



GREAT NECK PUBLIC SCHOOLS

"Where Discovery Leads to Greatness"

#DiscoverGreatness

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Course Profile: Physics Regents

<u>Department</u>	Science		
<u>Course Name</u>	NYS Physical Settings: Regents Physics		
<u>Course Length</u>	1 Year		
<u>High School Credits</u>	1		
<u>Description</u>	This course is aligned to the New York State Education Department's Physical Settings/Physics Core Curriculum. This is a one-year algebra-based physics class designed for high school students, which includes an emphasis on real-life situations involving the various physics concepts and models, critical thinking/data analysis, applications of understanding/deductive reasoning, and practical hands-on lab activities. This includes satisfying the mandatory 1200 minutes of lab activities that are a prerequisite to sit for the culminating NY state exam. Students will be prepared and sit for the New York State Physical Settings/Physics Regents Examination.		
<u>Target/eligible students</u>	High school students who have been successful in algebra and trigonometry or are concurrently enrolled in a trigonometry-based math course.		
<u>State Learning Standards Link(s)</u>	New York State Framework		
	- HS. Structure and Properties of Matter - HS. Forces and interactions - HS. Energy - HS. Waves and Electromagnetic Radiation - HS. Space Systems - HS. Engineering Design		p. 54 p. 58 p. 60 p. 62 p. 73 p. 83
<u>Primary texts and materials</u>	OpenStax online text High School Physics The Physics Classroom online platform https://www.physicsclassroom.com/ APlusPhysics https://aplusphysics.com/ Castle Learning https://www.castlelearning.com/		
<u>Scope/Sequence</u>	*Standards/ Themes	Key Ideas, Term, and Concepts	
<u>UNIT 1: Physical Science Measurement and Mathematics</u>	MP.2 MP.4 AI-N.Q.1 AI-N.Q.3 NY-8.EE AI-N.Q (+)-N.VM AI-A.SSE AI-A.APR AI-A.REI NY-8.G	• SI Units • Measurement Tools • Measurement Uncertainty • Scientific Notation • The Scientific Method • Evaluating Data • Data Presentation • Scalars and Vectors • Algebraic Skills and Reasoning • Trigonometric Skills and Reasoning	p. 55 p. 57

<u>UNIT 2: Mechanics</u>	HS-PS2-1 HS-PS2-2 HS-PS2-3 HS-PS2-4 HS-ESS1-4	• Kinematics • Statics • Dynamics • Friction • Projectile Motion • Uniform Circular Motion • Newton's Universal Law of Gravitation • Momentum • The Simple Pendulum (Non-constant acc.)	p. 58 p. 73
<u>UNIT 3: Energy</u>	HS-PS3-1 HS-PS3-2 HS-PS3-3	• Forms of Energy • Work and Power • Gravitational Potential Energy • Elastic Potential Energy • Kinetic Energy • Work-Energy Theorem	p. 60
<u>UNIT 4: Electricity and Magnetism</u>	HS-PS2-4 HS-PS2-5 HS-PS3-5 HS-PS3-6 HS-ETS1-2	• Electrostatics • Electric Fields and Potential • Electric Current • DC Circuits • Magnetism • Electromagnetic Induction	p. 58 p. 60 p. 83
<u>UNIT 5: Waves</u>	HS-PS4-1 HS-PS4-4 HS-PS4-5 HS-PS4-6	• Wave Properties • Mechanical Waves • Interference • Periodic Waves • Electromagnetic Waves • Electromagnetic Spectrum • Diffraction • Reflection • Refraction	p. 62
<u>UNIT 6: Modern Physics</u>	HS-PS1-8 HS-PS3-1 HS-PS4-3	• Wave-Particle Duality • Photon Energy • History of Atomic Structure • The Nucleus • The Standard Model of Particle Physics	p. 54 p. 62
<u>Additional Notes</u>			