

# Need to Know TRANSPORT 1

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## In the TRANSPORT PART 1 TOPIC

1. I know and can demonstrate how to travel safely.
2. I am learning to assess and manage risk, to protect myself and others, and to reduce the potential harm where possible.
3. I can persuade, argue, explore issues or express an opinion using relevant supporting detail and or evidence
4. When listening and talking with others for different purposes, I can:
  - communicate information, ideas or opinions
  - explain processes, concepts or ideas
  - identify issues raised, summarise findings or draw conclusions.
5. I know the common road signs from the Highway Code
6. I know the difference between a warning triangle sign and an order sign in a circle.
7. *I know the definitions (meanings) of the words in the table.*
8. I can find the mean average of several numbers using a calculator.
9. In Physics we show the divide by sign as a line and say “over”
10. I can FIX my calculator FIX allows you to fix how many figures after the decimal point should be displayed i.e. it fixes the number of decimal places you quote a value to. This is really useful if you suffer from calculator diarrhoea, but be careful you could end up with zero!
11. I can lay out equations using the acronym I.E.S.S.U.U.
12. I know that the reaction time is the time it takes a person to react to a situation and understand the dangers.
13. The distance that a car travels during the driver’s reaction time is called the *Thinking Distance*.
14. *Braking distance* is the distance the vehicle will travel as the brakes are applied
15. The **STOPPING DISTANCE** of a car is made up of **TWO** parts: **THINKING DISTANCE** and **BRAKING DISTANCE**. I know that *stopping distance = thinking distance + braking distance*.
16. I can identify things that affect, thinking distance and braking distance, all of which will change the stopping distance.
17. Police speed camera usually measure the instantaneous speed of a vehicle.

18. To measure instantaneous speed use a light gate attached to an interface and computer. The length of the object divided by the time it takes the object to pass through the light gate = instantaneous speed.

19.  $average\ speed = \frac{Total\ distance\ travelled}{Time\ for\ the\ journey}$   $\bar{v} = \frac{d}{t}$

20.  $instantaneous\ speed = \frac{length}{Time\ to\ pass\ a\ point}$   $v = \frac{l}{t}$

21.  $uniform\ speed = \frac{distance\ travelled\ without\ speeding\ up\ or\ slowing\ down}{Time\ for\ covering\ this\ distance}$   $v = \frac{d}{t}$

22. Speed is given as the MAIN cause of FATAL ACCIDENTS on Scotland's Roads

23.  $Velocity = \frac{Displacement}{Time}$

24. Velocity is the displacement covered during the journey divided by the time taken. It is measured in metres per second m/s. You must quote a direction when writing down a velocity

### Table of Quantities Units and Symbols

Quantity	Symbol	Unit	Unit Symbol
distance	<i>d</i>	metre	m
time	<i>t</i>	second	s
average speed	$\bar{v}$	metres per second	m/s or ms <sup>-1</sup>
instantaneous speed	<i>v</i>	metres per second	m/s or ms <sup>-1</sup>
uniform speed	<i>v</i>	metres per second	m/s or ms <sup>-1</sup>
<i>speed</i>	<i>v</i>	metres per second	m/s or ms <sup>-1</sup>
displacement	<i>s</i>	metre	m
velocity	<i>v</i>	metres per second	m/s or ms <sup>-1</sup>

learn the definitions on the separate sheet.

Term	Meaning
At rest	not moving, the object is stationary. It is not the same word as pens and pencils which are stationery!
Average Speed	the distance of the whole journey divided by the time for the whole journey.
Braking Distance	distance the vehicle will travel as the brakes are applied.
Displacement	how far you have travelled in a straight line. We would say "as the crow flies" <i>You must quote a direction when writing down a displacement.</i>
Distance	is how far you have travelled. It is another name for length.
Dynamics	the part of mechanics dealing with Forces.
Instantaneous Speed	the speed at which you are travelling over a very short distance.
Kinematics	Kinematics means the part of mechanics dealing with motion, speed, acceleration etc
Mechanics	Mechanics is the branch of Physics dealing with motion (how things move)
Reaction Time	the time it takes a person to react to a situation and understand the dangers.
Scalar	A quantity that is fully described by a value and unit
Speed	is the distance travelled in unit time.
Stopping Distance	<b><i>stopping distance= thinking distance + braking distance.</i></b>
Thinking distance	is the distance a vehicle will travel in the time it takes you to react to the situation.
Time	Time- is how long your journey took. It is measured in seconds or during our road safety topic hours. We never write sec or secs in Physics to mean seconds
Uniform Speed	when your speed isn't changing, it remains constant.
Vector	A quantity that is fully described by a value, unit and direction
Velocity	<i>displacement covered during the journey divided by the time taken. You must quote a direction when writing down a velocity</i>