KINEMATICS

BASICS

The basics are speed, time, and distance.

formula

$$v = \frac{\text{distance (s)}}{\text{time (t)}}$$

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

?

symbols:

- speed = v
- time = t
- distance = s

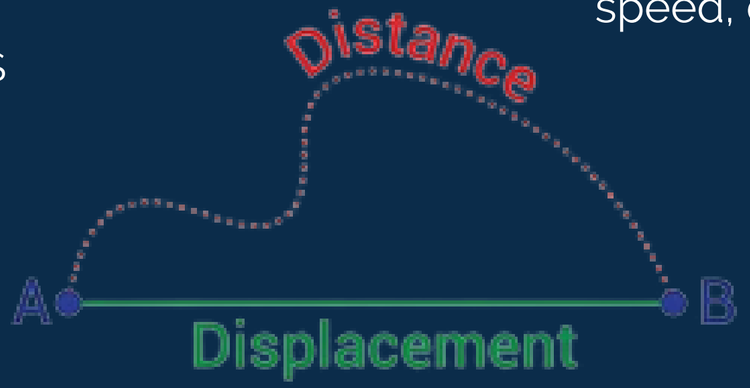
units (speed):

- m/s
- km/h

SCALAR & VECTOR

distance	displacement
• total distance traveled • doesn't need NEWS	• distance from start to end • needs NEWS

scalar	vector
• distance • doesn't have directions (length, area, volume, speed, density, etc)	• displacement • has direction (displacement, velocity, acceleration, etc)



P.S. NEWS is north, east, west, south.

ACCELERATION & DECELERATION

acceleration	deceleration
speed becomes faster.	speed becomes slower.

units:

- speed -> m/s
- acceleration -> m/s/s -> m/s^2

formula

$$V_F = t \times a + v_i$$

symbol:

- acceleration = a
- v_F = final speed
- v_i = initial speed

example

+5 m/s every second

speed (v)