

## Definitions and Concepts for Edexcel Physics GCSE

### Topic 3: Conservation of Energy

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*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. It can never exceed 1 (or 100%), due to the conservation of energy.

**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 raised, and the gravitational field strength at that point.

**Joule:** The unit used for energy.

**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.

**Lubrication:** The application of a lubricant (such as oil) to reduce the friction that acts between surfaces. This may improve the efficiency of a system.

**Non-Renewable Energy Resource:** An energy resource that cannot be replenished whilst it is being used. It is a finite resource.

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

**Thermal Conductivity:** A measure of how good a material is at conducting heat. The higher this value is for a given material, the higher the material's rate of energy transfer via conduction will be.

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**Thermal Insulation:** The application of a material that reduces the amount of heat that is transferred from the system in question, to its surroundings.

**Useful Energy Transfer:** The transfer of energy by a system, to directly serve the purpose of the system.

**Waste Energy Transfer:** The transfer of energy by a system to a form that doesn't directly serve the purpose of the system.

