



HOW THE GREENHOUSE EFFECT WORKS

Aim:

When you have completed this activity you will have described some of the ways that living things use the earth and sun as resources.

Read the Fact Sheet about the greenhouse effect. This experiment will demonstrate how the greenhouse effect works.

You will need:

- Two clear plastic bottles with the necks cut off
- Sand
- 150W flood light
- Clear plastic wrap
- Two thermometers
- Masking tape

Procedure:

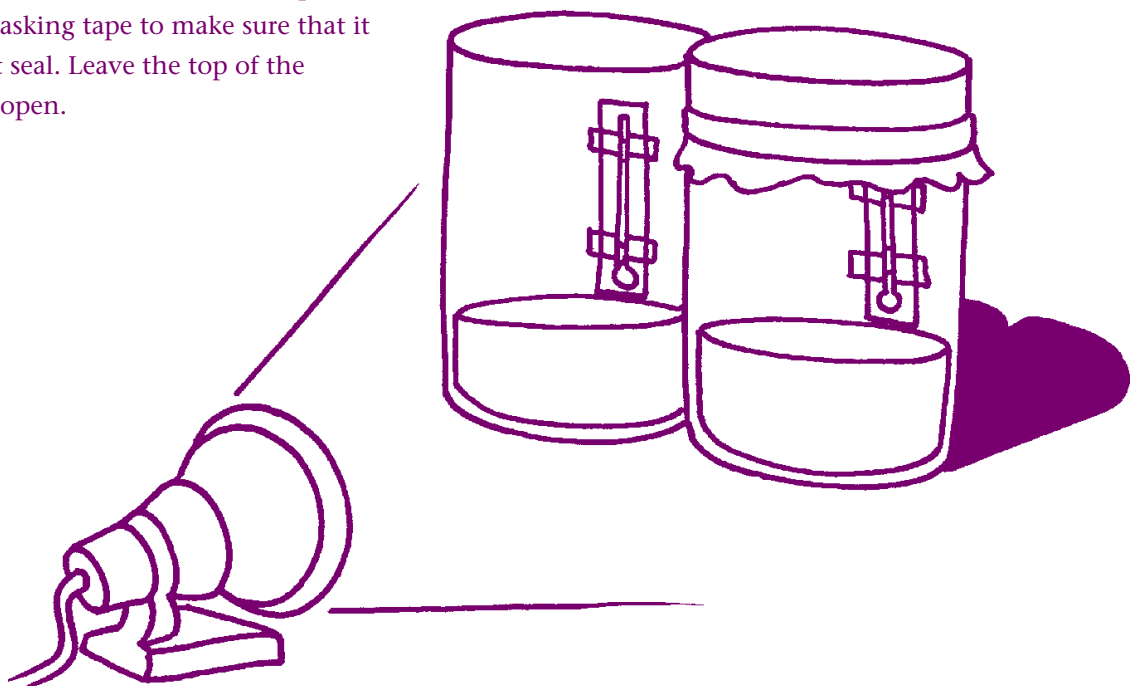
Set up the equipment as shown in the diagram below. Place an equal amount of sand in each bottle and tape a thermometer in the same position in each bottle so that they can be read from the outside. Carefully seal the opening of one bottle with a sheet of plastic wrap. Use masking tape to make sure that it is an airtight seal. Leave the top of the other bottle open.

Place the bottles close together and an equal distance (about 15 cm) from the centre of the flood light with the thermometers on the sides of the bottles away from the lamp.

Record the temperature of each of your 'greenhouses' on the table below. (Note: both thermometers should read about the same temperature at the beginning, that is, room temperature.)

Predict which of the greenhouses will get warmer when the light is turned on.

Switch on the lamp and record the temperature of each greenhouse every minute for 15 minutes.





Temperature (°C) recorded each minute for 15 minutes															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.															
2.															

Answer these questions:

Why did the temperature in each bottle rise? _____

Why did the temperature of the closed bottle level off at a higher temperature than the open bottle? _____

What would happen to the temperature of the earth if the sun's energy could reach the earth's surface, but could not easily escape?
