

Science: Honors Physics

UNIT/Weeks	Timeline/Topics	Essential Questions
6	<p><u>Force and Motion</u></p> <ul style="list-style-type: none"> • Newton's Second Law • Speed • Velocity • Acceleration • Mass • Momentum 	<ul style="list-style-type: none"> • How can one explain and predict interactions between objects and within systems of objects?
4	<p><u>Fundamental Forces</u></p> <ul style="list-style-type: none"> • Gravitational Force • Newton's Law of Universal Gravity • Electric Force • Electric Charge • Coulomb • Coulomb's Law 	<ul style="list-style-type: none"> • How can one explain and predict interactions between objects and within systems of objects?
3	<p><u>Keplar's Law</u></p> <ul style="list-style-type: none"> • Kepler's Laws • Elliptical Orbit • Orbital Speed • Orbital Period 	<ul style="list-style-type: none"> • How was it possible for NASA to intentionally fly into Comet Tempel 1?
5	<p><u>Energy</u></p> <ul style="list-style-type: none"> • Potential Energy • Kinetic Energy • Gravitational Potential Energy • Elastic Potential Energy • Mechanical Energy • Conservation of Energy • Work • Power 	<ul style="list-style-type: none"> • How is energy transferred and conserved?
3	<p><u>Physics of the Geosphere</u></p> <ul style="list-style-type: none"> • Plate Tectonics • Plate-Driving Forces • Volcanic Eruptions • Earth's Magnetic Field • Solar Storms • Climate Change • Alternative Energies 	<ul style="list-style-type: none"> • How much force and energy is needed to move a continent?
4	<p><u>Wave Properties</u></p> <ul style="list-style-type: none"> • Frequency 	<ul style="list-style-type: none"> • How are waves used to transfer energy and send and store information?

	<ul style="list-style-type: none"> • Wavelength • Transverse Wave • Longitudinal Wave • Period • Node • Antinode • Doppler Effect 	
4	<p><u>Electromagnetic Radiation</u></p> <ul style="list-style-type: none"> • Electromagnetic Induction • Electromagnetic Waves • Electromagnetic Radiation • Motor • Generator • Transformer • Electromagnetic Spectrum 	<ul style="list-style-type: none"> • Why has digital technology replaced analog technology?
3	<p><u>Electricity and Magnetism</u></p> <ul style="list-style-type: none"> • Magnetic Domain • Magnetic Field • Magnetic Flux • Magnetic Force • Solenoid • Electromagnet • Electric Motor 	<ul style="list-style-type: none"> • How can one explain and predict the interactions between objects and within a system of objects?