



Speed

Physics

Year-8

Cambridge Secondary-1

Part-1

www.tutorfor.co



Speed

- Speed is a measure of how fast something is moving.



$$\text{Speed} = \frac{\textit{distance}}{\textit{time}}$$

Units of speed

- meters per second (m/s)
- Kilometers per hour(km/h)

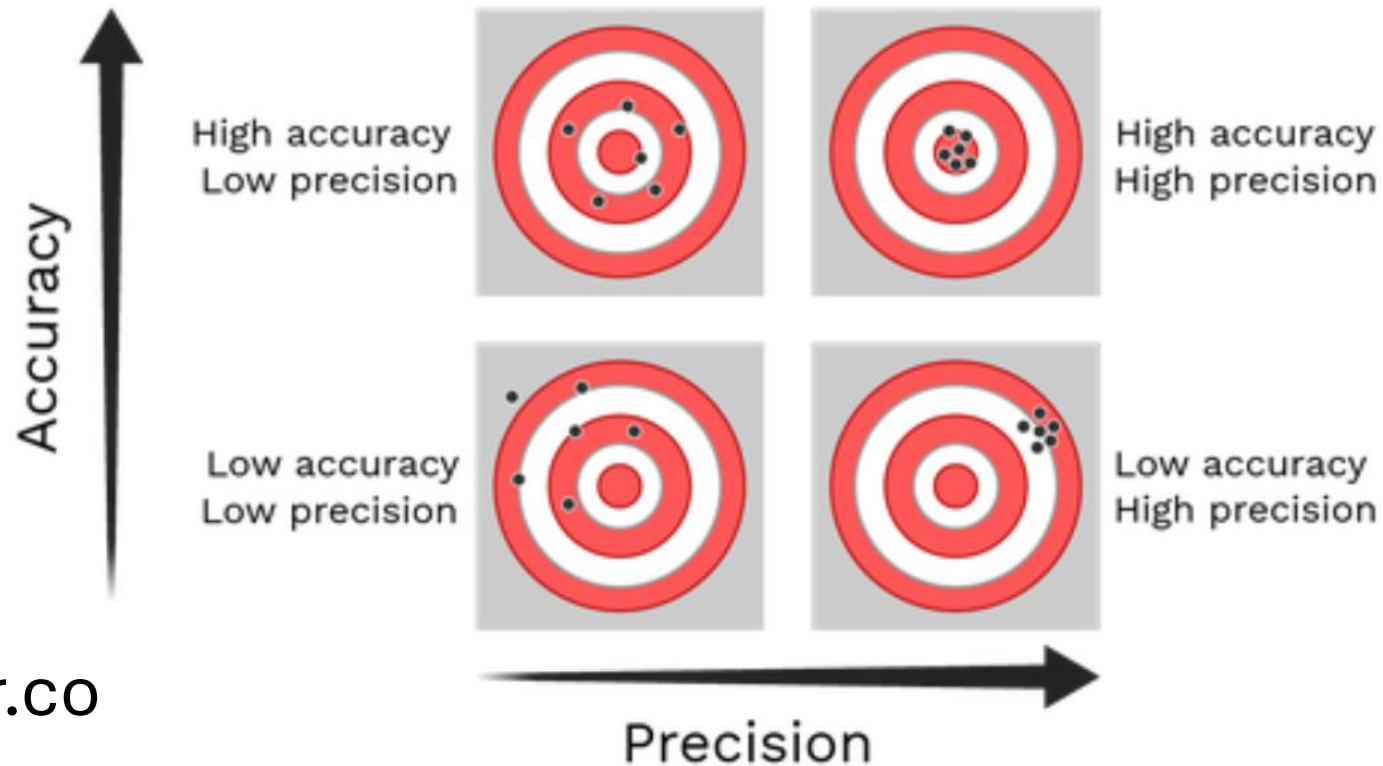
Average speed

- Average speed is a measure of the overall speed of an object.

