecosystems along the Fraser River wouldn't be able to thrive if it weren't for an important, but invisible gas: **carbon dioxide!** This gas, also known as CO₂, is in the air you breathe out and it's an important component in photosynthesis: the process plants use to convert light, water, and carbon dioxide into the energy they need to stay healthy! They also give off oxygen in the same way we breathe out CO₂, which is why trees and plants are so important for keeping our air and environment healthy!

However, all of these gases are invisible to the naked eye! So, in today's activity let's create and capture carbon dioxide using a simple experiment you can try from the comfort of your own home!

Here's what you need:

➤ **Plastic Bottle** – recycle an old water bottle for this!

➤ **Vinegar**

➤ **Baking Soda**

➤ **Balloons** – the more colourful the better!

➤ **Teaspoon**

➤ **Funnel** – For our experiment we're using a store-bought plastic funnel, but you could take a piece of paper and roll it into a funnel shape. Use tape or a stapler to hold it together!



Let's Get Started!

#1: Research Carbon Dioxide!

Before we begin, let's do some research on carbon dioxide. Ask yourself the following questions to help guide your learning:

- How much carbon dioxide is **in the air we breathe?**
- **Why do we breathe out** carbon dioxide?
- **How do trees and plants use carbon dioxide** to stay healthy?
- What happens to an ecosystem when there's **too much carbon dioxide** in the air?

#2: Set up for your experiment

First, pour about 3cm of vinegar into your empty bottle.

Next, take a teaspoon of baking soda and carefully pour it in an uninflated balloon. Be careful not to spill and make a mess!

#3: Attach your balloon to the top of the bottle

You might want to get an adult to help you with this next part! Without letting the baking soda fall into the vinegar, stretch the neck of the balloon around the top of the bottle, making sure it's secure and no air can escape.

Once the balloon is secure, flip your attached balloon up so the baking soda falls into the bottle.

#4: Watch and see what happens!

The reaction should start to take place immediately as the balloon begins to inflate!

Pay close attention to what's going on! Recording the results of an experiment is an important part of being a scientist, so make sure you take notes of what's happening in your experiment.

Carbon dioxide is an invisible gas to the naked eye, but as it is created in the reaction the balloon prevents it from escaping!

Natural processes like Photosynthesis are taking place across the Fraser Basin all the time and help contribute to the health of the watershed's many ecosystems! However, just like how carbon dioxide is invisible, we can't always see these processes happening! When you go out to enjoy the biodiversity of the basin, slow down and take a closer look at your surroundings. You never know what you'll discover!



Let us know how your crafting went! Share pictures of your inflated balloon experiment online and tag us **@thefrdc** to help us find you! Stay safe and happy experimenting!

