

Physics - Key stage 4 - Particle Model of Matter

Case study Worksheet

Mr Charman



Exam question



Exam question

Susie researches information about water and ice.

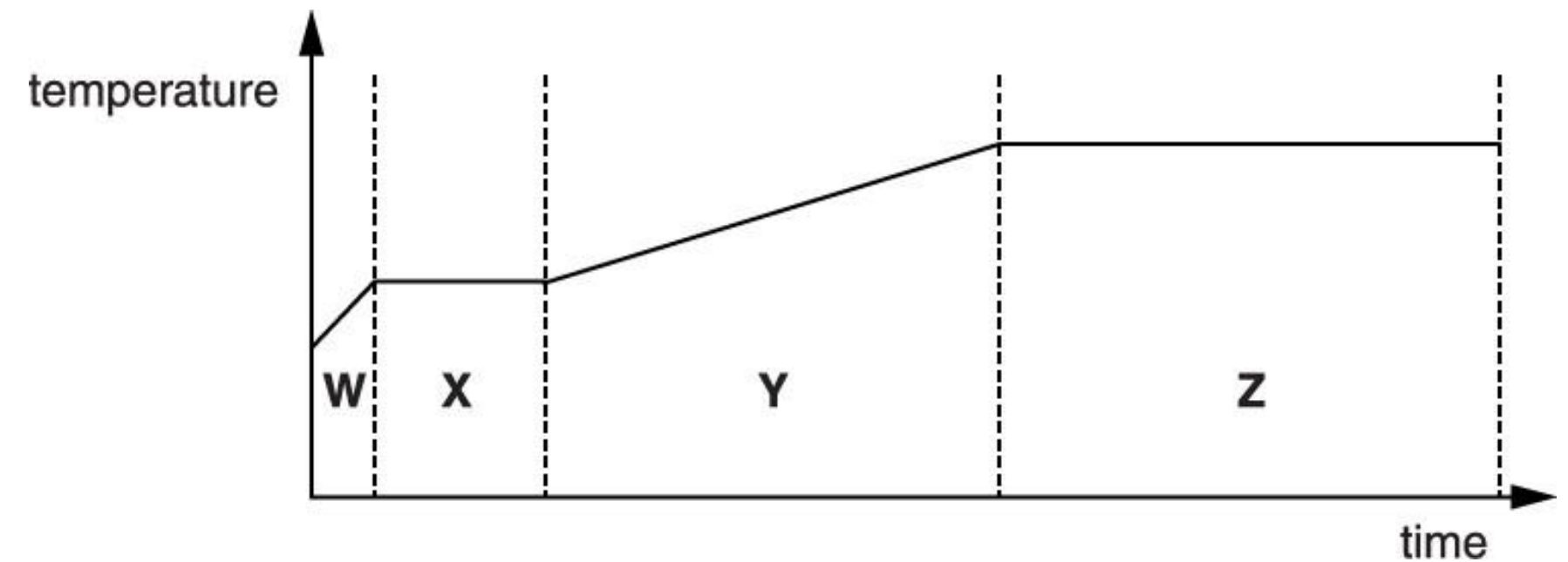
Table 1 shows the information she collects. Susie heats a sample of ice.

She measures the temperature of the ice as it heats up and changes state.

	Specific heat capacity in $\text{J/kg } ^\circ\text{C}$	Specific latent heat of fusion in kJ/kg	Specific latent heat of vaporisation in kJ/kg
Water	4186	335	2272
Ice	2060	335	–

Look at the simple graph of her results.

- a) Which section of the graph shows the temperature of **ice** rising? Choose from **W**, **X**, **Y** and **Z**.
- b) Which section of the graph shows the **water** boiling? Choose from **W**, **X**, **Y** and **Z**.



OCR, Gateway Physics A, Paper B751/01, Jun 2015.



Exam question

Susie researches information about water and ice.

