CIE Physics GCSE

Topic 1.6 - Momentum

Flashcards

Give the equation for momentum, including units (supplement)

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Momentum (kgm/s) = mass (kg) x velocity (m/s)

The time taken for the change in momentum to occur is proportional to the… (supplement)

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Resultant force felt by the object.

(Newton's second law: F=ma, where mass x acceleration is the rate of change of momentum)

Give the equation linking resultant force and momentum (supplement)

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change in momentum (kgm/s) = resultant force (N) x time (s)

$$mv - mu = Ft$$

Where…

m = mass (kg)

v = initial velocity (m/s)

u = final velocity (m/s)

F = force (N)

t = time (s)

What is impulse? (supplement)

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The change in momentum of an object caused by a force acting on it for a length of time.

What is the principle of conservation of momentum? (supplement)

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Momentum is always conserved in an explosion/collision, so there is no net change in momentum.

Momentum before = momentum after (provided there are no external forces).