$$\text{Average speed} = \frac{\textit{total distance}}{\textit{total time}}$$

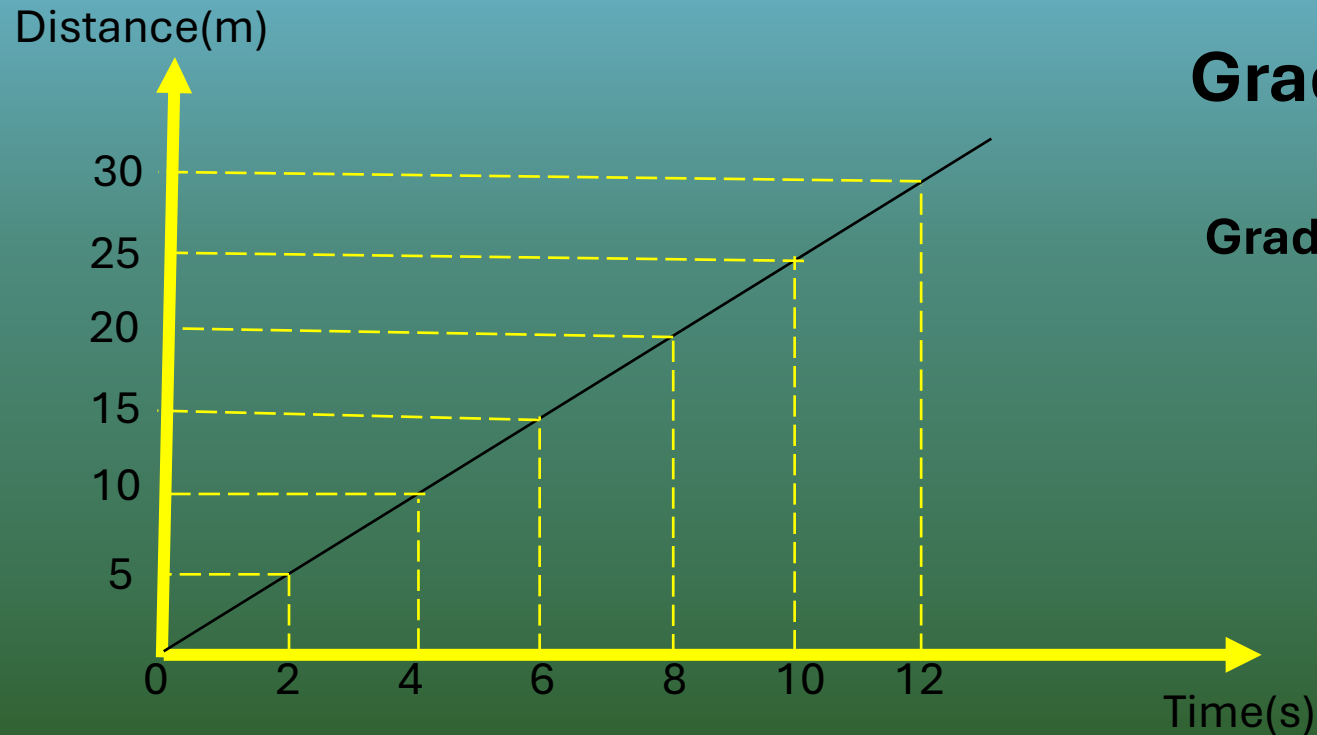
Precision & Accuracy.

- Precision is shown by the number of significant figures.
- Accuracy tells you how correct a measurement is.
- Reaction time is the time(delay) it takes the brain to process information.



