

The following are the terms you should be familiar with in order to properly complete this unit. You are expected to be able to define each as well as apply these terms in any situation during this and subsequent units of study.

thermal energy - The total energy (KE & PE) of a material's particles.

heat - The flow of energy from one object to another due to differences in temperature. Flows from a warmer material to a cooler material.

temperature - Relative hotness/coldness. Proportional to the average kinetic energy of the particles that makes up a sample of matter.

specific heat capacity - The energy required to raise the temperature of a specific mass of substance. A property of matter indicating its ability to store thermal energy.

kinetic theory of matter - States that all matter is made up of tiny, constantly moving particles.

density - Mass of a substance per unit volume.

solid - State of matter in which all the particles are packed tightly with what little motion due to vibrations of the particles.

liquid - State of matter in which the particles are packed loosely, and the vibrations have increased so that the particles can flow around each other.

gas - State of matter in which particles move freely of one another and only sporadic contact.

plasma - The state of matter that exists due to a high amount of energy and the particles break apart into positive and negative particles (ions).

fluid - A term used to describe any substance that flows, mainly liquids and gases.

freezing - Change of state from a liquid to a solid.

melting - Change of state from a solid to a liquid.

condensation - Change of state from a gas to a liquid.

vaporization/boiling - Change of state from a liquid to a gas occurring at the boiling point.

evaporation - A change of state from a liquid to a gas that takes place below boiling point.

sublimation - Direct change of a substance from the solid to the gas state, without passing through the liquid state.

heat of fusion - Amount of energy per unit of mass needed to change a material from a solid to a liquid.

heat of vaporization - Amount of energy per unit of mass needed to change a material from a liquid to a gas.

thermal expansion - The characteristic of most matter to expand when heated and contract when cooled.

conduction - The transfer of energy through matter in which energy moves from particle to particle.

conductor - A material that allows energy to move easily through it.

insulator - A material that does not allow heat or electricity to move easily through it. A poor conductor.

radiation - The transfer of energy through electromagnetic waves.

convection - The transfer of energy by movement of the matter itself.