

## Global Warming in a bottle

Carbon Dioxide ( $CO_2$ ) is one of a number of gases that contribute to global warming. In this activity students mimic the global warming effect by creating large amounts of  $CO_2$  in a bottle and investigate if this has a heating effect.

### Equipment:

- Plastic bottle
- Digital thermometer
- Ruler
- Lamp
- Water
- Timer
- Vitamin C tablets or Alka-Seltzer tablets

To make this a fair experiment what do you need to keep the same?

- The amount of water
- Same size/type of bottles
- Same type of thermometers
- Same type of water
- Same distance from bulb to bottle

- Run experiment for the same amount of time

What will be the control?

- Bottle with no tablets added to water.

What factor are you going to change?

- The amount of vit C tablets placed in water hence the amount of  $CO_2$  produced in the bottle.

What are you going to measure?

- Starting temperature of air in bottle
- Final temperature of air in bottle
- Difference in temperatures

Results:

No. of tabs	Starting temp (°C)	Final temp (°C)	Change in temp (°C)
0	21.2	23.0	1.8
0.5	20.1	22.9	2.8

1	21.4	24.2	2.8
1.5	21.0	23.8	2.8
2	21.0	24.1	3.1

Conclusion:

The more  $CO_2$  produced, then the bigger the rise in temperature.