Applied Physical Science
Force and Motion

Course Objectives

1. Calculate velocity and acceleration.
2. Define force.
3. Identify common units of force.
4. Explain different types of force and give examples of each.
5. Define balanced and unbalanced forces.
6. Describe the effects of centrifugal and centripetal forces.

Key Terms (Define the following)

velocity - _____

_____

acceleration - _____

_____

force - _____

_____

gravity - _____

_____

friction - _____

_____

normal force - _____

_____

drag - _____

_____

tension - _____

_____

spring force - _____

_____

Hooke's Law - _____

_____

spirng constant - _____

_____

torque - _____

_____

buoyancy - _____

_____

electromagnetic force - _____

_____

balanced force - _____

_____

unbalanced force - _____

_____

centripetal force - _____

_____

centrifugal force - _____

_____

Principles

Velocity

$$\textbf{velocity} = \frac{\text{change in displacement}}{\text{time}}$$

$$\mathbf{v} = \frac{\Delta x}{t}$$

Acceleration

$$\textbf{acceleration} = \frac{\text{change in velocity}}{\text{time}}$$

$$\mathbf{a} = \frac{\Delta v}{t}$$

Force

$$\textbf{Force} = \text{mass } \mathbf{x} \text{ acceleration}$$

$$\mathbf{F} = m\,a$$

Questions

1. Describe the First Law of Motion.

2. Newton's Second Law of Motion -
   A force acting on a body gives it _____ in the _____ of the force.

3. Describe an application of Newton's Third Law of Motion.