

# Edexcel Physics GCSE

## Practical 7: Particle Model

### Practical Flashcards

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# Part 1: Investigating melting.



Outline the basic steps of the practical.



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1. Fill the beaker with boiling water and place over a bunsen burner
2. Fill a boiling tube with crushed ice and record its temperature
3. Place the tube in the beaker of water and record its temperature every 30 seconds



What safety precautions should be taken when using a bunsen burner?



What safety precautions should be taken when using a bunsen burner?

- Hair and loose clothing should be tied back
- Ensure the safety flame is used when not heating the water
  - Place a heatproof mat underneath



What graph should be drawn with the data?



What graph should be drawn with the data?

A graph of temperature against time.





What would you expect the graph to look like whilst the ice is melting?



What would you expect the graph to look like whilst the ice is melting?

The temperature should remain roughly constant whilst it is melting since the energy is being used to break bonds in the substance.



# Part 2: Investigating specific heat capacity.



Outline the basic steps of the practical.



## Outline the basic steps of the practical.

1. Measure the mass of the empty beaker and then fill with water and remeasure
2. Ensure the beaker is insulated and insert the immersion heater and thermometer into the water
3. Leave to heat for an hour and then record the final temperature and calculate the specific heat capacity



What piece of equipment is connected to the heater to measure the amount of energy that is being transferred?



What piece of equipment is connected to the heater to measure the amount of energy that is being transferred?

A joulemeter.



What can you do to aid the heating process?





What can you do to aid the heating process?

Continually stir the water as it is being heated so the heat is evenly distributed.



Define the 'Specific Heat Capacity' of a substance.



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The amount of energy needed to raise the temperature of 1 kilogram of a substance by  $1^{\circ}\text{C}$ .



State the units for Specific Heat Capacity.



State the units for Specific Heat Capacity

$\text{J}/^{\circ}\text{C}/\text{kg}$

Joules/Degree Celsius/Kilogram



State the equation used to calculate the energy change when a substance is heated. Give appropriate units.



State the equation used to calculate the energy change when a substance is heated. Give appropriate units.

- $\Delta E = m c \Delta \theta$
- Energy (J), Mass (kg), Specific Heat Capacity (J/kg/°C), Temperature (°C)

