

PLATO[®] Earth and Space Science

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

Product Features

- 140 discrete learning objectives
- Engages 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

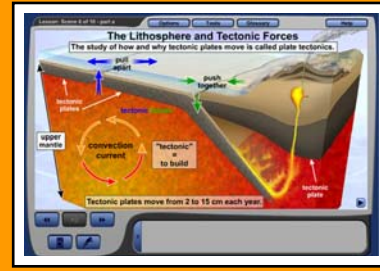
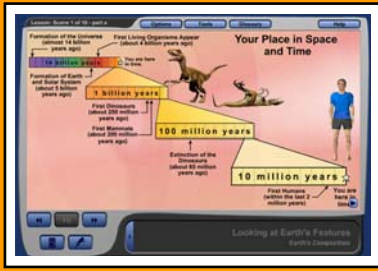
Exit—allows learner to stop and exit the program

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—Earth and Space Science



Getting Started

- Refer to the Curriculum Guide for Earth and Space 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 Earth and Space Science units.

Lesson Progression

- Lesson—introduces and teaches Earth and space science concepts (not scored)
- Application—reinforces Earth and space 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 Earth and space science concepts.
- Encourage self-paced learning by directing the learner to complete the application independently.
- Encourage the learner to formulate questions about Earth and space 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

↓
Earth and
Space Science

Course

↓
Looking at
Earth's
Features

Module

↓
Earth's
Composition

Skill Activity

↓
Lesson

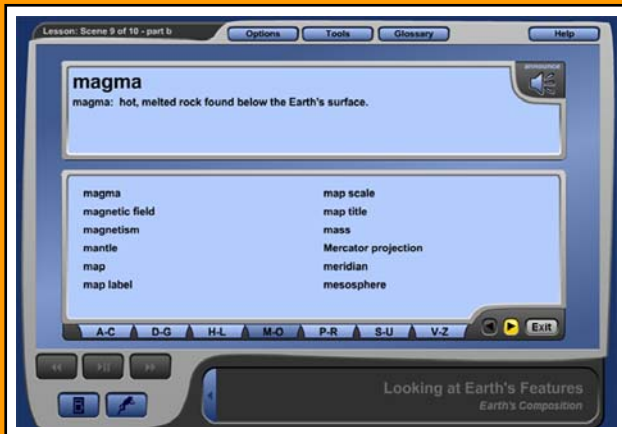
Application

Test

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

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Earth and Space Science—Glossary

The glossary defines all the vocabulary words used in the Earth and Space 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>Looking at Earth's Features</i>	Earth's Composition; Earth's Surface and Landforms; Mapping	Learners will explore the different layers that make up Earth, including the core, mantle, and crust, as well as the biosphere, hydrosphere, and atmosphere. This discussion leads to an introduction of the major landforms and oceans that make up the surface of Earth. In addition, learners will examine ways to map the features of Earth's surface.
<i>The Energetic Earth</i>	Plate Tectonics and Earth's Movements; Earthquakes; Volcanoes	After becoming familiar with the theory of plate tectonics, learners will see how convection currents within Earth drive the movement of plates that make up the planet's crust. Learners then look at the breakup of Earth's land mass over time, from Pangaea to the present-day arrangement of the continents. In addition, learners will explore earthquakes and volcanoes and discover how these geological events relate to tectonic processes.
<i>Rocks and Soil</i>	Rocks and the Rock Cycle; Weathering, Soil, and Erosion	Learners will study the different characteristics of minerals, the conditions under which different rocks form, and the rock cycle. This introduction leads to an exploration of the processes that break down rock, such as chemical and mechanical weathering and erosion. Learners will see how rock turns into sediment and then soil. This unit ends with an in-depth look at the characteristics of soil and what different layers tell scientists.

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Unit	Topics	Description
<i>Water in Our World</i>	The Cycle and Movement of Water; The Oceans; Fresh Water	This unit provides a guide to the water on Earth's surface. Learners will investigate the water cycle. They'll also see how water moves in waves, tides, and currents, and what drives their movement. Learners will analyze how the ocean varies by depth, temperature, and pressure, and how various species of animals live in different areas of the ocean. After exploring the properties and distribution of saltwater and fresh water, learners will see how fresh water flows both on the surface and below ground. Finally, learners will look at the importance of conserving water and preventing water pollution.
<i>Weather and Atmospheric Processes</i>	Atmosphere; Weather; Climate	This unit focuses on Earth's atmosphere and the difference between weather and climate. Learners will explore the different layers of the atmosphere and how they trap energy from the sun. They'll investigate how the uneven heating of Earth drives the movement of air and water around the globe and how that leads to our daily weather patterns and our long-term climate patterns. Learners will become familiar with different types of clouds, weather fronts, and extreme forms of weather. They'll observe how different temperatures and levels of precipitation create a wide range of climates. Finally, the discussion turns to the natural causes of climate change, how humans have contributed to it, and how people can prevent it.
<i>Earth, Space, and the Universe</i>	The Solar System; The Sun, Earth, and Moon; Space: Stars, Galaxies, and the Universe	An introduction to astronomy, this unit looks at the tools astronomers use to study space and the nine planets in our solar system. Learners also explore the Earth, sun, and moon system through topics such as the formation of Earth and the moon, phases of the moon, and seasonal change caused by the position of Earth in relation to the sun. Finally, learners will investigate the scale of time and distance involved in studying stars, the Milky Way Galaxy, and the universe itself.

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