Distance-time graphs

Time(s)	0	2	4	6	8	10	12
Distance(m)	0	5	10	15	20	25	30

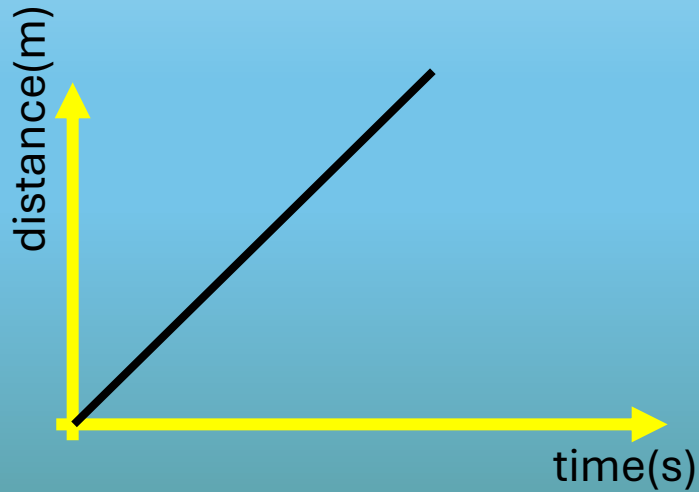


$$\text{Gradient} = \frac{\text{difference in } y}{\text{difference in } x}$$

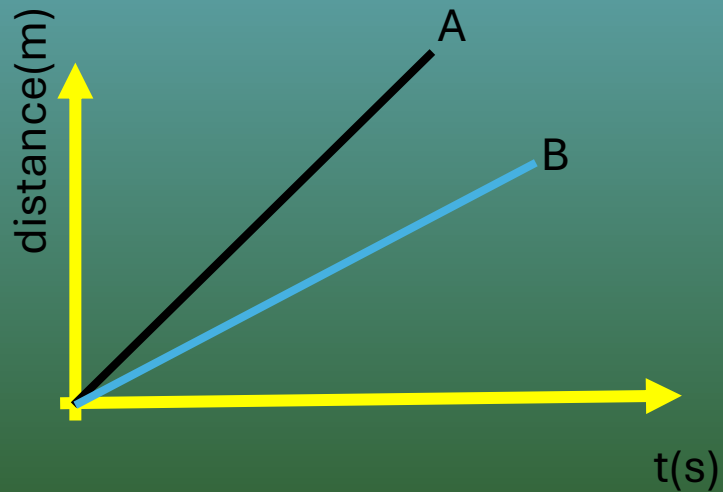
$$\text{Gradient} = \frac{(30-5) \text{ m}}{(12-2) \text{ s}} = \frac{25}{10} \text{ m/s} = +2.5 \text{ m/s}$$

Gradient of a distance-time graph shows the speed of the object

Distance-time graphs(s-t graphs)

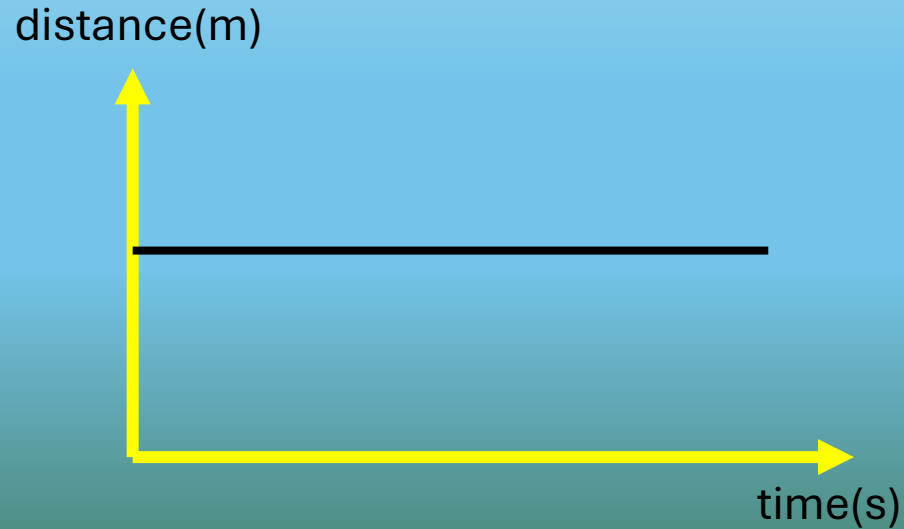


The object is moving with a steady(constant) speed.

