

Solids, liquids and gases explained

Grade 6 science (Year 7 · Class 6) · Test answers (mark scheme)

Use these model answers to mark your work. Award marks for each correct idea written in your own words, not for copying phrases. Work out your total out of 20 and note the topics that need more review.

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

Question 1 Naming states (2 marks)

- a. Liquid. (1)
- b. Gas. (1)

Marking: 1 mark each.

Question 2 Reading a diagram (3 marks)

- a. X is the solid and Y is the gas. (1)
- b. In Y the particles are far apart and not in a pattern. (1)
- c. They vibrate in fixed positions. (1)

Marking: 1 mark for each part.

Question 3 Compressing liquids (2 marks)

The particles of the oil are already touching (1), so there is no empty space for them to move into when pushed (1).

Marking: 1 mark for touching particles, 1 mark for no space to compress.

Question 4 A squeezed bag (3 marks)

- a. $2.4 - 0.6 = 1.8 \text{ L}$. (1)
- b. $0.6 \div 2.4 = 1/4$ (0.25). (1)
- c. **No**, the number is the same. (1)

Marking: 1 mark each; accept 0.25 or 25 %.

Question 5 Smell of bread (2 marks)

Bread particles escape into the air and move randomly among the air particles (1), so they spread until they reach the person (diffusion) (1).

Marking: 1 mark for particles moving, 1 mark for spreading/mixing.

Question 6 Comparing solids and gases (3 marks)

- a. A solid has a fixed shape; a gas takes the shape of its container. (1)
- b. Solid particles touch; gas particles are far apart. (1)
- c. A solid can hardly be squeezed; a gas is easily compressed. (1)

Marking: 1 mark per comparison.

Question 7 Correct the statement (2 marks)

Solid particles do move: they vibrate (1) around fixed positions but cannot move from place to place (1).

Marking: 1 mark for vibrate, 1 mark for fixed positions.

Question 8 The sand puzzle (3 marks)

Each grain is a small solid with its own shape and volume (1). The grains are not fixed to one another and can slide past each other (1), so the heap flows like a liquid, although the material is still solid (1).

Marking: 1 mark for each point.