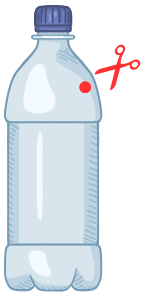
CARBON CAPTURE

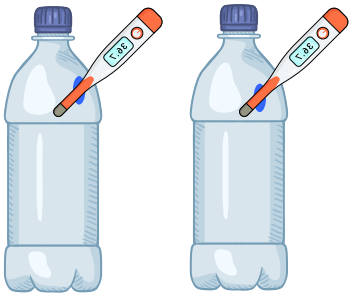
We've explored greenhouse gases and their effect on our planet, now let's look at this in the classroom!

You will need:

- 2x Bottle
- Scissors
- Water
- Tape
- Seltzer tablets
- Thermometer
- Blu-Tac
- Sunlight

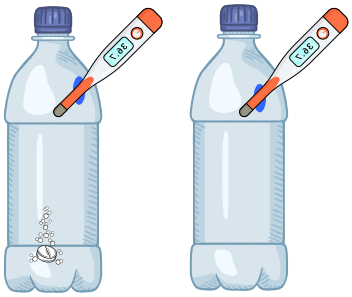


Step 1:Carefully make a small hole in each of the 2 bottles, big enough to slide the thermometer into.

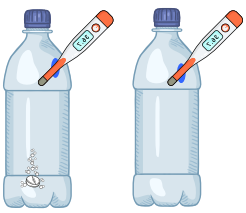


Step 2: Fill each bottle 1/3 full of water, and insert the thermometer into the newly made hole, sealing around the edges with blu-tac.

Step 3: add a seltzer tablet to 1 bottle and seal, both bottles should have the cap sealed, however, keep an eye on the bottle with the tablet, don't let it explode!



Step 4: Place both bottles in the sun or under a heat lamp. Shade the thermometer probe from the sun using tape, then record the temperature every ten minutes over an hour.



Top Tip!
If you don't have seltzer tablets, then bicarbonate of soda will also work well!

Stronger Shores

North Sea Wildlife Trusts

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Demonstration Explained:

We use the two bottles to compare the effects of Carbon Dioxide in trapping and storing heat. As the seltzer tablet dissolves in the water, it gives off Carbon Dioxide, with this gas filling the bottle. The other bottle will also contain Carbon Dioxide, but at a much lower level (the amount in regular air).

As the bottles are gently heated, the Carbon Dioxide molecules hold on to more of the heat than the majority oxygen molecules in the other bottle, and so the heat stays trapped in the bottle with the tablet for longer.

This is what is happening with our planet too! As more Carbon Dioxide and other greenhouse gases are released into our atmosphere, they trap and hold on to more of the sun's heat, warming our planet.