

Climate Change Lesson Plan



Aim

For all students to understand the impact human activity has on our environment and to investigate how global temperatures are rising and how we can help stop it.

Time requirements

Approximately 60mins

Resources

- Interactive water resource
- Whiteboard or projector

Activity 1

- Two identical glass jars
- 4 cups cold water
- 10 ice cubes
- One clear plastic bag
- Thermometer

Activity 2

- Printed out tables
- Pencils
- Map of school (with images for younger students)

Learning objectives

To learn about climate change and to encourage people to take action to reduce the future level of change.

Curriculum Strands

SESE, Science and Geography – Environmental awareness and care, energy and forces

English – Oral language and reading

Maths – Numbers and data

Skills

Questioning, observing, predicting, group work, investigating, counting and analysing

Links to Green-Schools

Step 2 Environmental Review – Water audit

Step 3 Action Plan – Awareness raising experiments and water audit

Vocabulary

Greenhouse effect, global warming, temperature, thermometer, water audit, CO², emissions, carbon calculator

Running the activity

- Ask students have they heard of climate change and what they think it is. Write down their answers and go through Section 4 explaining what it is.

1) **Greenhouse Effect experiment** - To recreate and understand the Greenhouse Effect

- Take two identical glass jars each containing 2 cups of cold water.
- Add 5 ice cubes to each jar.
- Wrap one in a plastic bag (this is the greenhouse glass).
- Leave both jars in the sun for one hour.
- Measure the temperature of the water in each jar.
- Discuss in groups what happened in each glass.

Explanation

In bright sunshine, the air inside a greenhouse becomes warm. The greenhouse glass lets in the sun's light energy and some of its heat energy. This heat builds up inside the greenhouse. You just showed a small **greenhouse effect**. What could happen if this greenhouse effect changed the earth's climate?

- Ask the students what they can do to help stop the increase in temperature and go through Section 4 What You Can Do.

2) **Water Audit** – To find out the ways your school uses water, how much you use and how you can reduce it

- Put students into teams to go around the school and count everything that uses water.
- The students write down what they find on a table or put a mark on a school map showing where water is used (depending on age).
- Older students or the teacher, could research how much water each of the appliances use.
- Put all the results together on one big table, using images if possible and post on your Green-Schools notice board. The older classes could use excel to show their results on charts and/or tables.

See Section 4 of the Water Resource

Questions

- Which glass has warmer water? And why?
- Which ice cubes melted faster? And why?
- What is the Greenhouse effect? Do we need it? And is it changing?
- What can you do to help stop global warming? (see Section 4 What You Can Do)

Go further

Calculate the schools CO² emissions using a carbon calculator

www.greenschoolsireland.org/energy/carbon-calculators.339.html