

## Physics Chapter 4: Particle model

<b>States of matter and properties</b>	
Solid	Particles are uniform in arrangement, close together, vibrating on the spot, strong bonds, fixed shape and volume
Liquid	Particles are not uniform in arrangement, small gaps between particles, little Kinetic energy, weaker bonds, no fixed shape, fixed volume
Gas	Particles are not uniform in arrangement, lots of space between particles, lots of Kinetic energy, weakest bonds, no fixed shape, no fixed volume
Particle Model	The model we use to show the arrangement and energy of particles and to explain properties of states of matter
Density	Mass/Volume
Volume	The amount of space an object occupies. Measured with a ruler or a eureka can in cm cubed

<b>Changing state</b>	
Melting	Solid to liquid
Freezing	Liquid to solid
Boiling	Liquid to gas at boiling point
Evaporation	liquid to gas below boiling point
Conservation of mass	No mass is gained or lost during a change of state
Latent heat	The amount of energy needed to change the state of 1Kg of a substance
Specific Latent heat of fusion	The amount of energy needed to change the state of 1Kg of a substance from a solid to a liquid
Specific latent heat of vaporisation	The amount of energy needed to change the state of 1Kg of a substance from a liquid to a gas

<b>Energy in the system</b>	
Potential Energy	the energy the particles have when far apart from each other
Internal Energy	The total kinetic and potential energy the particles have in a system

<b>Gas properties</b>	
Gas pressure	The force of gas particles colliding with the walls of its container
Methods to increase gas pressure	Compress or heat to increase force and number of collisions
Methods to decrease gas pressure	Expand or cool to decrease force and number of collisions

<b>Specific Heat Capacity</b>	
Specific heat capacity	A measure of the amount of energy it takes to raise 1kg of a substance by 1 degree C.

