

Definitions and Concepts for AQA Physics GCSE

Topic 1: Energy

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

Definitions marked by '' are for separate sciences only*

Closed System: A system that experiences no net change in its total energy when energy transfers occur within it.

Conservation of Energy: The law that energy can be transferred, stored or dissipated but never created or destroyed.

Efficiency: The ratio of useful output energy transfer to total energy input.

Elastic Potential Energy: The store of energy that stretched or compressed objects experience. It is directly proportional to the stiffness constant and to the square of the extension or compression.

Fossil Fuels: Coal, oil and gas.

Gravitational Potential Energy: The store of energy that all raised matter has. It is directly proportional to the mass of the object, the distance that it is risen and the gravitational field strength at that point.

Joule: The unit used for energy. Equal to the work done when a force of one Newton acts over a distance of one metre.

Kinetic Energy: The store of energy that all moving matter has. It is directly proportional to the object's mass and to the square of its velocity.

Power: The rate at which energy is transferred, or at which work is done.

Renewable Energy Resource: An energy resource that can be replenished whilst it is being used.

Specific Heat Capacity: The amount of energy required to raise the temperature of 1kg of a substance by 1°C.

Spring Constant: A measure of a spring's stiffness. The greater the value, the greater the force required to stretch or compress the spring by a given distance.



System: A single, or group, of objects.

Thermal Conductivity: The higher this value is for a given material, the higher the material's rate of energy transfer via conduction will be.

Waste Energy: Energy that isn't usefully used for the purpose of the system.

Watt: A unit of power. One Watt is equivalent to one joule of work being done in one second.

Work Done: The energy transferred when a force acts over a distance.

