

Solids, liquids and gases explained

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

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

This test checks your knowledge of states of matter and the particle picture. Answer every question in full sentences where asked. Show all working in calculations and write units. You have 45 minutes and 20 marks are available.

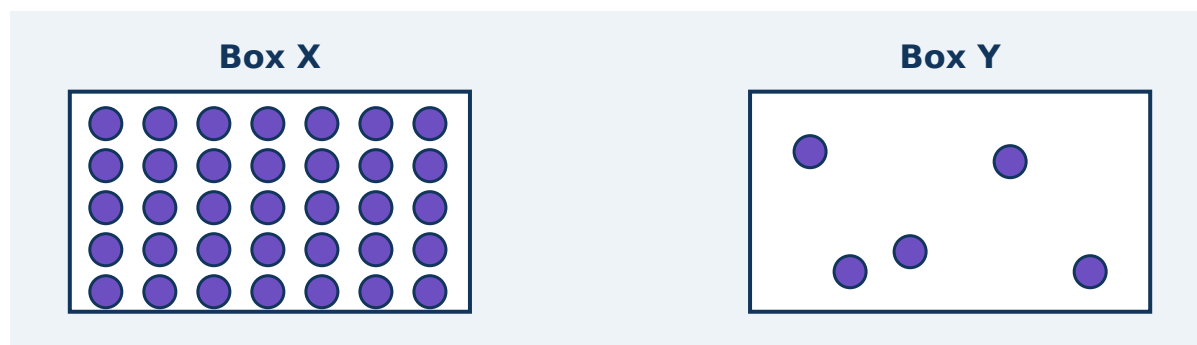
Level: Grade 6 science (Year 7 · Class 6) · **Curriculum:** MS-PS1-4

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

Question 1 Naming states (2 marks)

- State the state of matter that has a fixed volume but no fixed shape. (1 mark)
- State the state of matter that fills any container it is put into. (1 mark)

Question 2 Reading a diagram (3 marks)



Particle boxes X and Y.

- Identify which box shows a solid and which shows a gas. (1 mark)
- Give one piece of evidence from the picture for your choice of gas. (1 mark)
- Describe the movement of the particles in box X. (1 mark)

Question 3 Compressing liquids (2 marks)

Zainab squeezes a sealed syringe full of oil and the plunger will not move.
Explain why, using the particle picture. (2 marks)

Question 4 A squeezed bag (3 marks)

A bag of air has volume 2.4 L. Haruto squeezes it until its volume is 0.6 L.

- Calculate the decrease in volume. (1 mark)
- Calculate the fraction of the first volume that is left. (1 mark)
- State whether the number of particles in the bag has changed. (1 mark)

Question 5 Smell of bread (2 marks)

Someone standing across the road smells fresh bread from a bakery.

Explain how the smell reaches them. (2 marks)

Question 6 Comparing solids and gases (3 marks)

Compare a solid and a gas in terms of:

- shape, (1 mark)
- the distance between particles, (1 mark)
- how easily they can be squeezed. (1 mark)

Question 7 Correct the statement (2 marks)

A student writes: "The particles of a solid are frozen and never move."

Correct this statement. (2 marks)

Question 8 The sand puzzle (3 marks)

Sand can be poured from a bucket, but sand is classed as a solid.

Explain why, using the idea of grains. (3 marks)