

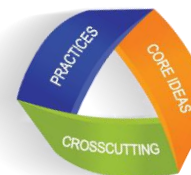


**Dubai International Private School - Br**

DIPS, in partnership with parents and community, strives to prepare every Student to be digitally literate, a lifelong learner, and a productive citizen



**International School-AI Quoz-Dubai**  
**Science Department**  
**(Grades 9-12)**  
**Curriculum Annual Plan**



**Grade: 11**  
**Subject: Physics**

**Year: 2024-2025**

**Textbook: Inspire Physics- McGrawHill**

PE Code	DCIs	Unit *	Topic(s)	Learning Objectives	Week No. & Date	No. of Lessons
<b>QUARTER- I</b>						
Pre-requisite to EmSAT	Pre-requisite for EmSAT Standard 1 Physics Fundamentals.	Module 1: Introduction to physics	<ul style="list-style-type: none"> <li>Diagnostic test</li> <li>Orientation</li> <li>Introduction to physics</li> </ul>	<ul style="list-style-type: none"> <li>Classify activities and fields that involve the major areas within physics.</li> <li>Describe the processes of the scientific method.</li> <li>Assess the role of models and diagrams in physics.</li> <li>List basic SI units and the quantities they describe.</li> <li>Distinguish between conventions for abbreviating units and quantities.</li> </ul>	Week 1 26/08/2024- 30/08/2024	4
Pre-requisite to EmSAT	Pre-requisite for EmSAT Standard 1 Physics Fundamentals	Module 1: Introduction to physics	<ul style="list-style-type: none"> <li>Accuracy &amp; precision</li> <li>Significant figures &amp; rounding rules</li> </ul>	<ul style="list-style-type: none"> <li>Convert measurements into scientific notation.</li> <li>Distinguish between accuracy and precision.</li> <li>Use significant figures in measurements and calculations.</li> </ul>	Week 2 02-06/09/2024	4
HS-PS2-1	Newton's second law accurately predicts changes in	Unit 1: Mechanics	Motion in One Dimension	<ul style="list-style-type: none"> <li>Describe motion in terms of frame of reference, displacement, time, and velocity.</li> </ul>	Week 3 09-13/09/2024	4

EmSAT part 4	the motion of macroscopic objects.	in 1D (Motion)	(Displacement)	<ul style="list-style-type: none"> <li>Calculate the displacement of an object traveling at a known velocity for a specific time interval.</li> </ul>		
HS-PS2-1 EmSAT part 4	Newton's second law accurately predicts changes in the motion of macroscopic objects.	Unit 1: Mechanics in 1D (Motion)	Motion in One Dimension (Speed & Velocity)	<ul style="list-style-type: none"> <li>Create and interpret graphs of position versus time.</li> <li>Relates properties of linear graph (such as slope and area) to the physical properties of linear motion.</li> </ul>	Week 4 16-20/09/2024	4
HS-PS2-1 EmSAT part 4	Newton's second law accurately predicts changes in the motion of macroscopic objects.	Unit 1: Mechanics in 1D (Motion)	Motion in One Dimension (Acceleration)	<ul style="list-style-type: none"> <li>Describe motion in terms of changing velocity.</li> <li>Compare graphical representations of accelerated and nonaccelerated motions.</li> <li>Apply kinematic equations to calculate distance, time, or velocity under conditions of constant acceleration.</li> </ul>	Week 5 23-27/09/2024	4
HS-PS2-1 EmSAT part 4	Newton's second law accurately predicts changes in the motion of macroscopic objects.	Unit 1: Mechanics in 1D (Motion)	Free fall (Falling objects)	<ul style="list-style-type: none"> <li>Relate the motion of a freely falling body to motion with constant acceleration.</li> <li>Calculate displacement, velocity, and time during the motion of a freely falling object.</li> </ul>	Week 6 30-04/10/2024	4
HS-PS2-1 EmSAT part 4	Newton's second law accurately predicts changes in the motion of macroscopic objects.	Unit 1: Mechanics in 1D (Motion)	Newton's First Law	<ul style="list-style-type: none"> <li>Explain the relationship between the motion of an object and the net external force acting on the object.</li> <li>Determine the net external force on an object.</li> </ul>	Week 7 07-11/10/2024	4

HS-PS2-1 EmSAT part 4	Newton's second law accurately predicts changes in the motion of macroscopic objects.	Unit 1: Mechanics in 1D (Forces)	Newton's Second and Third Laws	<ul style="list-style-type: none"> <li>Describe an object's acceleration in terms of its mass and the net force acting on it.</li> <li>Predict the direction and magnitude of the acceleration caused by a known net force. Identify action-reaction pairs.</li> </ul>	Week 8 14-18/10/2024	4
HS-PS2-1 EmSAT part 4	Newton's second law accurately predicts changes in the motion of macroscopic objects.	Unit 1: Mechanics in 1D (Forces)	Newton's Second and Third Laws	<ul style="list-style-type: none"> <li>Describe an object's acceleration in terms of its mass and the net force acting on it.</li> <li>Predict the direction and magnitude of the acceleration caused by a known net force. Identify action-reaction pairs.</li> </ul>	Week 9 21-25/10/2024	4
<b>END OF QUARTER-I</b>						

