



The Greenhouse Gas Effect Jar Experiment

Being outside is linked with health and wellbeing, so get yourself out on a sunny day and try this experiment!

What You Need:

- Two thermometers
- A notebook
- Pencil or pen
- A clear container, such as a jar
- Watch or clock
- A sunny area, either outside or inside



What You Do:

1. Lay the thermometers in direct sunlight. Let them sit in the sun for three minutes.
2. Open a page of the notebook and draw two columns, one labelled “Thermometer A” and one labeled “Thermometer B.”
3. After the three minutes have passed, read and record the time and thermometer temperatures in the notebook.
4. Place one of the thermometers in the jar or container and seal. Make sure the lid doesn’t cast a shadow on either thermometer!

5. Record the temperature of the thermometers every minute for ten minutes.
6. Discuss how the container affected the temperature of thermometers. How did the temperature inside the container change compared to outside the container?

What's Going On?

The thermometer outside of the container is being exposed to air that is constantly changing temperature, as the warm air mixes with passing cooler air.

The air inside the container is trapped and can't mix with the cooler surrounding air—it just gets warmer as the sunlight heats it up. A greenhouse works in a similar way;

The Greenhouse Effect



Some sunlight that hits Earth is reflected back into space, while the rest becomes heat

Greenhouse gases prevent heat from escaping into space, warming the planet



solar energy in the form of light creates thermal energy, or heat, that can't escape through the glass.

This activity mirrors how a greenhouse works, but it's not exactly the same as the greenhouse effect that is taking place in the Earth's atmosphere. A complex interaction between light, heat, and chemicals make up the greenhouse effect and the chemicals known as "greenhouse gases" in the environment. They cause the temperature of the Earth to be warmer than it would be without them, much like the glass in a greenhouse, or the jar in this activity.