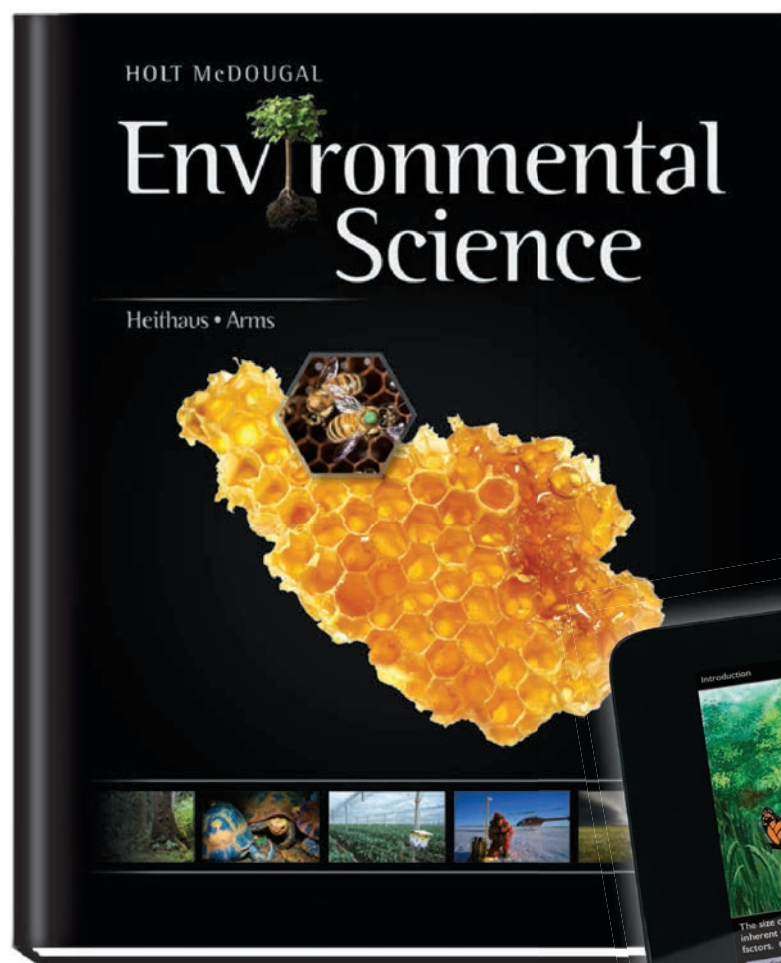


Environmental Science

Reviewer's Guide



Tired of hauling your books back and forth from school to home?

**Less paper, more convenience,
more support.**



PLUS—

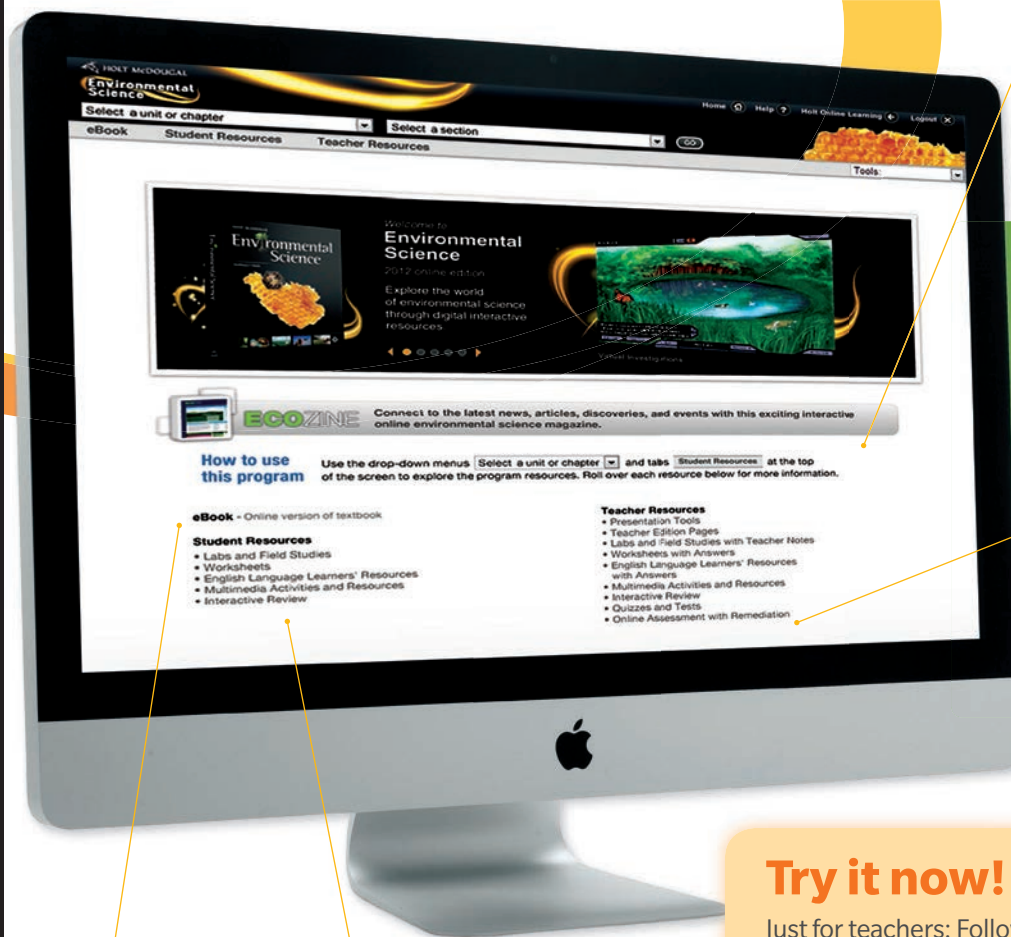
- 24/7 access to all of your program components
- Organized for easy access—right at point of use
- Easy to modify and customize to fit your needs

