

Matter

These tasks are designed to help you fully demonstrate your extending understanding of particle theory. You need to work independently and use science key words along with good spelling and punctuation. You may do the tasks in any order, but all need to be completed fully.

Task 1

Look at the table below of melting and boiling points of substances.

Substance	Melting point (°C)	Boiling point (°C)
gallium	30	2205
ethanol	-114	78
oxygen	-218	-183
water	0	100

Choose a temperature and predict what state all the substances will be in at that temperature.

For example, "At 0°C, water will be in the solid state, oxygen will be in the ...".

Tell another student the state of all four substances and see if they can work out what range of temperatures your chosen temperature must be in.

Then swap and see if you can work out the range of temperatures that their temperature must be in.

Task 2

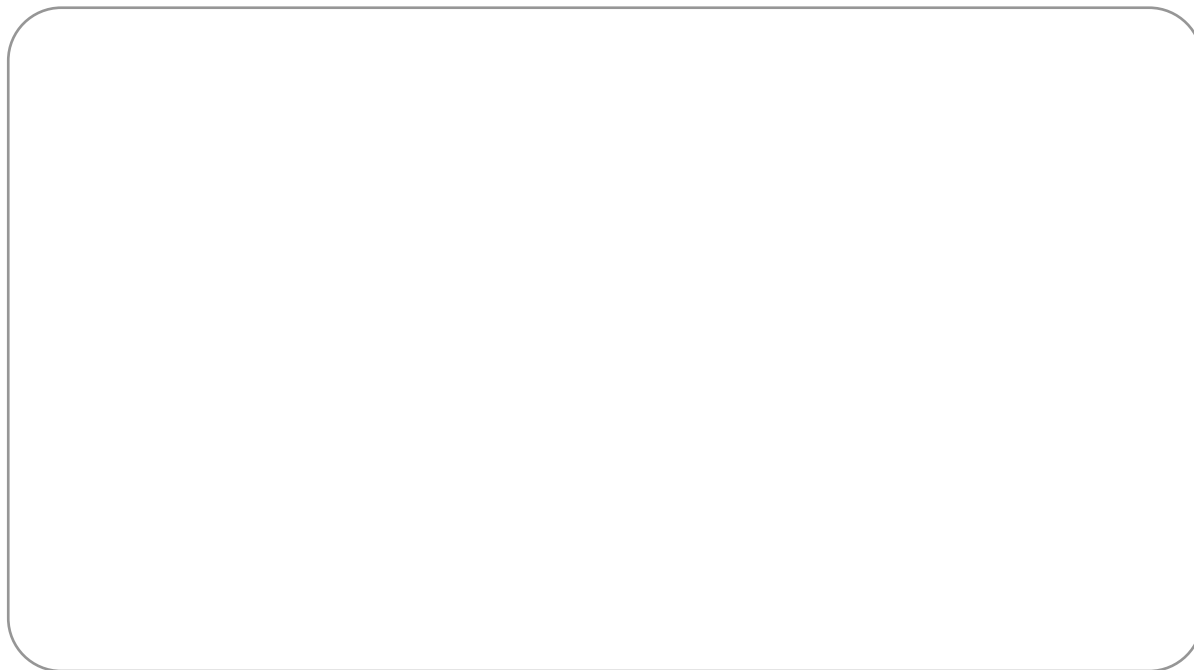
- 1 Sand is a solid, yet it can be poured into a container and will fill the bottom of it. Explain why sand is a solid even though it behaves in this way.

- 2 A student in another class states that “evaporation and boiling are the same thing”. Write a paragraph of at least 50 words to explain why the student is wrong.

Task 3

What would happen if you put a sealed, empty plastic bottle into a freezer?

Draw particle diagrams to support your answer.

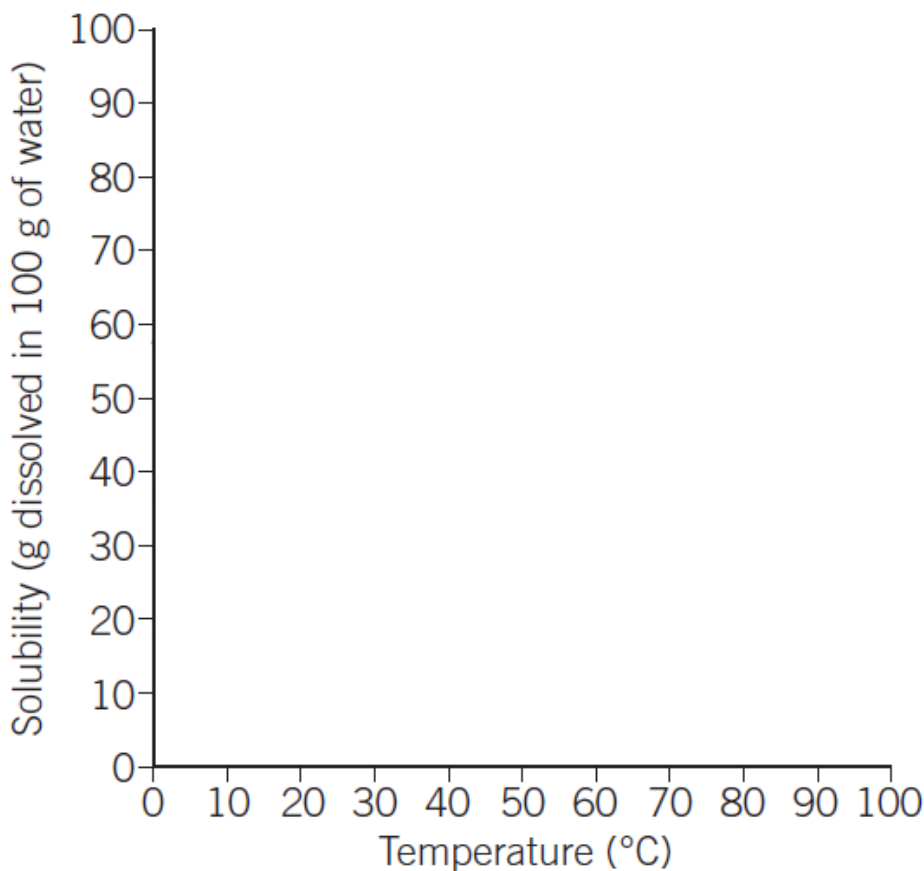


Task 4

On the axes below, sketch lines to represent three different substances (that have different solubility values) dissolving at different temperatures.

Describe what is happening to each substance, making sure you explain how the solubility changes with increasing temperature.

Note: You do not need to use data about real substances – you can make up what happens to your three substances.



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Part 1 Checkpoint
Extension (Route B)

Activate
for AQA
