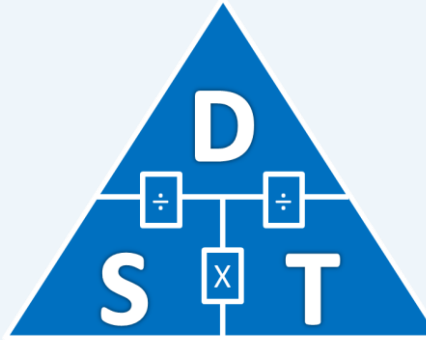


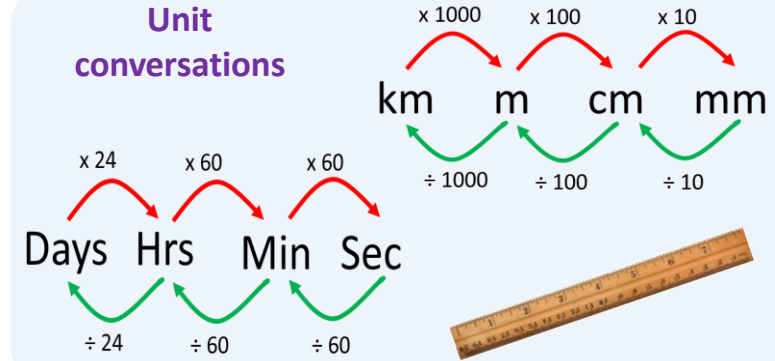
Physics: Motion and Speed

The Speed Equation

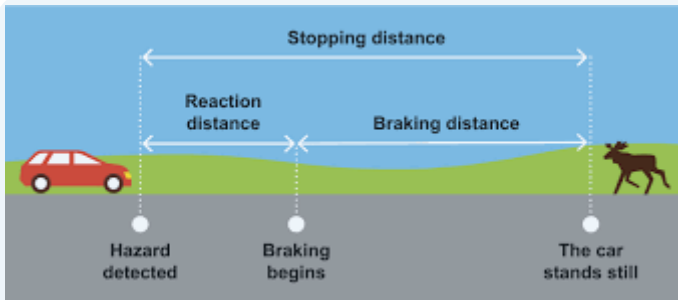


D = Distance
S = Speed
T = Time

Unit conversions



Key word	Definition
Speed	How far an object travels in a certain time
Velocity	Speed in a given direction
Stopping distance	The distance that a driver needs in order to safely bring a vehicle to a complete stop
Thinking distance	The distance a vehicle travels in the time it takes for the driver to apply the brakes after realising they need to stop.
Braking distance	The distance a vehicle travels in the time after the driver has applied the brake.
Pressure	The force applied to a certain area
Force	A push or a pull
Acceleration	When an objects speed increases



$$\text{Stopping Distance} = \text{Thinking Distance} + \text{Braking Distance}$$

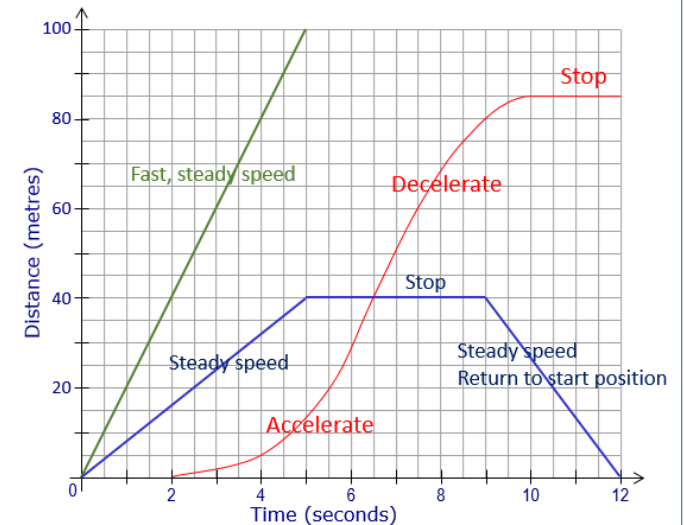
Factors which affect Breaking Distance:

- Heavy car
- Worn tyres
- Worn breaks
- Wet roads

Factors which affect Thinking Distance:

- Tiredness
- Distractions
- Drugs
- Alcohol

Distance-Time Graph



The **green line** shows a fast, steady speed, moving from 0 to 100 m in 5 seconds.
The **blue line** shows a journey with a stop and a return to the starting position.
The **red line** shows a journey starting 2 seconds later than the other two, with an initial acceleration, then a deceleration and then a stop.