



Chapter 4



Describing Motion Around Us



Understanding how things move helps us make sense of the world.



Observe



Think



Experiment



Explore



Discover



MOTION AROUND US

Motion means a change in position with time.

We see motion everywhere.

- car on a road



- falling ball



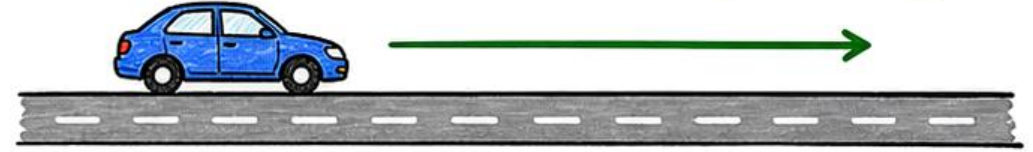
- flying bird



- Earth around the Sun



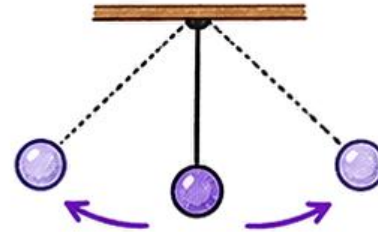
LINEAR MOTION — moves along a straight line



CIRCULAR MOTION — moves around a centre



OSCILLATORY MOTION — moves to and fro about a fixed position

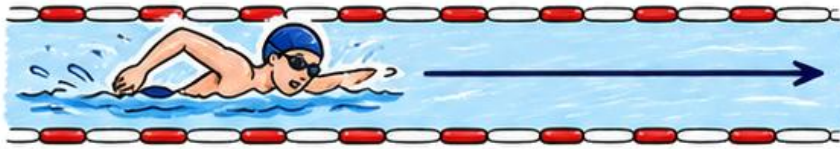


To describe motion, we use position, distance, displacement, speed, velocity and acceleration.

STRAIGHT-LINE MOTION

LINEAR MOTION

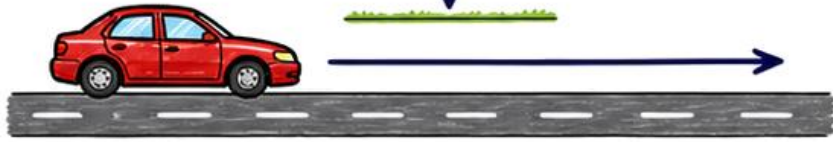
When an object moves along a straight line, it has linear motion.



Swimmer



Ball falling vertically



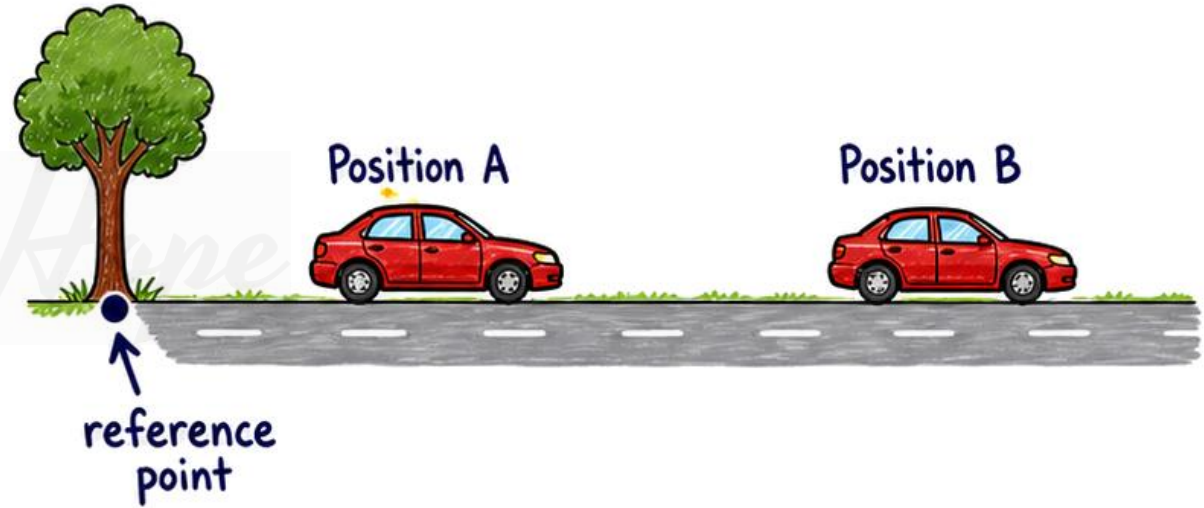
Car on a straight road



Train on a straight track

REFERENCE POINT

A reference point is a fixed point used to describe position.