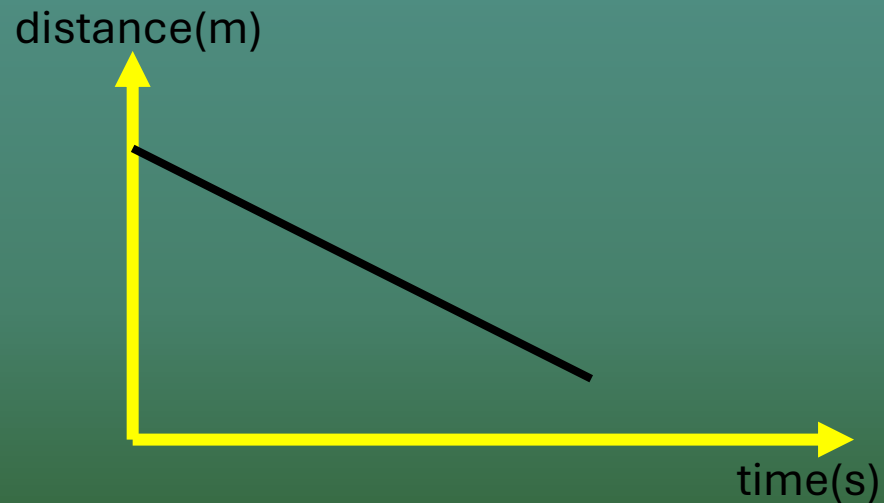


The object A is moving with a higher steady(constant) speed than object B.

Distance-time graphs(s-t graphs)

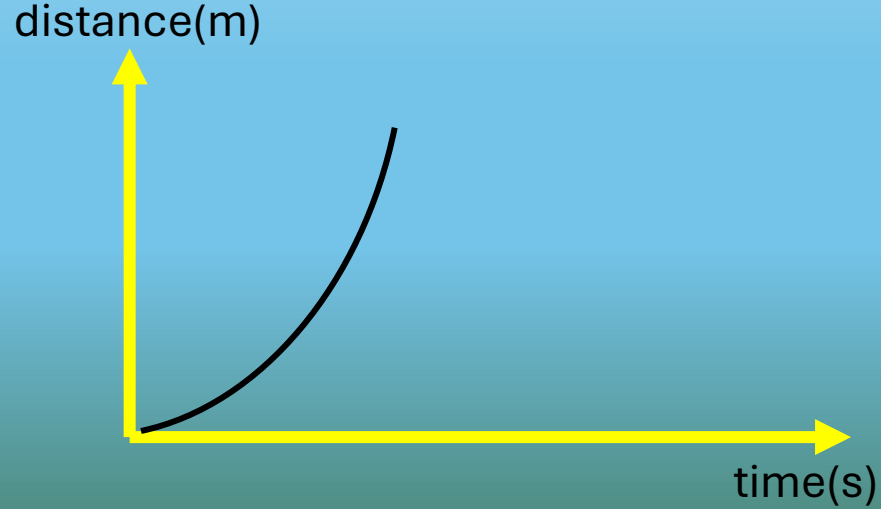


The object is not moving(stationary)

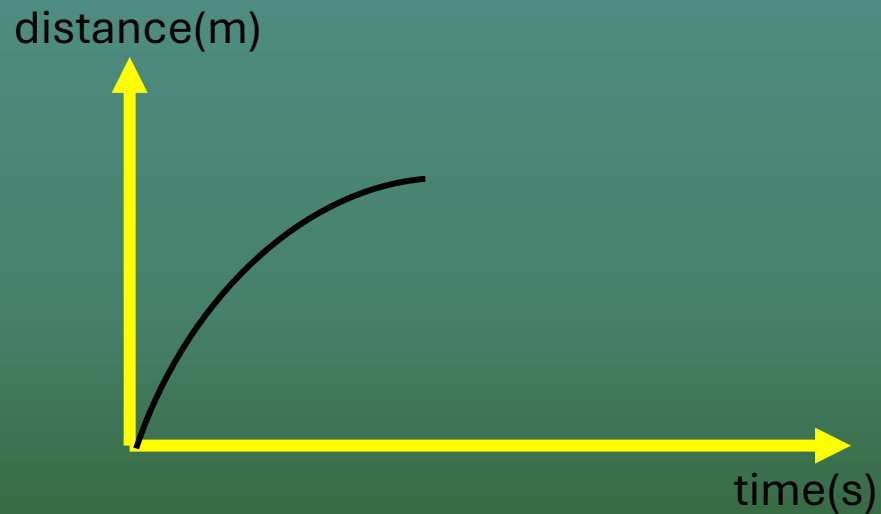


The object is moving towards the initial direction(opposite direction) with a constant speed.