PE Code	DCIs	Unit *	Topic	Learning Objectives	Week Date	No. of Lessons
<b>QUARTER- II</b>						
HS-PS2-1 EmSAT part 4	Newton's second law accurately predicts changes in the motion of macroscopic objects.	Unit 1: Mechanics in 1D (Forces)	Newton's Second and Third Laws	<ul style="list-style-type: none"> <li>Describe an object's acceleration in terms of its mass and the net force acting on it.</li> <li>Predict the direction and magnitude of the acceleration caused by a known net force. Identify action-reaction pairs.</li> </ul>	Week 10 28/10/2024- 31/10/2024	4
HS-PS2-1 EmSAT part 4	Newton's second law accurately predicts changes in the motion of macroscopic objects.	Unit 1: Mechanics in 1D (Forces)	Newton's Second and Third Laws	<ul style="list-style-type: none"> <li>Describe an object's acceleration in terms of its mass and the net force acting on it.</li> <li>Predict the direction and magnitude of the acceleration caused by a known net force. Identify action-reaction pairs.</li> </ul>	Week 11 05-08/11/2024	4

HS-PS3-1 EmSAT part 2	Work is a physical quantity that determines the change of an object's energy when acted on by a force.	Unit 3: Momentum and Energy (Part 1: Energy)	Work	<ul style="list-style-type: none"> <li>Recognize the difference between the scientific and ordinary definitions of work.</li> <li>Define work by relating it to force and displacement.</li> <li>Identify where work is being performed in a variety of situations.</li> <li>Calculate the net work done when many forces are applied to an object.</li> </ul>	Week 12 11-15/11/2024	4
HS-PS3-1 EmSAT part 2	Energy is a quantitative property of a system that depends on the motion and interactions of matter within that system.	Unit 3: Momentum and Energy (Part 1: Energy)	Energy (Mechanical)	<ul style="list-style-type: none"> <li>Identify several forms of energy.</li> <li>Calculate kinetic energy for an object.</li> <li>Apply the work–kinetic energy theorem to solve problems.</li> </ul>	Week 13 18-22/11/2024	4
HS-PS3-1 EmSAT part 2	Energy is a quantitative property of a system that depends on the motion and interactions of matter within that system.	Unit 3: Momentum and Energy (Part 1: Energy)	Energy (Mechanical)	<ul style="list-style-type: none"> <li>Distinguish between kinetic and potential energy.</li> <li>Classify different types of potential energy.</li> <li>Calculate the potential energy associated with an object's position.</li> </ul>	Week 14 25-28/11/2024	4
HS-PS3-3 EmSAT part 2	At the macroscopic scale, energy manifests itself in multiple ways, such as in motion, sound, light, and thermal energy.	Unit 3: Momentum and Energy (Part 1: Energy)	Conservation of Energy	<ul style="list-style-type: none"> <li>Identify situations in which conservation of mechanical energy is valid.</li> <li>Recognize the forms that conserved energy can take.</li> <li>Solve problems using the conservation of mechanical energy principle.</li> </ul>	Week 15 04-06/12/2024	4
HS-PS2-2	Momentum is defined for a particular frame of	Unit 3: Momentum and	Momentum and Impulse	<ul style="list-style-type: none"> <li>Compare the momentum of different moving objects.</li> </ul>	Week 16 09-13/12 /2024	4

EmSAT part 4	reference; it is the mass times the velocity of the object.	Energy (Part 2: Momentum)		<ul style="list-style-type: none"> <li>Compare the momentum of the same object moving with different velocities.</li> <li>Identify examples of change in the momentum of an object.</li> <li>Describe changes in momentum in terms of force and time.</li> </ul>		
<b>Winter Break 16 dec-05 Jan/01/2025</b>						
HS-PS2-2 EmSAT part 4	In any system, the total momentum is always conserved.	Unit 3: Momentum and Energy (Part 2: Momentum)	Conservation of Momentum	<ul style="list-style-type: none"> <li>Describe the interaction between two objects in terms of change in momentum of each.</li> <li>Compare the total momentum of two objects before and after they interact.</li> <li>Predict the final velocities of objects after collisions.</li> </ul>	Week 17 06-08/01/2025	4
<b>Revision and Exams Days 09 Jan to 22 Jan.</b>						
HS-PS2-2 EmSAT part 4	In any system, the total momentum is always conserved.	Unit 3: Momentum and Energy (Part 2: Momentum)	Conservation of Momentum	<ul style="list-style-type: none"> <li>Describe the interaction between two objects in terms of change in momentum of each.</li> <li>Compare the total momentum of two objects before and after they interact.</li> <li>Predict the final velocities of objects after collisions.</li> </ul>	Week 20 27-31/01/2025	4
<b>END OF QUARTER-II</b>						