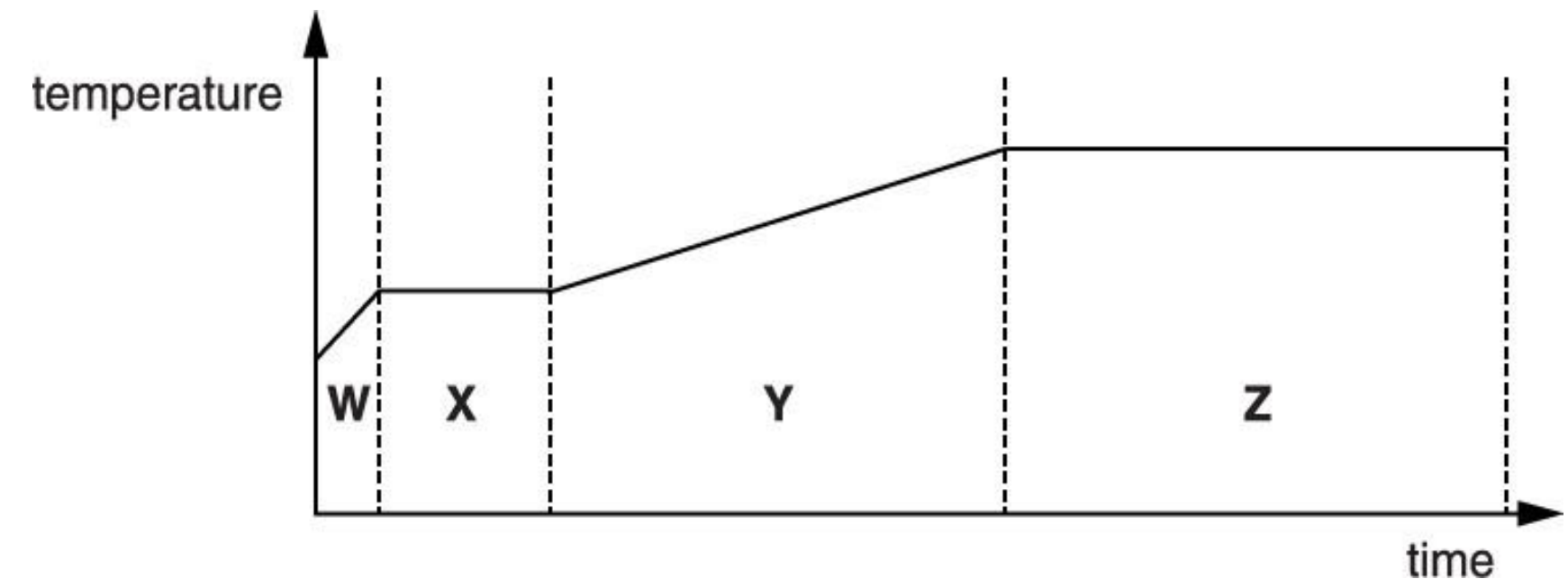
Table 1 shows the information she collects. Susie heats a sample of ice.

She measures the temperature of the ice as it heats up and changes state.

Look at the simple graph of her results.

c) Section **W** is **steeper** than section **Y**. Use the information in Table 1 and the graph to explain why?

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Answers



Exam question - review

a) W **(1)**

b) Z **(1)**

c) W warms quicker than Y OR Y warms slower than W **(1)**

ice has lower specific heat capacity OR water has a higher specific heat capacity **(1)**

Answers as discussed in this slide have not been seen or verified by OCR.



In lesson questions



Pause the video to complete your task

Latent heat

1. Write the equation for latent heat of fusion.
2. Label the unit for each quantity.

Resume once you're finished



Pause the video to complete your task

Specific heat capacity

1. Write the equation for specific heat capacity
2. Label the unit for each quantity.

Resume once you're finished



Answers



Review

$$\Delta E = m C \Delta \theta$$

Energy (ΔE) - Joules / J

Mass (m) - kilograms / kg

Temperature change ($\Delta \theta$) - degrees celsius / °C

Specific heat capacity (c) - Joules per kilogram degree celsius J / kg °C

