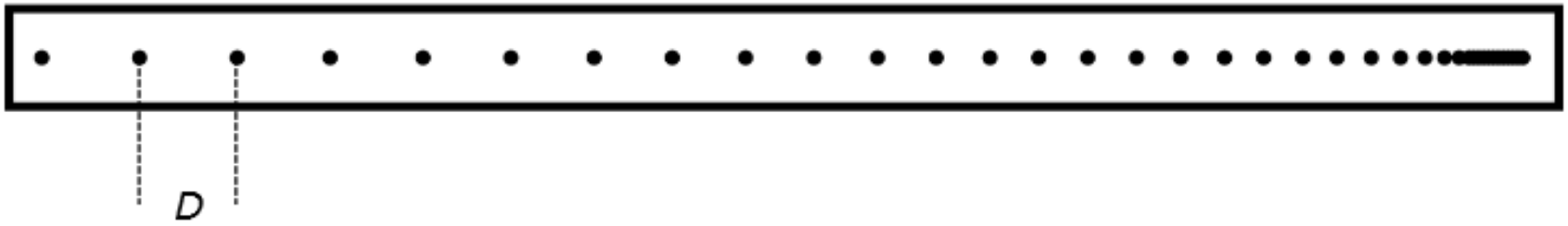
Ticker Tape

- Because the timer is supplied with AC at 50Hz (mains frequency), it produces a dot on the paper every 50 th of a second (or 20ms = 0.02s). Therefore, the distance between each dot is the distance travelled by the trolley in 0.02s.

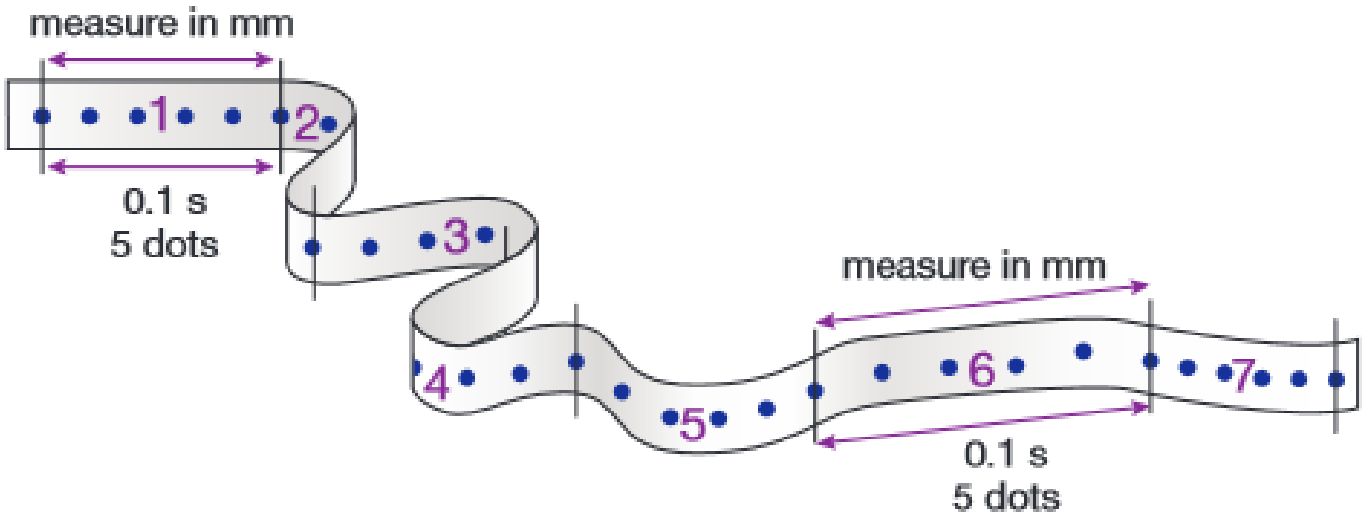
$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

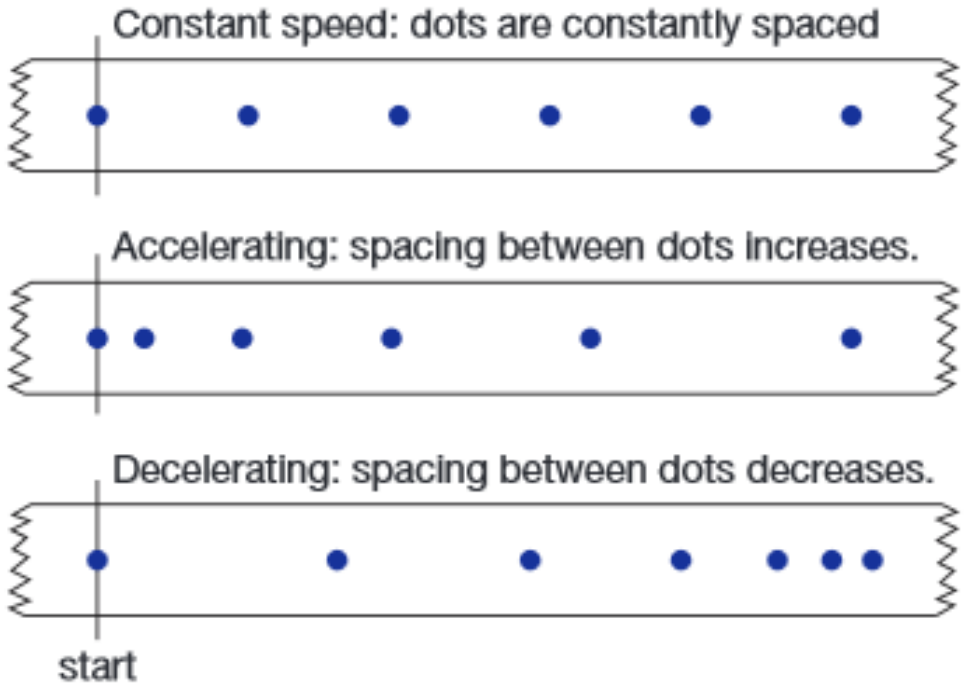


In the example above, the distance *D* is measured to be 0.011m, so the speed at which the vehicle was going at this time was:

$$\text{speed} = \frac{0.011\text{m}}{0.02s} = 0.55ms^{-1}$$

- The ticker tape makes it very easy to plot speed against time. Cut the ticker tape at the position of the 5 th mark, and every 5 marks after that. Keep the cut lengths of tape in order. Each 5 dots on the tape, and therefore each length of tape cut, represents 1/10 th of a second. The length of the tape is the distance travelled in that time, and is therefore proportion al to the speed.





$$\%\ \text{error} = \frac{\left|\ \text{Accepted Value} - \text{Experimental Value}\ \right|}{\text{Accepted Value}} \times 100\%$$