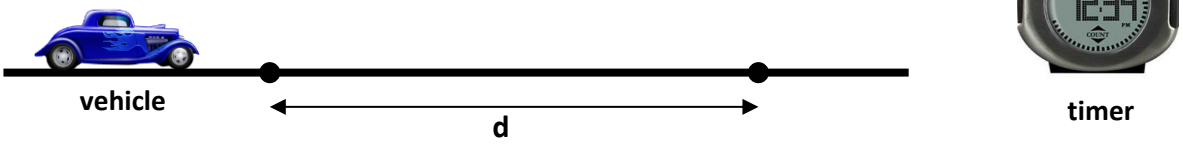
N4

Measuring Average Speed ($\bar{v}$)

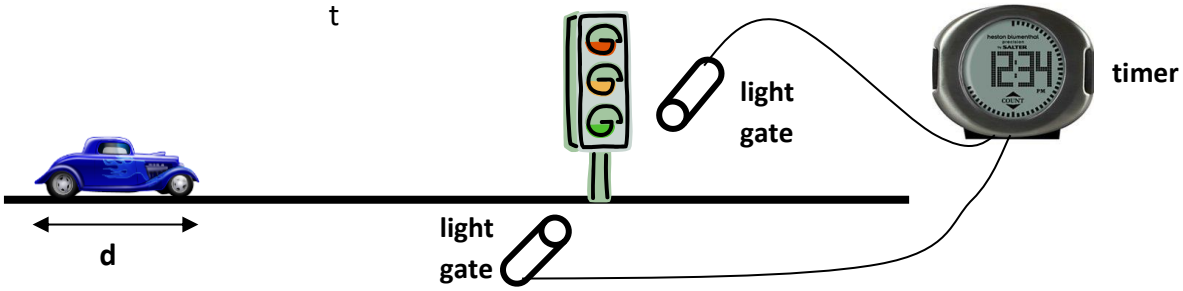
- Measure distance (**d**) travelled with a measuring tape.
- Measure time (**t**) taken for the vehicle to travel the distance (d) with a timer.
- Use the equation $\bar{v} = \frac{d}{t}$ to calculate the average speed ($\bar{v}$).



N4

Measuring Instantaneous Speed (v)

- Measure the length of the vehicle (or card attached to the vehicle) (**d**) with a measuring tape.
- Measure time (**t**) taken for the vehicle to pass a point with a light gate connected to a timer.
- Use the equation $v = \frac{d}{t}$ to calculate the instantaneous speed (**v**).



Example: Calculate the speed of a car as it passes through the traffic lights. The car is 4m long and takes 0.75s to pass the traffic lights.

List	**Equation**	d = v t
d= 4m	**Substitute**	4 = v x 0.75
v = ?	**Answer & units**	$v = 5.33 ms^{-1}$
t = 0.75s		