

Matter

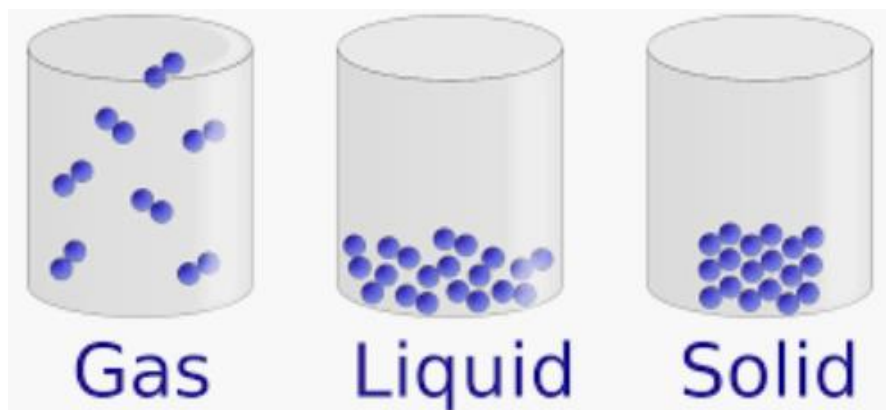
1. Particle model

CONCEPT 1

USING PARTICLES TO EXPLAIN MATTER

NOTES

Matter is made up of **particles**. These are very tiny objects such as atoms or molecules, too small to be seen with a microscope.



We can use the **particle model** to show the arrangement of particles in a solid, a liquid or a gas. This is useful as a way to think about how substances behave in terms of small, moving particles.

The particles in a **solid** are close together and arranged in a regular way. They cannot move from their position but vibrate on the spot.

The particles in a **liquid** are a bit more spaced out, but still touching. They can move randomly to change position with one another, enabling the liquid to flow.

The particles in a **gas** are very spaced out and move randomly.

Particles that are more tightly packed together have more **density**. This means there is more matter within a particular volume. Solids are denser than liquids. Liquids are denser than gases.

Particles can be held together by **intermolecular forces of attraction**. The intermolecular forces of attraction are stronger in a solid than a liquid. They are stronger in a liquid than a gas.