

WJEC Wales Physics GCSE

2.4 - Further Motion Concepts

Flashcards

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State the equation used to calculate an object's momentum.



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$$\text{Momentum} = \text{Mass} \times \text{Velocity}$$



What is the unit used for momentum?



What is the unit used for momentum?

kg m/s

Kilogram metres per seconds



In a closed system, what can be said about the momentum before and after a collision?



In a closed system, what can be said about the momentum before and after a collision?

The total momentum before is equal to the total momentum afterwards.



State an equation linking change in momentum, force and time.



State an equation linking change in momentum,
force and time.

Force x Time = Change in Momentum

$$F \Delta t = m \Delta v$$



The time taken for the change in momentum to occur is proportional to the...



The time taken for the change in momentum to occur is proportional to the...

Resultant force felt by the object.

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



What is an alternative name for the turning effect of a force?



What is an alternative name for the turning effect of a force?

A moment.



State the equation used to calculate the moment of a force. Give appropriate units.



State the equation used to calculate the moment of a force. Give appropriate units.

Moment of force = Force x Distance

Moment (Nm), Force (N), Distance (m)



What distance measurement is used when calculating a moment?



What distance measurement is used when calculating a moment?

The **perpendicular** distance from the pivot to the line of action of the force.



If an object is in rotational equilibrium,
what can be said about the moments
acting on the object?



If an object is in rotational equilibrium, what can be said about the moments acting on the object?

The clockwise moments are equal to the anticlockwise moments.



What do u , v and x stand for in the equations of motion?



What do u , v and x stand for in the equations of motion?

- u : initial velocity
- v : final velocity
- x : distance

