

Grade 8 Science Quarter 2

By the end of the second quarter, you should be able to demonstrate your understanding of the coursework in the following ways.

Forces & Motion

Speed, Velocity, Acceleration

- Compare distance traveled vs. displacement of object
- Compare average vs. instantaneous speed of object
- Illustrate the motion of objects in graphs of distance over time
- Interpret graphs of distance vs. time and velocity vs. time.
- Compare velocity and acceleration
- Compare positive and negative acceleration
- Utilize vectors to illustrate the motion of objects
- Indicate how frame of reference is applicable to situations in which velocity is measured
- Contrast and compare scalar and vector quantities
- Apply formula for speed, velocity, acceleration & solve math word problems, including units

Momentum, Conservation of Momentum

- Apply formula for momentum & solve math word problems
- Explain the law of conservation of momentum

Balanced/Unbalanced Forces

- Compare balanced and unbalanced forces
- Use free body diagrams to indicate the forces acting on an object

Newton's First Law of Motion, Newton's Second Law of Motion, Newton's Third Law of Motion

- Describe the qualitative relationships among force, mass and changes in motion
- Explain how Newton's laws can be shown in everyday situations
- Identify sources and types of friction
- Explain projectile and satellite motion
- Explain the forces that affect falling objects and whether or not heavier objects fall faster than light objects

Centripetal Force & Circular Motion

- Describe the forces acting on an object moving in a circular path.

Earth in the Solar System

Law of Universal Gravitation & Orbits of Planets

- Use the formula for the law of universal gravitation to explain how all objects exert gravitational force on each other, and how that force varies with distance and mass
- Explain how a person's weight varies on different planets, and to some degree, on Earth
- Explain the effect of gravity on the orbital movement of planets in the solar system.

