

# WJEC England Physics A-Level

## Section 1.3 - Dynamics

### Flashcards

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State Newton's third law.



State Newton's third law.

Every action force has an equal and opposite reaction force.



State Newton's second law.



State Newton's second law.

$$F = ma$$

Where mass ( $m$ ) is constant,  $F$  is the resultant force and  $a$  is the acceleration.



State Newton's first law.



State Newton's first law.

An object remains stationary or moves at a constant velocity until a force acts upon it.

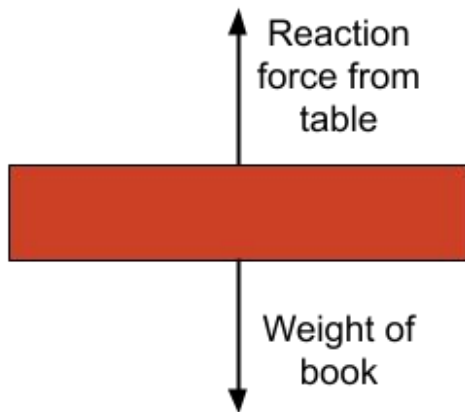


Draw a freebody diagram for a book on a table.





# Draw a freebody diagram for a book on a table



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 is conserved, meaning that the kinetic energy before the collision is equal to the kinetic energy after it.

In an inelastic collision the kinetic energy is **not** conserved, meaning it is transferred to other forms and the kinetic energies before and after the collision are not equal.



State an equation used to calculate momentum.



State an equation used to calculate momentum.

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



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.**



What is the rate of change of momentum equal to?





What is the rate of change of momentum equal to?

Force.



# What is impulse?



# What is impulse?

The change in momentum.

$$\textit{Impulse} = F\Delta t = \Delta mv$$



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



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

Impulse, the change in momentum.

