

How Fast is that Car?

Challenge the pupils to measure local traffic speed

12+

Estimate
and
Measure



Learning the **speed, distance and time formula** for numeracy or physics readily lends itself to classroom-based worked examples. However, if the students are actually finding out the speed of the traffic that passes their own school gate and the potential implications/campaign opportunities as a result of their findings then the learning has become much more relevant and pupil-centric with sound links to be made to **health and wellbeing** and **citizenship**.

To support pupils' ability to judge risk ensure that you have risk assessed working alongside a road and engage the class fully in this management process. Think about places you could use where the children would be behind a barrier along a pavement, in the school grounds or a local park.

Preparation

In class, introduce the challenge of measuring the local traffic speed. The students need to ascertain what information they will require from the vehicles in order to calculate speed. i.e.

- Distance travelled
- Time taken

They must also plan the practical task and how they intend to record this required information. Each group should aim to record the speed of each of the various vehicle types.

Equipment

- Chalk
- Stop clock
- Tape measure
- Clipboards and worksheets overleaf

Activity

Choose a stretch of road where there is a regular flow of traffic and from a safe distance measure out a timed length, marking the beginning and end with chalk or cones.

Each group needs four or more people:

1. to indicate when the traffic enters the timing area
2. to indicate when the traffic leaves the timing area
3. to operate the stopwatch
4. to record timings and vehicle type

Back in class

Each group needs to work together to calculate the traffic speed at first in m/s. More able pupils could be challenged to convert from m/s to km/h and then mph. The worksheet overleaf gives details.



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Name:

Date:

Vehicle Type (Bus, car, van etc)	Time taken between measurement points in seconds.	Speed in metres per second. (Divide distance by time)	Speed in kilometres per hour (Multiply m/s by 3.6)	Speed in miles per hour (Divide km/h by 1.6)
<i>Example 1 - Bus</i>	<i>3.2 seconds</i>	$\frac{25m}{3.2s}$	$7.81 \text{ m/s} \times 3.6$	$28.12 \text{ kph} / 1.6$
<i>Results</i>		$= 7.81 \text{ m/s}$	$= 28.12 \text{ kph}$	$= 15.7 \text{ mph}$
1				
Results				
2				
Results				
3				
Results				

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