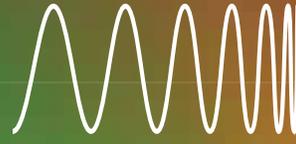


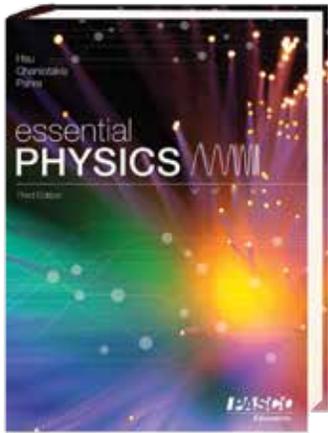
essential PHYSICS



Third Edition

Essential Physics and NGSS

Curriculum Designed to Help You Meet Your New Science Standards

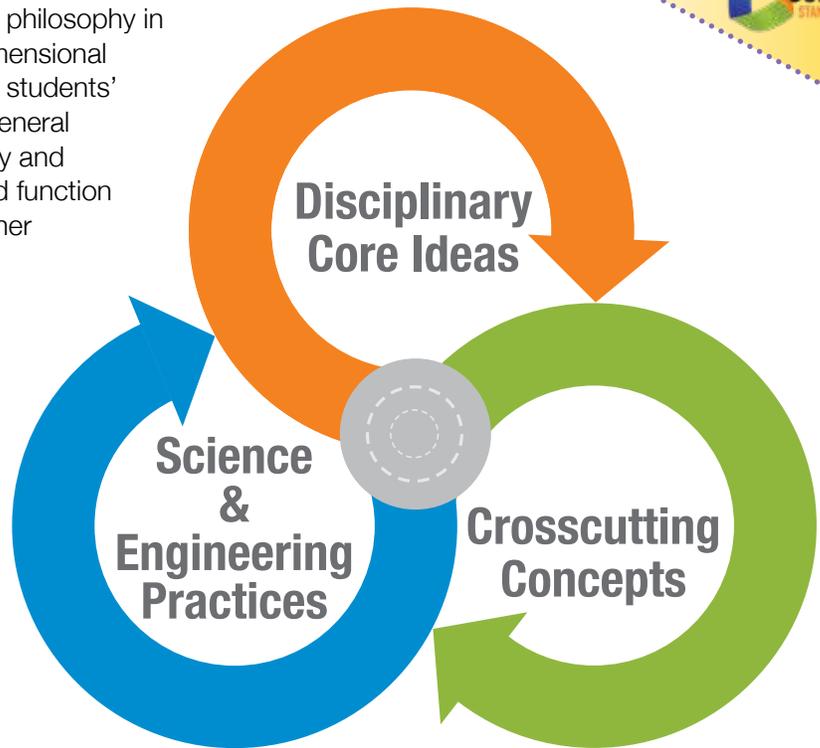


The *Essential Physics* curriculum is a rigorous program that is suitable for both General and Honors Physics classes. It has been written with the NGSS philosophy in mind. It uses three-dimensional learning to enrich your students' physics experience. General themes such as energy and matter or structure and function are connected with other scientific disciplines.

The *Essential Physics* curriculum is constructed around the three dimensions:

- Science and Engineering Practices
- Crosscutting Concepts
- Disciplinary Core Ideas

See the other side for information on how *Essential Physics* can help you incorporate the three dimensions into your classes.



Designed to help you meet the Next Generation Science Standards



No other program offers such a complete hands-on, 3-D STEM solution for teaching physics!

For more information on *Essential Physics* and your science standards, preview the e-book at pasco.com/essentialphysics or call your PASCO Education Specialist at 877-373-0300.

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The Three-Dimensional Learning Approach

Science and Engineering Practices

There are over 90 labs, activities, and design projects in the *Essential Physics* curriculum. They have been designed so that students employ the science and engineering practices they need to think and act like scientists and engineers. The curriculum includes eight STEM design projects in which students solve a problem by designing a solution. The authors have also included rubrics that will assist teachers with grading.

STEM Design Projects

- Design a Crash Barrier
- Design a Musical Instrument
- Design a Lemon Battery
- Design a Solar Power Array
- Design a Wind Turbine
- Design a Rube Goldberg Machine
- Design a Pinhole Camera
- Design an Infrared Pulse Monitor

Crosscutting Concepts

The authors of *Essential Physics* have taken great care to connect students to common science concepts that appear across the sciences. The curriculum includes links to mathematics, biology, and astronomy, which emphasize how scale, proportion, energy, matter, and other crosscutting concepts connect to all of the sciences.

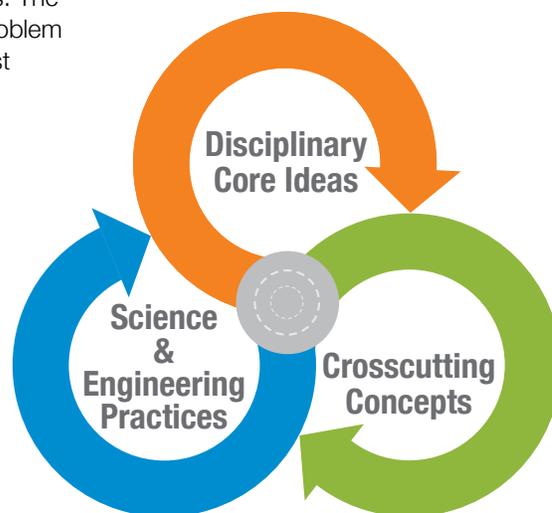
Throughout the textbook, students are regularly exposed to fundamental and crosscutting concepts such as:

- Energy and Matter
- Scale and Proportion
- Structure and Function

Disciplinary Core Ideas

Each chapter of *Essential Physics* supports multiple disciplinary core ideas on topics such as:

- Forces and Motion
- Conservation of Energy and Energy Transformation
- Electromagnetic Radiation



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