

The Particle Model of Matter

Time: 20 min. 6 questions.

Instructions

Answer each question using what you have learned about the particle model of matter and the physical properties of solids, liquids, and gases. Read each question carefully, and for the numeric question, show your work if you can.

Questions

1. Which statement best describes how particles are arranged in a solid?

- A) The particles are far apart and move freely in all directions.
- B) The particles are close together and vibrate in place.
- C) The particles are spread out with spaces and slide past each other.
- D) The particles do not move at all.

([Knowledge](#))

2. In your own words, describe one difference between how particles move in a liquid and how particles move in a gas. ([Knowledge](#))

3. True or false: Attractive forces between particles are strongest in gases and weakest in solids. ([Knowledge](#))

4. A carton holds 2 litres of milk. How many millilitres is that? ([Knowledge](#))

5. Which physical property describes the amount of space that a solid, liquid, or gas takes up?

- A) Mass
- B) Density
- C) Volume
- D) Compressibility

([Knowledge](#))

6. A block of wood floats when placed in water. Using the idea of density, explain why this happens. ([Knowledge](#))

Curriculum coverage

Question	Outcome alias
1	Knowledge
2	Knowledge
3	Knowledge
4	Knowledge
5	Knowledge
6	Knowledge

Answer key

1. **B.** In solids, the particles are close together and vibrate in place, which gives solids a fixed shape ([Knowledge](#)).
2. **Sample answer: In a liquid, particles are separated by spaces and slide past each other, while in a gas, particles are separated by large spaces and move constantly in all directions.** This matches the described arrangement and movement of particles in each state ([Knowledge](#)).
3. **False.** Attractive forces between particles are actually strongest in solids and weakest in gases, the opposite of what the statement claims ([Knowledge](#)).
4. **2000 mL.** Since 1 litre equals 1000 millilitres, 2 litres equals 2000 millilitres ([Knowledge](#)).
5. **C.** Volume is the amount of space that a solid, liquid, or gas takes up ([Knowledge](#)).
6. **Sample answer: The block of wood floats because it is less dense than water.** A solid, liquid, or gas that is less dense than the fluid it is placed in will float on that fluid ([Knowledge](#)).