



AP[®] Physics 1

Your Course at a Glance

Plan

The Course at a Glance provides a useful visual organization for the AP Physics 1 course components, including:

- Sequence of units, along with approximate weighting and suggested pacing. Please note, pacing is based on 45-minute class periods, meeting five days each week for a full academic year.
- Progression of topics within each unit.
- Spiraling of the science practices across units.

Teach

PRACTICES

Science Practices spiral throughout the course.

- 1

Creating Representations
- 2

Mathematical Routines
- 3

Scientific Questioning and Argumentation

Required Course Content

Each topic contains required Learning Objectives and Essential Knowledge Statements that form the basis of the assessment on the AP Exam.

Assess

Assign the Progress Checks—either as homework or in class—for each unit. Each Progress Check contains formative multiple-choice and free-response questions. The feedback from these checks shows students the areas where they need to focus.

<div><div>UNIT 1</div><div>Kinematics</div><div><div><div>~12–17</div><div>Class Periods</div></div><div><div>10–15%</div><div>AP Exam Weighting</div></div></div><div><div><div><div>1</div><div>2</div><div>3</div></div><div>1.1 Scalars and Vectors in One Dimension</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>1.2 Displacement, Velocity, and Acceleration</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>1.3 Representing Motion</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>1.4 Reference Frames and Relative Motion</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>1.5 Vectors and Motion in Two Dimensions</div></div></div><div><div>Progress Check 1</div><div>Multiple-Choice: ~18 questions</div><div>Free-Response: 4 questions</div><div><div>• Mathematical Routines</div><div>• Translation Between Representations</div><div>• Experimental Design and Analysis</div><div>• Qualitative/Quantitative Translation</div></div></div></div>	<div><div>UNIT 2</div><div>Force and Translational Dynamics</div><div><div><div>~22–27</div><div>Class Periods</div></div><div><div>18–23%</div><div>AP Exam Weighting</div></div></div><div><div><div><div>1</div><div>2</div><div>3</div></div><div>2.1 Systems and Center of Mass</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>2.2 Forces and Free-Body Diagrams</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>2.3 Newton's Third Law</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>2.4 Newton's First Law</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>2.5 Newton's Second Law</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>2.6 Gravitational Force</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>2.7 Kinetic and Static Friction</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>2.8 Spring Forces</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>2.9 Circular Motion</div></div></div><div><div>Progress Check 2</div><div>Multiple-Choice: ~30 questions</div><div>Free-Response: 4 questions</div><div><div>• Mathematical Routines</div><div>• Translation Between Representations</div><div>• Experimental Design and Analysis</div><div>• Qualitative/Quantitative Translation</div></div></div></div>	<div><div>UNIT 3</div><div>Work, Energy, and Power</div><div><div><div>~22–27</div><div>Class Periods</div></div><div><div>18–23%</div><div>AP Exam Weighting</div></div></div><div><div><div><div>1</div><div>2</div><div>3</div></div><div>3.1 Translational Kinetic Energy</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>3.2 Work</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>3.3 Potential Energy</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>3.4 Conservation of Energy</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>3.5 Power</div></div></div><div><div>Progress Check 3</div><div>Multiple-Choice: ~18 questions</div><div>Free-Response: 4 questions</div><div><div>• Mathematical Routines</div><div>• Translation Between Representations</div><div>• Experimental Design and Analysis</div><div>• Qualitative/Quantitative Translation</div></div></div></div>	<div><div>UNIT 4</div><div>Linear Momentum</div><div><div><div>~10–15</div><div>Class Periods</div></div><div><div>10–15%</div><div>AP Exam Weighting</div></div></div><div><div><div><div>1</div><div>2</div><div>3</div></div><div>4.1 Linear Momentum</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>4.2 Change in Momentum and Impulse</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>4.3 Conservation of Linear Momentum</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>4.4 Elastic and Inelastic Collisions</div></div></div><div><div>Progress Check 4</div><div>Multiple-Choice: ~18 questions</div><div>Free-Response: 4 questions</div><div><div>• Mathematical Routines</div><div>• Translation Between Representations</div><div>• Experimental Design and Analysis</div><div>• Qualitative/Quantitative Translation</div></div></div></div>	<div><div>UNIT 5</div><div>Torque and Rotational Dynamics</div><div><div><div>~15–20</div><div>Class Periods</div></div><div><div>10–15%</div><div>AP Exam Weighting</div></div></div><div><div><div><div>1</div><div>2</div><div>3</div></div><div>5.1 Rotational Kinematics</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>5.2 Connecting Linear and Rotational Motion</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>5.3 Torque</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>5.4 Rotational Inertia</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>5.5 Rotational Equilibrium and Newton's First Law in Rotational Form</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>5.6 Newton's Second Law in Rotational Form</div></div></div><div><div>Progress Check 5</div><div>Multiple-Choice: ~18 questions</div><div>Free-Response: 4 questions</div><div><div>• Mathematical Routines</div><div>• Translation Between Representations</div><div>• Experimental Design and Analysis</div><div>• Qualitative/Quantitative Translation</div></div></div></div>	<div><div>UNIT 6</div><div>Energy and Momentum of Rotating Systems</div><div><div><div>~8–14</div><div>Class Periods</div></div><div><div>5–8%</div><div>AP Exam Weighting</div></div></div><div><div><div><div>1</div><div>2</div><div>3</div></div><div>6.1 Rotational Kinetic Energy</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>6.2 Torque and Work</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>6.3 Angular Momentum and Angular Impulse</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>6.4 Conservation of Angular Momentum</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>6.5 Rolling</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>6.6 Motion of Orbiting Satellites</div></div></div><div><div>Progress Check 6</div><div>Multiple-Choice: ~18 questions</div><div>Free-Response: 4 questions</div><div><div>• Mathematical Routines</div><div>• Translation Between Representations</div><div>• Experimental Design and Analysis</div><div>• Qualitative/Quantitative Translation</div></div></div></div>	<div><div>UNIT 7</div><div>Oscillations</div><div><div><div>~5–10</div><div>Class Periods</div></div><div><div>5–8%</div><div>AP Exam Weighting</div></div></div><div><div><div><div>1</div><div>2</div><div>3</div></div><div>7.1 Defining Simple Harmonic Motion (SHM)</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>7.2 Frequency and Period of SHM</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>7.3 Representing and Analyzing SHM</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>7.4 Energy of Simple Harmonic Oscillators</div></div></div><div><div>Progress Check 7</div><div>Multiple-Choice: ~18 questions</div><div>Free-Response: 4 questions</div><div><div>• Mathematical Routines</div><div>• Translation Between Representations</div><div>• Experimental Design and Analysis</div><div>• Qualitative/Quantitative Translation</div></div></div></div>	<div><div>UNIT 8</div><div>Fluids</div><div><div><div>~12–17</div><div>Class Periods</div></div><div><div>10–15%</div><div>AP Exam Weighting</div></div></div><div><div><div><div>1</div><div>2</div><div>3</div></div><div>8.1 Internal Structure and Density</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>8.2 Pressure</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>8.3 Fluids and Newton's Laws</div></div><div><div><div>1</div><div>2</div><div>3</div></div><div>8.4 Fluids and Conservation Laws</div></div></div><div><div>Progress Check 8</div><div>Multiple-Choice: ~18 questions</div><div>Free-Response: 4 questions</div><div><div>• Mathematical Routines</div><div>• Translation Between Representations</div><div>• Experimental Design and Analysis</div><div>• Qualitative/Quantitative Translation</div></div></div></div>
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