

JC Physics – Key Definitions

Energy

REVISE
WISE

The ability to do work.

Work

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Work is done when a force moves an object through a distance.

Power

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1. The rate at which work is done.
2. The rate at which energy is converted from one form into another.

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Force

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A force is anything that causes or tends to cause an acceleration.

Momentum

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The momentum of a body is the product of a body's mass and velocity.

Friction

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Is the force that tends to oppose motion.

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Principle of conservation of momentum



States that in any interaction between bodies, the total momentum before the interaction will equal the total momentum after the interaction, provided no external force acts upon the bodies.

Centripetal acceleration



The acceleration of a body in a circular motion. Its direction is towards the centre of the circle.

Centripetal force



The force on a body in circular motion. Its direction is towards the centre of the circle.

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Temperature



The temperature of a body is a measure of how hot it is.

Thermometric property



Any measurable property of a body that changes with temperature.

Heat



Form of energy that causes a rise in temperature when added to a body, or a fall in temperature when withdrawn.

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Heat capacity



The heat capacity of a body is the amount of energy required to raise the temperature of the body by 1K.

Specific heat capacity



The specific heat capacity, c , of a substance is the amount of energy required to raise the temperature of 1 kg of the substance by 1 K.

Latent heat



The latent heat of a body is the energy required to change the state of the body without changing its temperature.

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Specific latent heat



The specific latent heat, l , of a substance is the amount of energy required to change the state of 1 kg of that substance.

Conduction



The transfer of heat within a body without any net movement of the particles of that body.

Convection



The transfer of heat within a body accompanied by the movement of particles of that body.

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Radiation



The transfer of energy across empty space. This is how the heat and light from the sun reach earth.

U-value



The U-value of a structure is the amount of heat energy conducted per second through 1 m^2 of that structure when a temperature difference of 1 K is maintained between its ends.

Solar constant



The average amount of energy from the sun falling per second perpendicularly on 1 m^2 of the earth's atmosphere.