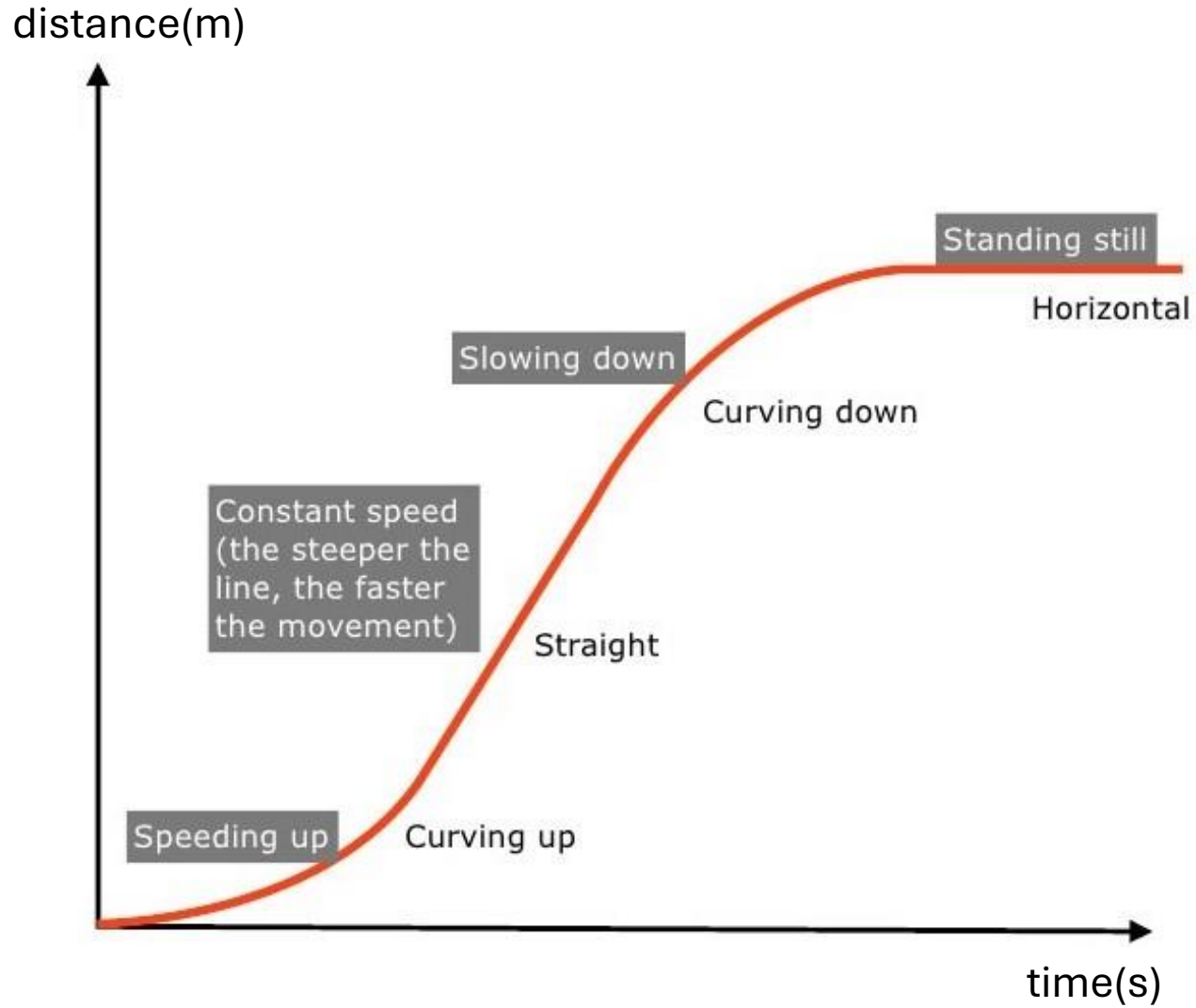
Distance-time graphs



The object is moving with an increasing speed(acceleration)



The object is moving with a decreasing speed(deceleration).



Summary