

Insulation

Organise the method used to measure the effects of different insulation:

- Plot cooling curve graphs for each material.
- Use the kettle to boil water and put 80 ml of this hot water into the small beaker.
- Insert the thermometer through the hole in the cardboard lid so that its bulb is in the hot water.
- Record the temperature of the water and start the stopwatch.
- Put the small beaker inside the larger beaker.
- Repeat steps **1–6** using the different materials each time to fill the space between the small and large beaker.
- Use a piece of cardboard as a lid for the large beaker. The cardboard must have a hole for the thermometer.
- Record the temperature of the water every 3 minutes for 20 minutes Add your results to a table.

Choose a real life situation and explain how the results of this experiment would be used:

Real life situation:

How the results would be used.....



What are the variables in this experiment:

Independent:.....

Dependent:.....

Control Variables:

.....

How would you control these variable to minimise their effects?

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Put the materials in order of best insulator to worst insulator:

Best:

- Bubble Wrap
- Tin Foil
- Newspaper
- Polystyrene
- Sawdust
- Corrugated Cardboard

Worst

Explain in your own words why some materials are better insulators than others

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Plan

Without turning over (!) write a step by step plan for measuring the effects of different insulations.



Results

Time (min)	Newspaper	Bubble Wrap
0	75	80
3	72	77
6	68	74
9	64	71
12	62	68
15	60	65
18	58	63

Look at the table of results and graph. Which material is the better insulator? How do you know?

Complete the sketch graph for Bubble Wrap and Newspaper

