

WJEC A-Level Physics

Section 1.3 - Dynamics

Flashcards

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Which of Newton's Laws state 'every action force has an equal and opposite reaction force'?



Which of Newton's Laws state 'every action force has an equal and opposite reaction force'?

Newton's third law.



What is Newton's second law?



What is Newton's second law?

The resultant force of an object is proportional to the rate of change of momentum of the object and acts in the same direction ($F = ma$).



What is Newton's first law?



What is Newton's first law?

An object at rest or moving with constant velocity will stay that way unless a resultant force acts upon it.



What is the difference between elastic and inelastic collisions?



What is the difference between elastic and inelastic collisions?

In an elastic collision, the kinetic energy before is equal to the kinetic energy afterwards – no energy is lost.

In an inelastic collision, the kinetic energy at the end is not equal to the kinetic energy at the start – some energy is lost to the surroundings.



Give an equation that can be used to calculate momentum.



Give an equation that can be used to calculate momentum.

$$\text{momentum} = \text{mass} \times \text{velocity}$$



True or false? Linear momentum is only conserved in elastic collisions.



True or false? Linear momentum is only conserved in elastic collisions.

False, linear momentum is always conserved.



The rate of change of momentum can also be described as...



The rate of change of momentum can also be described as...

Resultant force.



What is impulse?



What is impulse?

The change in momentum

$$F\Delta t = \Delta(mv)$$



What does the area underneath a force-time graph represent?



What does the area underneath a force-time graph represent?

Impulse, the change in momentum.

