

How Do We Keep Our Living Room Warm?

Science, English
Curriculum Levels 1-2

Activity Description

This is a suitable activity to undertake in early winter, or winter. While some students may be able to do this investigation alone, it is an ideal investigation for students to complete with an adult or older family member, as it could lead to the family taking action(s) to increase energy efficiency and keep their home warmer in winter.



Teaching rationale

Students will investigate:

- how their family keeps their living-room warm
- how they keep the heat inside their living room.

The students will be able to:

- describe how to conduct a room survey that considers ways heat is lost from a room
- describe how to reduce heat loss in a room in the house they live in
- carry out actions, alone or with family members, to reduce heat loss in one room of the house.

Curriculum Links

Area	(Level 1 -2) Achievement Objective
Science	<p>Physical World <i>Physical inquiry and physics concepts</i></p> <ul style="list-style-type: none">• Students will explore and investigate the physical phenomena of heat and heat loss in the everyday situation of their home living-room <p>Nature of Science <i>Investigating in science</i></p> <ul style="list-style-type: none">• Students will extend their experiences and personal explanations of the physical world through exploration and asking questions.• Participating and contributing• Students will explore the ways heat is lost from their living-room and possibly take action, as an individual or with their family, to reduce these heat losses.
English	<p>Listening, Reading, and Viewing and Speaking, Writing, and Presenting <i>Processes and strategies</i></p> <ul style="list-style-type: none">• Students will integrate sources of information, processes and strategies with growing confidence to identify, form and express ideas about heat loss in houses

Introductory Activity

Review the students' understanding of how heat is lost from rooms by drawing a picture of the outside of a house on the whiteboard.

- ▲ Draw the house with windows and doors partially open and show open curtains.
- Explain that it is a winter day and you want to keep the inside of the house warm. Ask the students what they would do to stop the heat escaping.
- Ask the students what a draught is and where the cold air from outside could get into the house.
- ▲ Explain that when a house is built some insulation is usually included in the ceiling, walls or floor to help keep the heat in the house in winter. The insulation may also keep the house cool in summer. People can add extra insulation to houses that have already been built.
- Ask the students to describe any types of insulation they know about. (If possible, bring some insulation materials, such as fibreglass, wool or polystyrene batts to show the students.)
- Discuss the types of heating that are used to keep houses warm in winter. The discussion could extend to how efficient and how cost effective the heating is.
- ▲ Discuss the idea that if we are warm and have reduced the amount of heat escaping from our body we do not need to have a room so warm. Discuss clothing that keeps us warm that we wear inside, and using blankets and covers.
- Work through the questions on the Student Inquiry sheet to make sure students understand the questions and the inquiry.

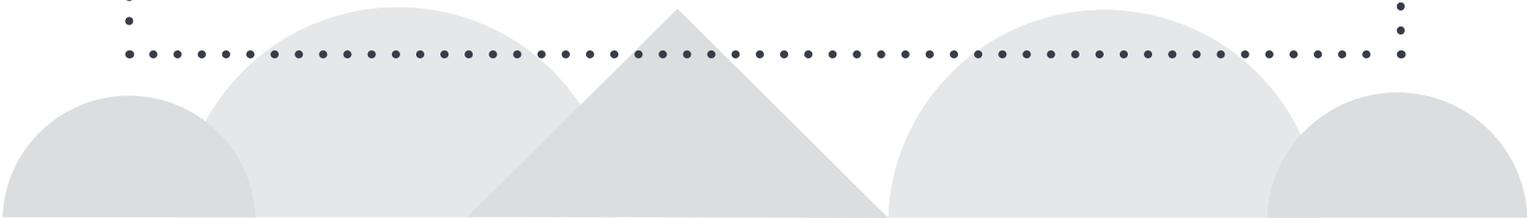
How Do We Keep Our Living Room Warm?

Inquiry 1

How do you heat your living room?



Draw your living room. Then draw in the things your family use to heat your living room. Write a label for each one e.g. heat pump, gas heater, electric heater, wood burner, fire.





Inquiry 2

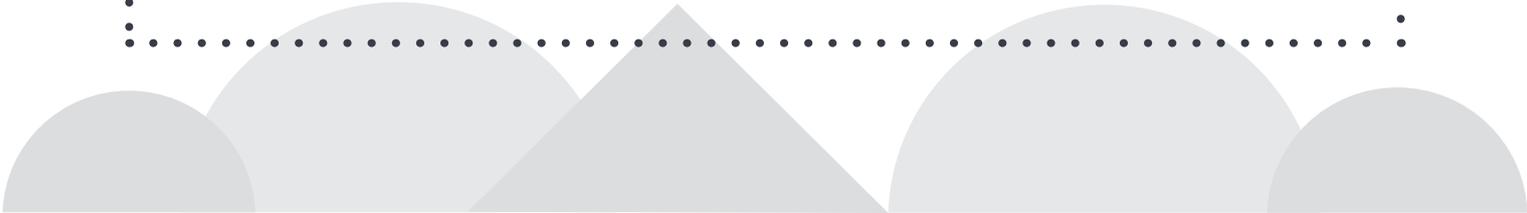
Where does heat escape from your living room?

List the ways heat can escape from your living room. Write a label for each one on your diagram on Inquiry 1 e.g. through windows, under doors, through chimneys, through the floor, through the ceiling, through cracks or holes in the walls.

Inquiry 3

What do you do now to keep the heat inside your living room?

List the things your family does or uses to keep the heat inside your living room. Write a label for each one on your diagram on Inquiry 1 e.g. close the windows, close the curtains, shut doors, insulation, window seals, draught stoppers.





Inquiry 4

What else could you do to keep the heat inside your living room?

List your ideas of other things your family could do to keep the heat inside your living room. You could draw these ideas here.

Inquiry 5

What could you do to keep yourself warm by stopping heat escaping from your body?

Draw or write down some things you can do to stop heat escaping from your body when you are in your living room.

