

OCR (B) Physics GCSE

Topic 4.4 - How can we describe motion
in terms of energy transfers?

Flashcards



What type of energy is stored in a moving object?



What type of energy is stored in a moving object?

Kinetic energy.



What happens, in terms of energy, when an object is lifted?



What happens, in terms of energy, when an object is lifted?

Its gravitational potential energy increases.



Give an equation for kinetic energy



Give an equation for kinetic energy

kinetic energy (J) = $\frac{1}{2}$ x mass (kg) x velocity² (m/s)

$$E = \frac{1}{2}mv^2$$



Give an equation for gravitational potential energy



Give an equation for gravitational potential energy

Gravitational potential energy (J) = mass (kg) x
height (m) x gravitational field strength (N/kg)

$$E = mgh$$



Define work done



Define work done

Work is done on the object when energy is transferred from one form to another.



Give the equation for work done



Give the equation for work done

work done (J) = force (N) x distance (m)

$$W = Fd$$

(where distance is the distance moved along the line of action of the force).



When work is done against friction or resistance, what happens?



When work is done against friction or resistance, what happens?

The gain in kinetic energy is reduced because some energy is dissipated through heating.



Define power



Define power

Power is the **rate of energy transfer** (or in other words, the rate at which work is done).



Give an equation for power



Give an equation for power

$$\text{power (W)} = \text{energy (J)} \div \text{time (s)}$$

$$\text{power (W)} = \text{work done (J)} \div \text{time (s)}$$

