

4

Motion - An object's change in position relative to a point. (stationary point, reference point, reference frame)

When objects change position in comparison fixed point, the object is in motion.

Distance is the actual path taken (measure of the distances)

Displacement is the change in position of an object.

A scalar is a quantity that can be completely described by a single value called magnitude.

Magnitude means the size or amount and always includes units of measurement.

Distance, time, temperature and speed are scalars because all three can be completely described with a single number and a unit.

A vector is a quantity that includes both magnitude and direction.

Forces, velocity, and acceleration are vectors.

## SPEED AND VELOCITY

Speed is the distance traveled divided by the time interval during which the motion occurred.

Speed describes how fast an object moves. (rate of change in position)

A) Instantaneous speed

Example – speedometer on a car

B) Constant speed

Example – cruise control

C) Average speed

Example – time it takes divided by the distance from home to school.