



Constant Velocity Equations (No Acceleration)	Changing Velocity Equations (Including Acceleration)	
$v = \frac{\Delta d}{t}$	If $v_i = 0$	If $v_i \neq 0$
$\Delta d = v \cdot t$	$a = \frac{\Delta v}{t}$	or $a = \frac{v_f - v_i}{t}$
	$\Delta v = a \cdot t$	or $v_f = a \cdot t + v_i$
	Acceleration & Distance	
	If $v_i = 0$	If $v_i \neq 0$
$t = \sqrt{\frac{2d}{a}}$	$d = \frac{1}{2} \cdot a \cdot t^2$	or $d = v_i \cdot t + \frac{1}{2} \cdot a \cdot t^2$

Velocity: Rate at which *distance* changes
Labeled in units of *distance per time*

Acceleration: Rate at which *velocity* changes
Labeled in units of *velocity per time*

Name	Symbol	Unit	Notes
Time	t	second	
Distance (displacement)	d	meter	
Velocity (average)	v	m/s	
Velocity (initial)	v_i	m/s	
Velocity (final)	v_f	m/s	
Acceleration	a	m/s ²	
Acceleration (gravity)	g	m/s ²	- 9.8 m/s ²

Key Terms: Linear Motion

Name: _____

Average Acceleration:

Constant Acceleration:

Average Speed:

Constant Speed:

Average velocity:

Displacement:

Distance:

Elapsed time:

Free fall:

Instantaneous speed/velocity:

Linear:

Midpoint:

Position:

Rate:

Relative:

Scalar:

Speed:

Vector:

Velocity: