

## Definitions and Concepts for AQA Physics GCSE

### Topic 3: Particle Model of Matter

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*Definitions in **bold** are for higher tier only*

*Definitions marked by '\*\*' are for separate sciences only*

**Change in Thermal Energy:** The product of the mass, specific heat capacity and temperature change of a substance.

**Chemical Changes:** Changes to the chemical structure of a substance. The substance does not usually restore its original properties when the changes are reversed.

**Condensation:** The changing from vapour state to a liquid state, when a substance is cooled.

**Density:** The mass per unit volume of an object.

**Evaporation:** The changing from liquid state to a vapour state, when a substance is heated.

**Freezing:** The changing from a liquid state to a solid state, when a substance is cooled.

**Gas Temperature:** The temperature of a gas is directly proportional to the average kinetic energy of its molecules.

**Internal Energy:** The energy stored by the atoms and molecules that make up a system. It is equal to the sum of the total kinetic and potential energies of the particles in the system.

**Latent Heat:** The energy required for a substance to change state.

**Melting:** The changing from solid state to liquid state, when a substance is heated.

**Pascals:** The unit of pressure, equal to a force of one Newton acting perpendicular to an area of one metre squared.



**Physical Changes:** Changes to the physical properties of a substance which can be reversed. Changes of state are physical changes since substances can restore their original properties when the changes are reversed.

**Pressure:** The force acting perpendicular to a surface, per unit area.

**Specific Heat Capacity:** The amount of energy needed to increase the temperature of one kilogram of a given substance by one degree Celsius.

**Specific Latent Heat of Fusion:** The amount of energy needed to change the state of one kilogram of a substance from solid state to liquid state, whilst held at constant temperature.

**Specific Latent Heat of Vaporisation:** The amount of energy needed to change the state of one kilogram of a substance from liquid state to vapour state, whilst held at constant temperature.

**Specific Latent Heat:** The amount of energy needed to change the state of one kilogram of a substance, whilst held at constant temperature.

**Sublimation:** The direct changing of a substance from a solid state to a vapour state, without passing through the liquid phase.

