

Curriculum

Class : 10 IP

Subject : Physics

Teacher's name : Ziad Mina

Cycle : Secondary

Textbook : Holt McDougal

Coordinator : Dr. Jamal Bitar

HOD : Miss Wafa Bitar

Unit	Objectives
<p style="text-align: center;">Unit 1 : Mechanics</p>	<ul style="list-style-type: none"> • Describe motion in terms of frame of reference, displacement, time and velocity. • Calculate the displacement of an object traveling at a known velocity for a specific time. • Construct and interpret graphs of position versus time. • Describe motion in terms of changing velocity • Compare graphical representations of accelerated and non-accelerated motions • Apply kinematic equations to calculate distance, time, or velocity under conditions of constant acceleration. • Relate the motion of a freely falling body to motion with constant acceleration • Calculate displacement, velocity and time at various points in the motion of a freely falling object. • Distinguish between scalar and vectors • Add and subtract vectors; • Multiply and divide vectors by scalars • Apply the Pythagorean theorem and tangent function to calculate the magnitude and direction of resultant vector • Resolve vector into components using sine and cosine functions. • Explain the difference between mass and weight • Find the direction and the magnitude of the normal forces • Describe air resistance as form of friction; Use coefficients of friction to calculate frictional forces. • Describe how force affects the motion of an object; • Interpret and construct the free-body diagrams.

Unit	Objectives
<p style="text-align: center;">Unit 1: Mechanics</p>	<ul style="list-style-type: none"> • Explain the relationship between the motion of an object and the net external force acting on the object • Determine the net external force on an object • Calculate the force required to bring an object into equilibrium • Describe an object's acceleration in terms of mass and the net force acting on it; • Predict the direction and magnitude of the acceleration caused by a known net force • Identify action-reaction pairs. • Explain how Newton's law of universal gravitation accounts for various phenomena, including satellite, planetary orbits, falling objects and the tides. • Apply Newton's law of universal gravitation to solve problems.
<p style="text-align: center;">Unit 2 : Optics</p>	<ul style="list-style-type: none"> • Recognize situations in which refractions will occur; Identify which direction of light will bend when it passes from one medium to another • Solve problems using Snell's laws. • Use ray diagrams to find the position of an image produced by a converging or diverging lens, and identify the image as real or virtual • Solve problems using the thin-lens equations • Calculate the magnification of lenses. • Distinguish local particle vibrations from overall wave motion • Differentiate between pulse waves and periodic waves • Interpret waveforms of transverse and longitudinal waves • Apply the relationship among wave speed, frequency and wavelength to solve problems. • Identify the components of the electromagnetic spectrum • Calculate the frequency or wavelength of electromagnetic radiation.