

BCCS
11th and 12th Grade **Physics** (revised 4-24-09)

Month	Content <i>What topic(s) is being covered and what is the important vocabulary? What do students need to know?</i>	Skills <i>What do students have to be able to do connected to the Content?</i>	Essential Questions <i>What are fundamental, enduring questions that will guide study and instruction?</i>	Standards/Benchmarks <i>What benchmarks are met through this topic?</i>	Instruction <i>What activities are used to develop the skills and knowledge?</i>	Resources <i>What materials, texts, videos, internet, software, or human resources support instruction?</i>	Assessment <i>What evidence (products and/or performances) is collected to establish that the Content and Skills have been learned?</i>
September	Topic: Inquiry, Reflection, and Social Implications Motion of Objects	Vocabulary Unit cancellation Mechanics Models Meter Kilogram Second	Solve problems using unit cancellation Use appropriate units for fundamental and derived Quantities	How can units be used to solve problems. What affects motion?	P 1.1 a - i P 1.2 a - k	Egg drop	Test.
October	Topic: Forces and Motion Basic forces Net forces Gravity Rotational Equilibrium and Dynamics	Vocabulary: Velocity Acceleration Newtons laws Inertia Scalar Vector Rotational equilibrium Centripetal Centrifugal	Understand and apply Newton's 3 laws. Explain the difference between scalar and vector quantities and give examples	What makes objects accelerate and/or move in different directions?	P 2.1a – h P 2.2 a – g P 2.3 x a	Catapult construction and testing.	Catapult project and test.
November	Momentum Forms of Energy and Energy Transformations Transfer – work Kinetic and Potential	Impact Momentum Conservation Elastic Inelastic Kinetic Potential Work Power	Explain conservation of momentum for all types of interactions.	How is momentum important?	P 3.1 a P 3.1x b - d P 3.2 a – d P 3.3 a – d P 3.4 a – g P 3.5 x a P 3.6 a – e	Ballistics Carts	Worksheets, Essay's Quizzes Special projects Chapter test over lecture material Classroom discussion

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December	Topic: Forms of Energy and Energy Transformations Heat Thermodynamics	Vocabulary: Rotational equilibrium Centripetal Centrifugal			P 4.1 a – b P 4.1 x c – e P 4.2 a – f P 4.3 a – c P 4.3 x d – f	Lab with rotational equilibrium.	Test
January	Topic: Vibrations and Waves	Vocabulary: Amplitude Frequency Wavelength Period Resonance	Explain wave phenomena		P 4.11 x a – b P 4.4 a – c P 4.4 x d – e		Project.
February	Topic: Vibrations and Waves Sound	Vocabulary: Compression Longitudinal Transverse	Explain sound	How is sound important?	P 4.5 a – e	Slinky Labs Speed of sound outside activity	
March	Topic: Light and Reflection Refraction	Vocabulary: Reflection Refraction Mirrors Lenses	Understand light	How does the electromagnetic spectrum affect my life? How is light fit into the electromagnetic spectrum?	P 4.6 a – d P 4.6 x e – h P 4.r7 x a P 4.8 a – b P 4.8 x c – f P 4.9 a – c P 4.r9 x d	Lens and laser labs Activity finding height with law of reflection/mirror Interpupillary distance mirror activity	EM Spectrum website

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April	<p>Topic</p> <p>Interference and Diffraction</p> <p>Electric Forces and Fields</p> <p>Electrical Energy and Capacitance</p>	<p>Vocabulary:</p> <p>Constructive and destructive interference</p>	<p>Explain fields.</p>	<p>What forces affect electrical processes?</p>	<p>P 3.7 a – b</p> <p>P 3.7 x c – g</p> <p>P 3.p8 a</p> <p>P 3.8 x</p>	<p>Wave tank activities.</p>	<p>TI 83 OH calculator sine function interference model</p>	
May	<p>Topic:</p> <p>Current and Resistance</p> <p>Circuits and Circuit Elements</p> <p>Magnetism</p>	<p>Vocabulary:</p> <p>Ohm’s Law</p> <p>Current</p> <p>Voltage</p> <p>Power</p> <p>Polarity</p>	<p>Understand AC and DC electricity and its applications</p>	<p>How is electricity used in our society?</p>	<p>P 4.10 a – d</p> <p>P 4.10 x e – j</p>	<p>Construction and testing of electric cars.</p>		
June	<p>Topic:</p> <p>Induction and AC</p> <p>Atomic Physics</p>	<p>Vocabulary:</p> <p>Alternating</p> <p>Direct</p> <p>Nucleus</p>	<p>Explain processes associated with atomic nuclei.</p>	<p>How can nuclear processes be used to help mankind?</p>	<p>P 4.12 a – c</p> <p>P 4.12 x d</p>	<p>Exams</p>		