

Modelling the Greenhouse Effect

Purpose

To design a physical model of the greenhouse effect

Equipment and Materials

List the Equipment and Materials you will need. Include any necessary safety equipment.

Procedure

In this activity, you will design a physical model of the greenhouse effect. Your model should include the following functions:

- allow visible light to enter the system
- absorb that light energy
- emit the light energy in the form of lower-energy infrared radiation (You will feel this infrared radiation as thermal energy.)
- prevent thermal energy from leaving the system
- allow you to monitor the temperature of your system

Part A: Designing Your Model

1. With your group, brainstorm some materials that you could use in your model.
2. Decide how you will test your materials to see if they work before you build your model. Test your materials.
3. Decide how you will control the variables in your investigation. Also, decide how you will compare the temperature inside your system with the temperature outside your system.
4. Plan a way to reduce the amount of thermal energy leaving your system.
5. Sketch a diagram of your model.
6. List any safety precautions you will take.

Part B: Building Your Model

7. Describe the design of your model to another student or to your teacher. Incorporate any appropriate changes that they suggest.
8. Write a paragraph describing what you plan to build and how you will do it. Include any materials you plan to use.
9. Plan a procedure to test your greenhouse model in the presence of a strong light. Remember to account for and control all the variables, except the ones you are measuring. What measurements will be made and for how long? (design a data table)