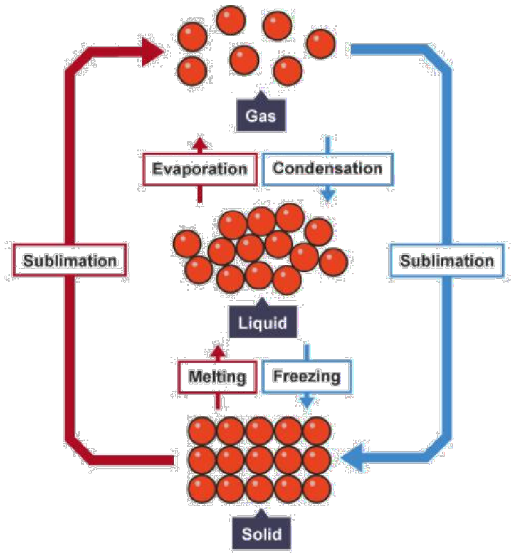
Keyword	Definition
Particle	The general term for a small piece of matter.
State of Matter	The distinct forms in which matter can exist (solid, liquid, gas)
Solid	A substance with a fixed shape and volume.
Liquid	A substance with a fixed volume but not a fixed shape.
Gas	A substance that does not have a fixed shape or volume.
Change of State	The change of a substance from one physical form to another.
Melting	The change of state when a solid changes to a liquid.
Freezing	The change of state when a liquid changes to a solid.
Condensing	The change of state when a gas changes to a liquid.
Evaporation	The change of state when a liquid changes to a gas.
Density	The amount of mass that 1cm^3 of a substance has.
Density (formula)	Density = mass ÷ volume p = m ÷ v
Dense	Something which is heavy for its volume.

Further Reading:
https://www.bbc.com/bitesize/guides/z2wmxnb/revision/1

https://www.bbc.com/bitesize/articles/zqpv7p3

Highsted Matters B knowledge organiser



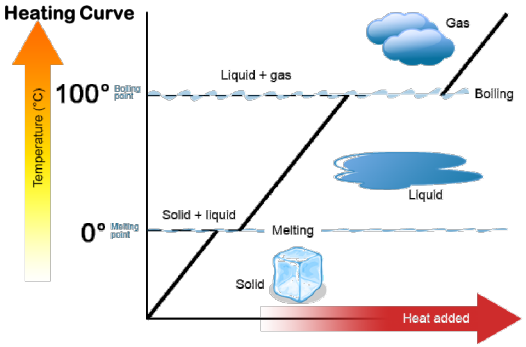
Forces between particles:

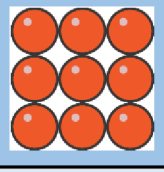
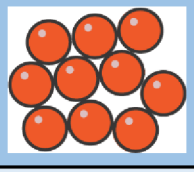
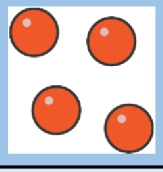
Solid: There are strong forces of attraction between the particles in a solid. Therefore, particles can only vibrate in a fixed position.

Liquid: There are weaker forces of attraction between the particles in a liquid. Therefore, the particles are close together, and are able to move around each other.

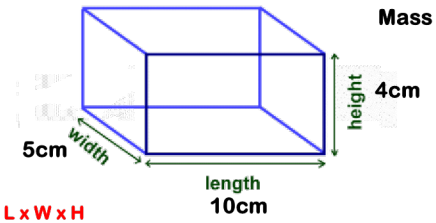
Gas: The forces of attraction between the particles are overcome. Therefore, the particles are far apart and move quickly in all directions.

Heating Curve



Solid	Liquid	Gas
		
The particles vibrate in a fixed position.	The particles are close together and move around each other.	The particles are far apart and move quickly in all directions.
The particles cannot move from place to place.	The particles are arranged in a random position.	The particles are arranged in a random way.
Particles have a fixed shape and cannot flow.	The particles flow and take the shape of the bottom of their container.	The particles flow and completely fill their container.
The particles cannot be compressed (squashed)	The particles cannot be compressed.	The particles can easily be compressed.

Calculating Volume:



Volume = L x W x H
Volume = 10cm x 5cm x 4cm
Volume = 200cm^3.

Calculating Density:
Density = Mass ÷ Volume
Density = 20g ÷ 200cm^3
Density = 0.1g/cm^3

Density:
1kg of a gas has a larger volume than 1kg of a solid. There is empty space between particles in a gas, but in a solid, they're tightly packed together.