

Greenhouse Experiment

Key Stage 2

NC references

Working Scientifically

- making systematic and careful observations
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using straightforward scientific evidence to answer questions or to support their findings.

Learning objectives

To use modeling to observe and describe the greenhouse effect

Teaching ideas

Explore

Learn about the greenhouse effect/ global warming and how scientists consider that the increase in carbon dioxide and other gases contributes to the increase in global temperatures. This video could be helpful:

<https://www.youtube.com/watch?v=oJAbATJCugs>

Investigate

Complete this observing over time investigation to model the greenhouse effect

Resources

- a large, open bowl
- dark cloth or paper
- paper cup
- thermometer or temperature probe
- plastic to cover the top of the bowl. Ideally, this would be a reusable silicone cover or perhaps some wrappers joined with tape or plastic wrap could be reused for this investigation and saved for future investigations)
- A warm, sunny day!

Using two sets of equipment, one without the plastic cover, will help to compare the effects on temperature. Or simply record air temperature alongside the 'greenhouse' temperature.

- Line the bowl with the dark cloth or paper
- Place the paper cup, upside down, on the bottom of the bowl and lay the thermometer on top of the cup.
- Note the start temperature
- Cover the bowl with the silicone cover or plastic cover, ensuring there is a tight seal (you may need to use tape to secure this)
- Leave in a warm, sunny position and observe the temperature over time. You might take readings every half an hour or simply take a final temperature after a couple of hours.
- Record the final temperature in the greenhouse investigation

Discuss and research

This investigation could be a great starting point for discussion and research:

- How is Earth's atmosphere useful in controlling temperatures for life?
- What is the greenhouse effect and how can it be increased? What gases contribute to the greenhouse effect?
- Where does carbon dioxide come from in the atmosphere?
- How could we reduce carbon emissions?
- What could the effects be of an increase in global temperature on a range of habitats?

Next steps

- Support children to write explanations the greenhouse effect or how global warming occurs and the factors that can increase it
- Create a poster to raise awareness of the dangers of increasing global temperature.
- Decide on personal actions that the children/ school will take to help reduce carbon emissions.