

Science

**How can we make
the most of our
radiators?**

LO: To measure the impact of installing radiator foils.



Teacher notes

This lesson presentation and the lesson plan it accompanies, are adaptable for KS1; LKS2 or UKS2. Therefore, they will need to be carefully read through and edited to ensure they are suitable for your pupils.

For example, Success Criteria and vocabulary will need to be edited in some cases.

Alternatively, the lesson can be used with a mixed age range.

The first part of this lesson must be started *before* the foils are installed.

Success Criteria

- I can explain that some materials are good insulators, while others are good conductors of heat.
- I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
- I can plan a fair investigation to test the insulation properties of a material.
- I can make sensible predictions based on prior knowledge.
- I can measure the temperature of the room before and after the foils are installed.
- I can record the results.
- I can summarise my findings.

Vocabulary

Radiator

Heat

Warmth

Insulator

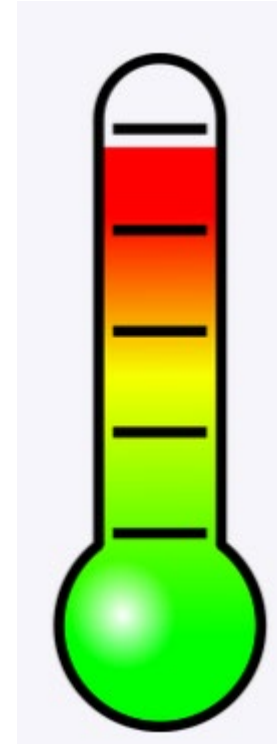
Conductor

Thermometer

Install

Installation

Starter



Conductor or Insulator?



Materials that are good at letting heat pass through them into the surrounding area are called ***conductors***.

Can you think of any examples of good thermal conductors?

(Metal conducts heat and so the food inside a saucepan heats up quickly.)

*If, however, you want to keep something warm, you need a good **insulator!***

Can you make an estimate of the difference in temperatures before and after installation?

What would be the best unit of measurement for this activity?

Key questions

What would be the best measuring tool to use?

What will you need to check?

Look at the radiator in your classroom.

- Where would be the best place to put the thermometer?
- How long will you leave it in place before reading the measurement?
- How will you make sure your measurements are accurate?
- How will you make it a fair test?



Tasks

➤ BEFORE INSTALLATION

- Estimate the temperature of the room *before* the foil is installed.
- Measure the temperature of the room before the foil is installed.
- Record the first temperature.

AFTER INSTALLATION

- Measure the temperature of the room *after* the foil is installed.
- Record the second temperature.
- Discuss and write about your findings.

Plenary questions:

- Are the foils good insulators?
- How do we know?
- How will this affect our school's energy use?
- How could this impact climate change?
- **With how many people can you share your knowledge about how energy use affects climate change?**