

Marking Period 1 (MP1)	Science Curriculum Pacing Guide HS AP PHYSICS
MP1 Standards for Science Content	HS-PS2-1. Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
MP1 Topics	1 Kinematics 2. Force and Translational Dynamics
MP1 Skills/Concepts	Objects and systems have properties such as mass and charge. Systems may have internal structure. Fields existing in space can be used to explain interactions. The interactions of an object with other objects can be described by forces. Interactions between systems can result in changes in those systems
MP1 Core Materials	College Physics (AP Edition) Serway/Vuille 11th Edition

Marking Period 2 (MP2)	Science Curriculum Pacing Guide HS AP PHYSICS
MP2 Standards for Science Content	HS-PS2-1. Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
MP2 Topics	Work, Energy, and Power Linear Momentum
MP2 Skills/Concepts	Fields existing in space can be used to explain interactions. The interactions of an object with other objects can be described by forces. Interactions between systems can result in changes in those systems Changes that occur as a result of interactions are constrained by conservation laws.
MP2 Core Materials	College Physics (AP Edition) Serway/Vuille 11th Edition

Marking Period 3(MP3)	Science Curriculum Pacing Guide HS AP PHYSICS
<p>MP3</p> <p>Standards for Science Content</p>	<p>HS-PS2-1. Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p> <p>HS-PS2-4. Use mathematical representations of Newton’s Law of Gravitation and Coulomb’s Law to describe and predict the gravitational and electrostatic forces between objects. HS-ETS1-1: Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.</p> <p>HS-ETS1-2: Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.</p> <p>HS-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.</p> <p>HS-ETS1-4: Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.</p>
<p>MP3</p> <p>Topics</p>	<p>Torque and Rotational Dynamics Energy and Momentum of Rotating Systems</p>
<p>MP3</p> <p>Skills/Concepts</p>	<p>Big Idea 1: Objects and systems have properties such as mass and charge. systems may have internal structure. Big Idea 2: Fields existing in space can be used to explain interactions. Big Idea 3: The interactions of an object with other objects can be described by forces. Big Idea 4: Interactions between systems can result in changes in those systems. Big Idea 5: Changes that occur as a result of interactions are constrained by conservation laws.</p>
<p>MP3</p> <p>Core Materials</p>	<p>College Physics (AP Edition) Serway/Vuille 11th Edition</p>

Marking Period 4(MP4)	Science Curriculum Pacing Guide HS AP PHYSICS
MP4	<p>HS-PS2-1. Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p> <p>HS-PS2-2 Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.</p> <p>HS-PS2-4 Use mathematical representations of Newton’s Law of Gravitation and Coulomb’s Law to describe and predict the gravitational and electrostatic forces between objects.</p> <p>HS-PS3-1 Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.</p> <p>HS-PS3-2 Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects).</p>
Standards for Science Content	<p>HS-PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media</p>
MP4 Topics	<p>Oscillations Fluids</p>
MP4 Skills/Concepts	<p>Big Idea 2 – Fields existing in space can be used to explain interactions. Big Idea 3 – The interactions of an object with other objects can be described by forces. Big Idea 4: Interactions between systems can result in changes in those systems Big idea 5: Changes that occur as a result of interactions are constrained by conservation laws.</p>
MP4 Core Materials	<p>College Physics (AP Edition) Serway/Vuille 11th Edition</p>