

PLATO[®] Physical Science

Grade Level: 6–8
Target Audience: Middle School/High School
Audio Support: Yes

Product Features

- 115 discrete learning objectives
- Engage the learner with extensive audio, graphics, and interactions
- Animations show complex processes
- Simple and consistent navigation
- Glossary defines terms and models proper pronunciation
- Fun, theme-based interactive scenarios in all applications

Product Benefits

- Aligns to national standards, including NSES and McREL
- Provides content knowledge aimed to improve achievement on standardized tests
- Helps learners visualize and understand science concepts
- Allows learners to complete lessons sequentially or select topics in desired order
- Enriches instruction with real-life problem-solving scenarios

Online Tools

Glossary—models pronunciation of science terms and provides definitions

Calculator—available to help learner solve problems using basic operations

Conversion Tool—available to help learner perform unit conversions between the metric and English systems of measurement

Menu Icons

Options—allows learner to turn off narration and customize the interface color

Help—provides an explanation of course features

Previous—allows learner to return to the previous scene

Pause—allows learner to stop and restart the audio

Next—allows learner to proceed to the next scene

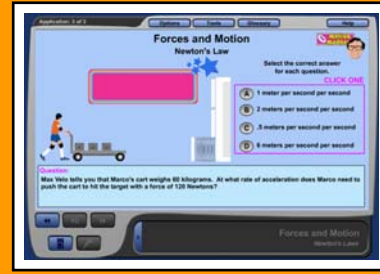
Exit—allows learner to stop and exit the program

Jump—allows learner to view a specific topic rather than advance sequentially

Read along—allows learner to view a transcript of the audio

Reference Materials (Refer to PLATO Documentation CD)

PLATO Curriculum Guide—Physical Science



Getting Started

- Refer to the Curriculum Guide for Physical Science to review the menu icons and identify concepts addressed in each unit.
- Become familiar with the purpose and use of the courseware learning activities, which are described in the curriculum guide.
- Preview the Physical Science units.

Lesson Progression

- Lesson—introduces and teaches physical science concepts (not scored)
- Application—reinforces physical science concepts covered in the lesson (scored)
- Test—includes randomly generated questions and provides immediate feedback (scored)

Assessment

- Assign the test as a pretest to evaluate individual learning needs.
- Use a state or local assessment to further identify and prioritize instructional needs.

Implementation Strategies

- Present each lesson in a whole-group activity to introduce physical science concepts.
- Encourage self-paced learning by directing the learner to complete the application independently.
- Encourage the learner to formulate questions about physical science concepts presented in the lessons.
- Target individual learner needs by assigning selected courseware modules for remediation, reinforcement, and extension.

Evaluation

- Design and formulate an evaluation plan based on the online test results.
- Collect learner portfolios to further evaluate which concepts the learner has mastered.
- Generate reports to track learner progress and measure gains.
- Evaluate and discuss report data with the learner to determine the next steps.

Extension Exercises

- Assign individual lessons to small groups and have each group explain the lesson's concepts to the whole group.
- Assign learners to create a website library for each lesson.
- Develop writing prompts that extend course topics and have the learner keep a journal.
- Align courseware modules with textbooks and district objectives.

Curriculum
Structure

Curriculum



Physical
Science

Course



Forces and
Motion

Module



Newton's
Laws: Forces
and Motion

Skill Activity



Lesson

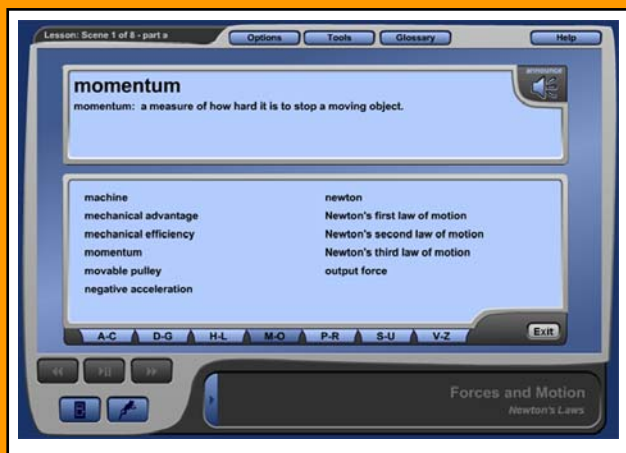
Application

Test

For more information, please call 800.44.PLATO or visit www.plato.com

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Physical Science—Glossary

The glossary defines all the vocabulary words used in the physical science curriculum:

- Learners can launch the glossary from any location inside the lesson or application. Learner progress is uninterrupted.
- Vocabulary words are grouped alphabetically for quick retrieval.
- Learners can select the announce icon to hear the vocabulary word and definition read aloud.
- Definitions are clear and concise.

Units, Topics, and Descriptions

Unit	Topics	Description
<i>Properties and Structure of Matter</i>	Understanding and Measuring Matter; Atoms, Elements, Compounds and Mixtures; Physical and Chemical Properties of Matter; States of Matter; The Periodic Table	This unit describes characteristics of matter, such as volume and temperature, and introduces units of measurement. The unit takes learners inside matter, dissecting the atom and illustrating how atoms make up common elements, and in turn, compounds and mixtures. This leads to an exploration of physical and chemical properties of matter. The unit discusses states of matter (solid, liquid, gas), and depicts the phase changes between them. Finally, learners uncover patterns in the periodic table of elements and use the table to help classify and make predictions about the reactivity of elements.
<i>Chemistry Fundamentals</i>	Bonding and Types of Compounds; Mixtures and Solutions; Chemical Reactions	Learners investigate ionic, covalent, and metallic bonds and use the periodic table of elements to predict bond type and the behavior of compounds. Learners explore how a solution is one kind of mixture, and they estimate the solubility of various substances. Finally, learners study types of chemical reactions (acid-base, for example) and balance related chemical equations. Given reactants, learners predict the products and explain how certain factors change the rate of reaction.
<i>Energy and Its Applications</i>	Properties and Sources of Energy; Heat; Electricity, Circuits, and Power; Magnetism and Electromagnetism; Properties of Sound and Light; The Behavior of Sound and Light	This unit distinguishes among types of energy, such as kinetic and potential, and explains the law of conservation of energy. It analyzes common forms of energy, namely heat and electricity. Electricity relates directly to magnetism as the unit describes magnetic forces and fields and the devices that use them. Finally, learners study longitudinal and transverse waves and observe the behavior of sound and light through certain mediums.

Unit	Topics	Description
<i>Forces and Motion</i>	Motion; Newton's Laws: Forces and Motion; Work and Simple Machines	Learners study concepts of speed, velocity, acceleration, momentum, and inertia. They apply Newton's three laws of motion to real-world situations. Finally, learners take a look at simple machines. They investigate mechanical advantage and predict what machine to use in given situations to best influence work and power.

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