

Investigating Insulating Materials

27 September

Lesson Aims:

All learners:

1. Plan an investigation into which materials are the best insulators.

Most learners:

1. Understand the terms control variables, independent and dependent variables.
2. Display the results of their investigation.

Some learners:

1. Come to a conclusion of why some materials are better insulators.

True/False

1. Rate of cooling is the same as temperature change.
2. A beaker with a larger surface area will allow water to cool more quickly.
3. A hot object loses temperature faster in air, if the air temperature is 30°C , than when the air temperature is 5°C .
4. Animals living in the Arctic have smaller ears.
5. A control variable changes during an experiment.
6. Objects cool faster as their temperature drops.
7. A matt black surface would cool faster than a shiny silver surface.
8. Marathon runners wear silver blankets to cool down.

Starter

In any science investigation, there are variables. How would you describe the following variables?

1. The control variables ?

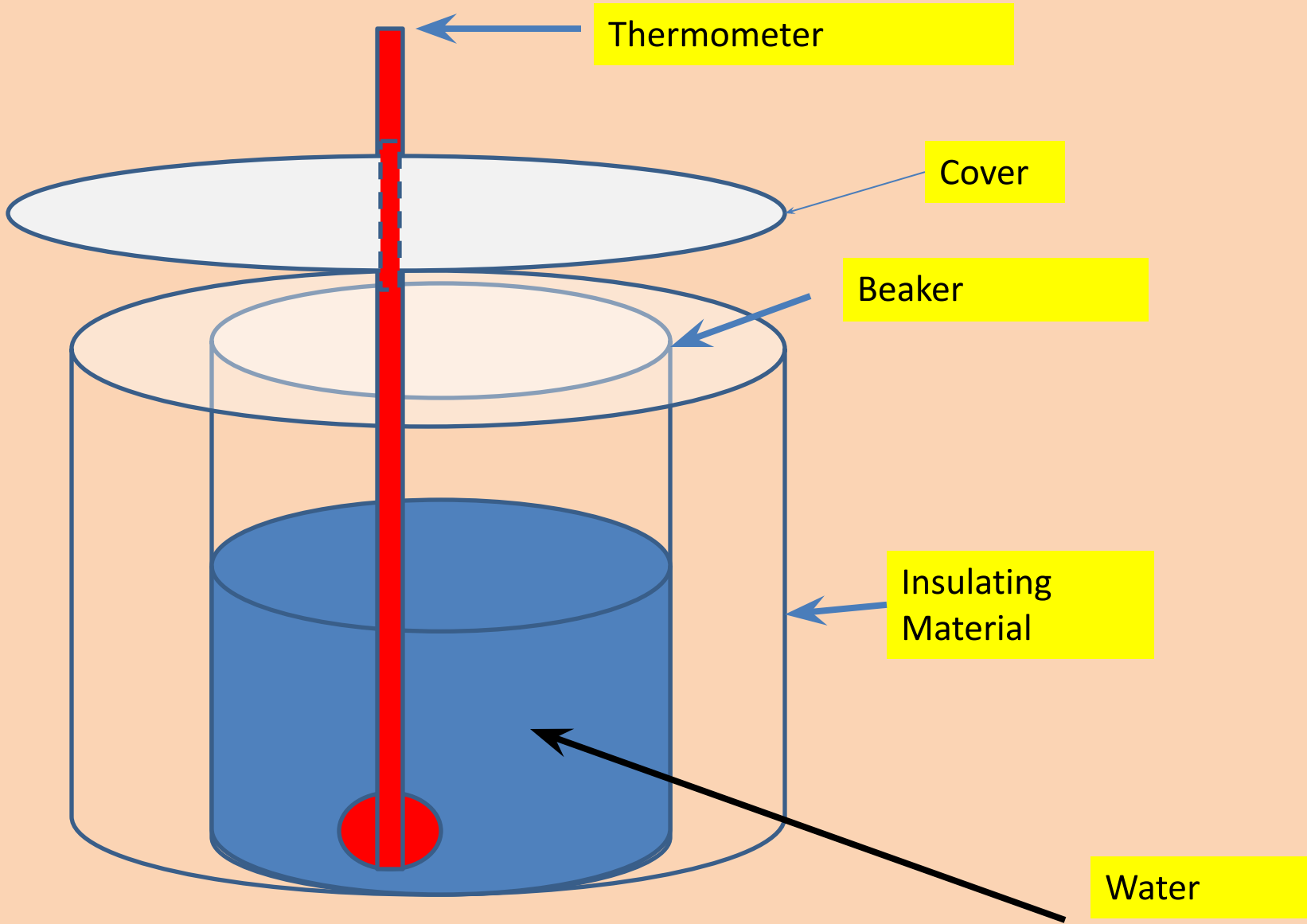
What you keep the same to make a fair test.

2. The independent variables ?

What you change during an experiment and you think will affect the outcome of the experiment.

3. The dependent variable ?

What you are trying to find out and what you think will change because of the independent variable.



Material	Start Temperatur e/ °C	End Temperatur e/°C	Temperature Drop / °C

Plenary !!

1. What were the control variables in your investigation?
2. Why was it important to take a class average of the results ?
3. How do you know which material is the best insulator?
4. What kind of variables are insulating materials?
5. How do you represent them on a graph?
6. Why was there one beaker without insulation?