

Velocity: Changing displacement  
over a period of time.

$$v = \frac{d}{t} \quad (\text{how fast is your displacement changing?})$$

# Acceleration :

How quickly is your velocity changing?

1. Speeding up ( $a, v$  in the same direction)
2. Slowing down ( $a, v$  in opposite directions)
3. Changing direction

$$\text{acceleration} = \frac{\text{change in velocity}}{\text{amount of time}}$$
$$a = \frac{v - v_0}{t}$$

final velocity  $\rightarrow$   $v$   $\leftarrow$  initial velocity  $v_0$

→ things that accelerate quickly aren't necessarily moving fast!

→ things that are accelerating slowly aren't necessarily moving slowly!