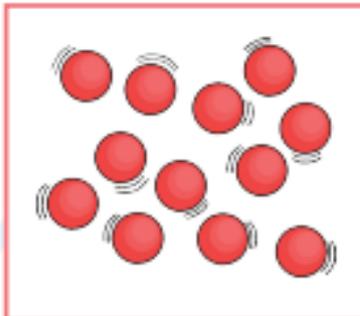
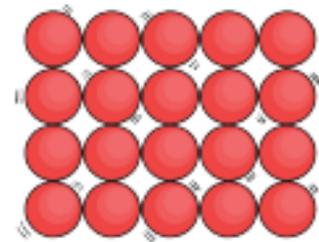


L.O. I can understand the concept of states of matter and answer questions.

## Solids, Liquids and Gases

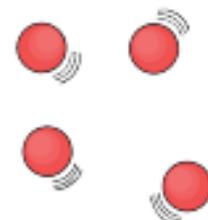
**Solids, liquids, and gases are the three most common states of matter. Each state of matter is characterised by the way its particles are arranged and how they move.**

Solids are a state of matter in which the particles are tightly packed together in a regular pattern, giving them a fixed shape and volume. The particles in a solid are held together by strong intermolecular forces, which make it difficult for them to move around. Solids can be either crystalline, which means they have a well-defined, repeating pattern, or amorphous, which means they do not have a well-defined pattern. Diamonds, table salt, and quartz are examples of crystalline solids. Glass, plastics and rubber are examples of amorphous solids.



Liquids, however, have particles that are less tightly packed than solids, allowing them to move around and flow past one another. This means that liquids have a fixed volume, but not a fixed shape, as they take on the shape of their container. Like solids, liquids have strong intermolecular forces holding their particles together, but these forces are weaker than those in solids.

Gases are a state of matter in which the particles are very far apart and move around rapidly. This means that gases do not have a fixed shape or volume and will fill any container they are placed in. The intermolecular forces holding the particles together in a gas are very weak, allowing them to move around freely.



The transition between these three states of matter can be induced by changing temperature and/or pressure. For example, increasing the temperature of a solid will cause its particles to move around more, eventually leading to a liquid state. Similarly, increasing the pressure on a gas will cause its particles to become more tightly packed, eventually leading to a liquid or solid state.

# Questions

1. What are the three most common states of matter?

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2. What is the difference between a crystalline solid and an amorphous solid?

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3. Give an example of a crystalline solid?

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4. What is an example of an amorphous solid?

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5. How do the particles in a liquid differ from the particles in a solid?

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6. Do liquids have a fixed shape or volume?

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7. What happens to a solid when its temperature is increased?

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8. What happens to a gas when its pressure is increased?

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