AT REST: position does not change with time.

IN MOTION: position changes with time.

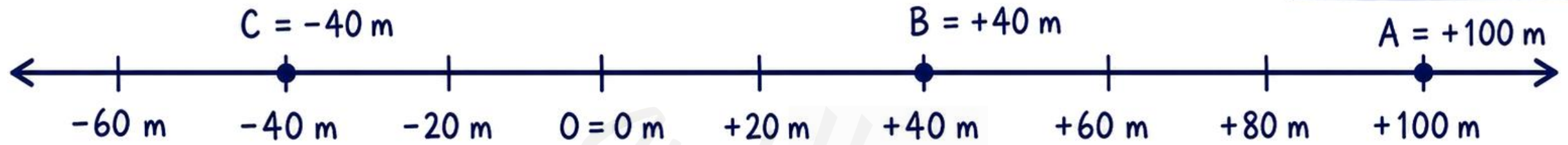
Rest and motion are always described relative to a reference point.

POSITION, ORIGIN AND DIRECTION

POSITION tells where an object is.



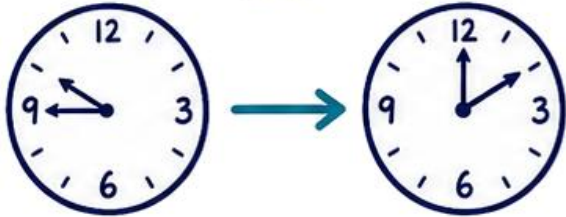
Position = distance + direction from a reference point.



TIME WORDS



Instant: one clock reading.



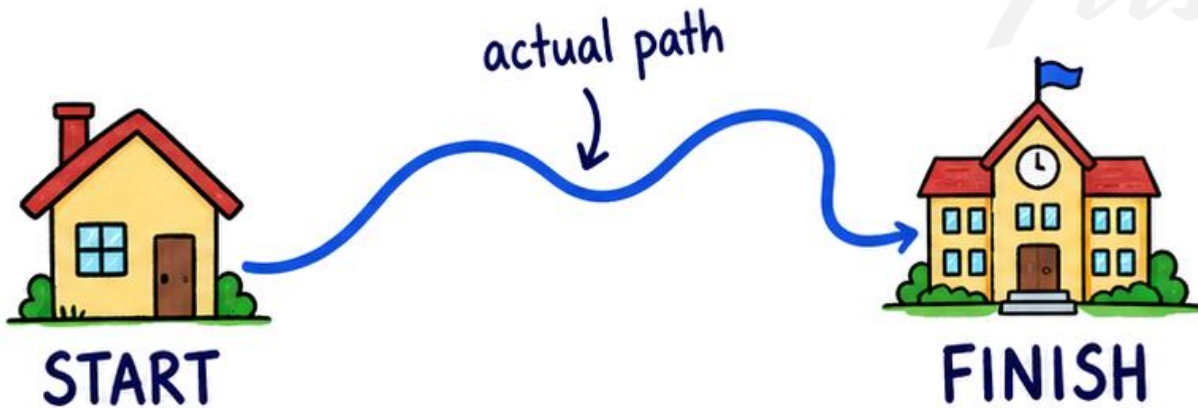
Time interval: duration between two instants.

Choose the origin and positive direction first. Keep them unchanged while solving.

DISTANCE AND DISPLACEMENT

DISTANCE TRAVELLED

- Total length of the actual path.
- Has magnitude only; no direction.
- SI unit: metre (m).



DISPLACEMENT

- Net change in position.
- Straight line from start to finish.
- Has magnitude and direction.
- SI unit: metre (m).



Distance follows the path. Displacement joins the starting and final positions.



FREE PREVIEW

[Click here to visit our website](#)

SCHOOL NOTES & NCERT SOLUTIONS

Complete notes and
NCERT solutions are
available on
FirstHope app only.



[Scan or click here](#)

Click here to get the app



Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

Join our Telegram channel

Click here to join Telegram



[Scan or click here](#)

@FirstHope_CBSE_Notes

Instagram

@firsthope.school

[Click here to follow >](#)

YouTube channel

@firsthope.school

[Click here to watch >](#)

FirstHope website

firsthope.co.in

[Click here to visit our website >](#)

CBSE / Class 9 / Class 10 / Class 11 / Class 12

Preview notes and NCERT solutions. Full PDFs in the FirstHope app.