

Definitions and Concepts for WJEC (Wales) Physics GCSE

Topic 1.3: Making Use of Energy

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

Definitions marked by “” are for separate sciences only*

Conduction: The transfer of heat energy through the vibrations of particles in a medium.

Convection: The transfer of heat energy through convection currents in a fluid.

Density: The mass per unit volume of an object.

Double Glazing: Window panes that have two layers of glass, separated by a vacuum. The vacuum makes it impossible for heat transfer via conduction or convection to occur and so reduces the heat loss of a building.

Draught Excluder: A strip of insulating material that is placed in front of gaps under doors or windows to reduce heat loss and prevent draughts.

Gas: A state of matter in which the particles are spread apart and have high kinetic energies. Any intermolecular forces acting between the particles are very weak.

Heat Transfer: The transfer of thermal energy from a hotter region to a cooler region, through conduction, convection or radiation.

Liquid: A state of matter in which the particles are in contact, but can flow over each other. Intermolecular forces act between the particles.

Mobile Electrons: Electrons that are not bound to atoms. They can travel through a material and transfer energy in the process. Metals containing mobile electrons are better conductors than other materials.

Payback Time: The time it takes for the cost of installing an electricity generating system to be covered by the savings of using the system.

Radiation: The transfer of energy, without the transfer of matter. No medium is needed for radiation to occur.

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Solid: A state of matter in which the particles are tightly packed together and can only vibrate about their fixed positions. Strong intermolecular forces act between the particles

Thermal Energy: The store of energy that all objects with a temperature contain. The higher the temperature, the greater its thermal energy store.

Thermal Insulation: The addition of a material that reduces the amount of heat that is transferred from a system to its surroundings.

