

Science: Physics

UNIT/Weeks	Timeline/Topics	Essential Questions
6	<p><u>Force and Motion</u></p> <ul style="list-style-type: none"> • Methods of Science • Measurements and Data • Speed • Velocity • Acceleration • Free Fall • Mass • Momentum • Newton's Second Law 	<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"> • Displacement and force in one direction • Displacement and force in two directions • Gravitational Force • Newton's Law of Universal Gravity • Rotational Motion • Torque 	<ul style="list-style-type: none"> • How can one explain and predict interactions between objects and within systems of objects?
3	<p><u>Motion in Space- Kepler's Law</u></p> <ul style="list-style-type: none"> • Kepler's Three Laws • Elliptical Orbit • Orbits of planets and satellites • Orbital Speed • Orbital Period 	<ul style="list-style-type: none"> • How would you explain gravitational force if you were Einstein?
5	<p><u>Energy</u></p> <ul style="list-style-type: none"> • Potential and Kinetic Energies • Gravitational Potential Energy • Elastic Potential Energy • Mechanical Energy • Work • Power • Machines 	<ul style="list-style-type: none"> • How is energy transformed, 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 • Climate Change • Alternative Energies 	<ul style="list-style-type: none"> • How is force and energy related to the movement of continents?

4	<p><u>Waves</u></p> <ul style="list-style-type: none"> • Frequency • Wavelength • Transverse Wave • Longitudinal Wave • Period • Node • Antinode • Doppler Effect 	<ul style="list-style-type: none"> • How are waves used to transfer energy and send and store information?
4	<p><u>Electromagnetism</u></p> <ul style="list-style-type: none"> • Motors • Generators • Transformers • Electromagnetic Spectrum 	<ul style="list-style-type: none"> • Why is the relationship between motors and generators important to world power production?
4	<p><u>Electricity and Magnetic Fields</u></p> <ul style="list-style-type: none"> • Magnetic Domain • Magnetic Field • Magnetic Flux • Magnetic Force • Solenoid • Electromagnet 	<ul style="list-style-type: none"> • How are electromagnets used in everyday living?