

How water melts, boils and freezes

Grade 6 science (Year 7 · Class 6) · Test

Name: _____ Date: _____ Class: _____ Mark: ____ / 20

This test covers changes of state of water, heating curves and the particle explanation. Use the graph where you are told to. Show calculations step by step and give units. You have 45 minutes and the total is 20 marks.

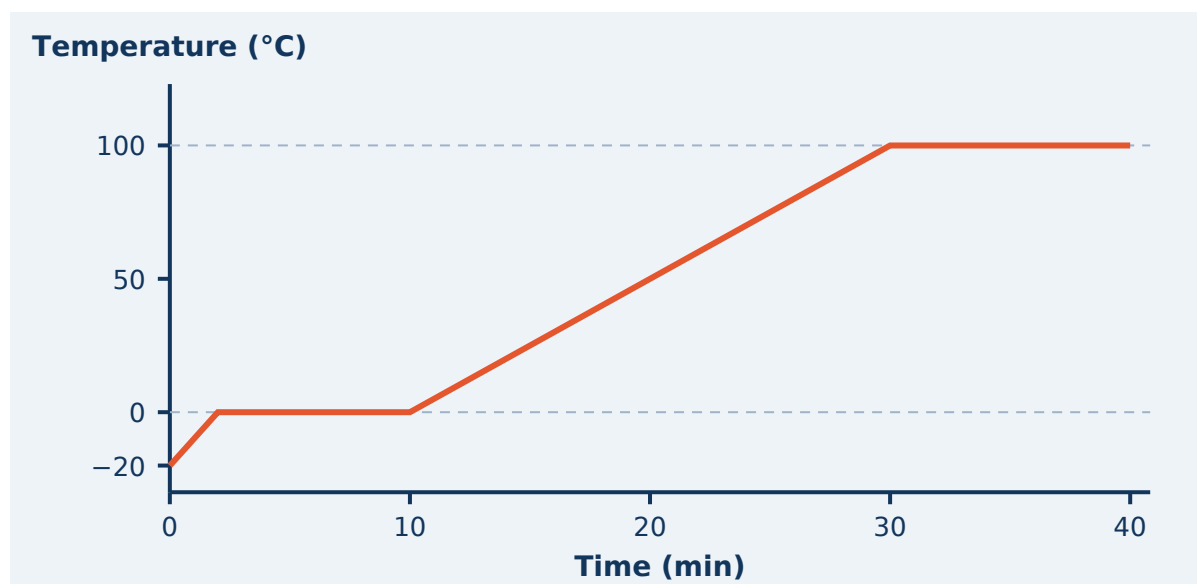
Level: Grade 6 science (Year 7 · Class 6) · **Curriculum:** MS-PS1-4

Time: 45 minutes · 8 questions · Total: 20 marks · Calculator allowed

Question 1 Naming changes (2 marks)

- Name the change of state when water vapour turns into liquid on a cold window. (1 mark)
- Name the change of state when liquid water turns into ice. (1 mark)

Question 2 Reading the graph (3 marks)



Temperature of a sample of ice heated steadily.

- State the state or states present at 6 min. (1 mark)
- State the boiling point shown by the graph. (1 mark)
- Calculate how long the melting takes. (1 mark)

Question 3 Using the rate (3 marks)

Use the graph in Question 2.

- Calculate the rate of warming of the liquid water between 10 min and 30 min. (1 mark)
- Using this rate, calculate the time to warm water from 20 °C to 100 °C. (1 mark)
- State what the heat supplied is doing between 30 min and 40 min. (1 mark)

Question 4 Evaporation and boiling (2 marks)

State two differences between evaporation and boiling. (2 marks)

Question 5 Dew on the grass (3 marks)

In the cool of early morning, Kofi in Accra finds the grass covered in tiny drops of water. Explain how the drops formed, using the idea of water vapour and temperature. (3 marks)

Question 6 Correct the statement (2 marks)

A student writes: "The temperature rises all the time you heat a pan of water."
Correct the statement, and give the reason for the change. (2 marks)

Question 7 Melting and the particles (3 marks)

Describe what happens to the particles of a solid when it melts, including their movement and their arrangement. (3 marks)

Question 8 A puddle on a warm day (2 marks)

A puddle in Pune disappears on a warm day although the temperature is only 32 °C. Explain how this is possible. (2 marks)