

AP PHYSICS I

HOW CAN WE USE PHYSICS TO CREATIVELY SOLVE PROBLEMS AND UNDERSTAND THE WORLD?

THE 10 TOPICS

1. Kinematics
2. Dynamics: Newton's Laws
3. Circular Motion and the Universal Law of Gravitation
4. Simple Harmonic Motion: Simple Pendulum and Mass-Spring Systems
5. Impulse, Linear Momentum, and Conservation of Linear Momentum: Collisions
6. Work, Energy, and Conservation of Energy
7. Rotational Motion: Torque, Rotational Kinematics and Energy, Rotational Dynamics, and Conservation of Angular Momentum
8. Electrostatics: Electric Charge and Electric Force
9. DC Circuits: Resistors
10. Mechanical Waves and Sound

THE 7 PROJECT CYCLES

Reel Physics. Students are Hollywood science advisors answering the question **“How real are Hollywood stunts?”**



Reel Physics

When in Rome. Students are ancient Roman architects answering the question **“How can you design an arch that best pleases the Emperor?”**



When in Rome

Mission to Mars. Students are Entry, Descent, & Landing (EDL) Systems Engineers answering the question **“How can you successfully land a rover on Mars?”**



Mission to Mars

Sticks & Stones. Students are experimental archaeologists answering the question **“Winning is survival! Would you have been able to survive in the Paleolithic era?”**



Sticks & Stones

Crash Scene Investigation. Students are accident investigators answering the question **“How can we accurately determine what happened in a car crash?”**



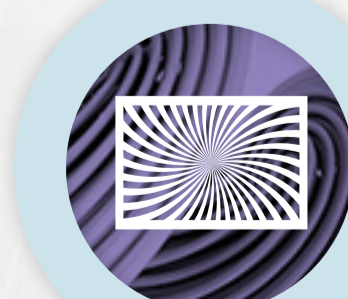
Crash Scene Investigation

Planet Hunters. Students are planetary astrophysicists answering the question **“How extreme can planets get?”**



Planet Hunters

Art in Motion. Students are science-based artists answering the question **“How can you use physics to build a whimsical kinetic sculpture?”**



Art in Motion