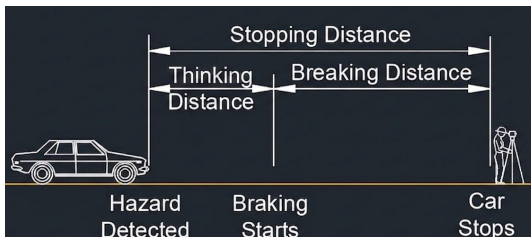
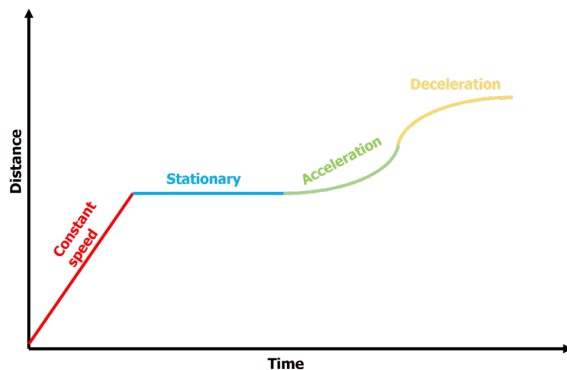


Yr7 Motion and forces knowledge organiser

The gradient of the line is the speed. The steeper the gradient the faster the speed.

This can be calculated with the average speed equation.

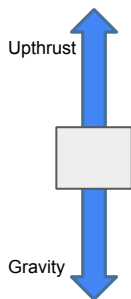


You need to know the factors that increase thinking distance and braking distance.

Free body diagram

Start at the object and point away.

Label the name.



Contact	Non-Contact
Friction Normal contact Air resistance Upthrust Normal reaction	Magnetic Electrostatic Gravity

$$\text{Average Speed} = \frac{\text{Total Distance}}{\text{Total Time}}$$

$$\text{Acceleration} = \frac{\text{change in velocity (in m/s)}}{\text{time taken (in s)}} \quad (\text{in m/s}^2)$$

$$\text{Mean} = \frac{\text{Sum of All Data Points}}{\text{Number of Data Points}}$$

Variable	Unit
Speed	m/s
Distance	m
Time	s
Acceleration	m/s ²
Weight	N
Mass	Kg

Weight = mass x gravity

Unit conversions

1 min = 60s
1 hour = 60mins
1m = 1,000mm
1m = 100cm
1km = 1,000m

Anomalies

These are results which are very different to the other repeats. You can re-do the result, or discount them from the mean.