NAME	SYMBOL	UNIT	FORMULA
Velocity			
velocity	v	m/s (meters per second)	$v = \frac{d}{t}$
distance	d	m (meters)	
time	t	s (seconds)	
Acceleration			
acceleration	a	m/s^2 (meters per seconds squared)	$a = \frac{v_f - v_i}{t}$
final velocity	v_f	m/s (meters per second)	
initial velocity	v_i	m/s (meters per second)	
time	t	s (seconds)	
Distance fallen in free fall			
distance	d	m (meters)	$d = \frac{1}{2}gt^2 \qquad \left(g = 9.8\frac{m}{s^2}\right)$
gravity	g	m/s^2 (meters per seconds squared)	
time	t	s (seconds)	
Weight			
weight	w	N (Newtons)	$w = mg \qquad \left(g = 9.8\frac{m}{s^2}\right)$
mass	m	kg (kilograms)	
gravity	g	m/s^2 (meters per seconds squared)	
Force (Newton's 2nd Law)			
force	F	N (Newtons)	$F = ma$
mass	m	kg (kilograms)	
acceleration	a	m/s^2 (meters per seconds squared)	
Momentum			
momentum	p	kgm/s (kilograms meters per second)	$p = mv$
mass	m	kg (kilograms)	
velocity	v	m/s (meters per second)	
Work			
work	W	J (Joules)	$W = Fd$
force	F	N (Newtons)	
distance	d	m (meters)	
Power			
power	P	W (Watts)	$P = \frac{W}{t}$
work	W	J (Joules)	
time	t	s (seconds)	
Potential Energy			
potential energy	PE	J (Joules)	$PE = mgh \qquad \left(g = 9.8\frac{m}{s^2}\right)$
mass	m	kg (kilograms)	
gravity	g	m/s^2 (meters per seconds squared)	
height	h	m (meters)	
Kinetic Energy			
kinetic energy	KE	J (Joules)	$KE = \frac{1}{2}mv^2$
mass	m	kg (kilograms)	
velocity	v	m/s (meters per second)	

Newton's 1st Law of Motion (Inertia): Every object continues in a state of rest or of uniform speed in a straight line unless acted upon by a nonzero force.

Newton's 3rd Law of Motion: Whenever one object exerts a force on a second object, the second object exerts an equal and opposite force on the first object.

Net Force: The net (or total) force acting on an object equals the sum of all the forces acting in the same direction and the difference of all the forces in the opposite direction.

Conservation of Momentum (Collisions): The total momentum of objects before a collision equals the total momentum after the collision.

Conservation of Energy (Free Falling Object): The total energy in a system is constant, so the total energy at any given point is the same at any other point. Total energy equals the sum of the potential energy and kinetic energy at a given point.