EcoZine—an exciting interactive online environmental science magazine



Teacher Resources

- Presentation Tools
- Teacher Edition Pages
- Labs and Field Studies with Teacher Notes
- Worksheets with Answers
- English Language Learners' Resources with Answers
- Quizzes and Tests
- Multimedia Activities and Resources
- Interactive Review
- Online Assessment and Remediation



eBook—
Online version of textbook

Student Resources

- Labs and Field Studies
- Worksheets
- English Language Learners' Resources
- Multimedia Activities and Resources
- Interactive Review

Try it now!

Just for teachers: Follow these steps to see how interactive and engaging online texts can be!

1	Go to:	HMHScience.com
2	Click on	PREVIEW
3	Enter Sample Word:	FLHSSC19
4	Fill in the Required Personal Information and Click:	Next >
5	Write down your username and follow the on-screen instructions to set a password. Log in at: HMHScience.com	

Print components designed, and aligned for easy access.

HMH® Environmental Science enables you to reach all learners by providing time-saving, easy-to-use resources to help students of all abilities achieve understanding and success.



Student Edition

Written specifically for high school students. Engaging Case Studies, relevant feature articles, and in-text labs are all included to actively engage students.



Study Guide

Concept review worksheets for every chapter reinforce key terms and main ideas. Available in English and Spanish, in print and online.



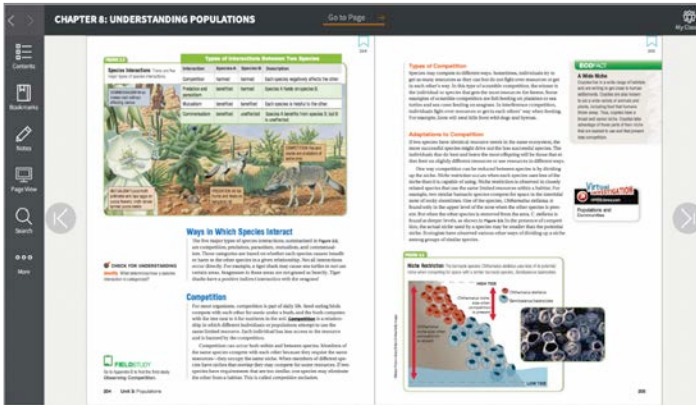
Teacher Edition

Teacher resources include:

- Support for reading, notetaking, labs, and activities
- Instructional Lesson Cycle: *Focus and Motivate*, *Teach*, and *Assess and Reteach Structure*
- Differentiated instruction strategies are included in each lesson

How do you put your students in the moment? Digital tools that Motivate and Engage

Innovative technology engages today's students and gives environmental science topics real-world relevance.



Interactive Online Edition

Enjoy 24/7 access to ALL program components and encourage your students to “Go Green.”



Engaging Virtual Investigations

Twenty-one multimedia lessons, each approximately 30 minutes in length, combine engaging presentations, interactive activities, and simulated scientific investigations to reinforce students' understanding of environmental science while strengthening inquiry and lab skills.

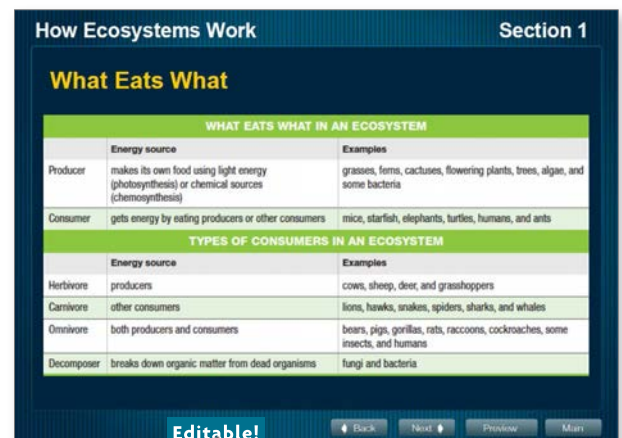


EcoZine
at HMDScience.com

Go online for the latest environmental science news and updates on all EcoZine articles.

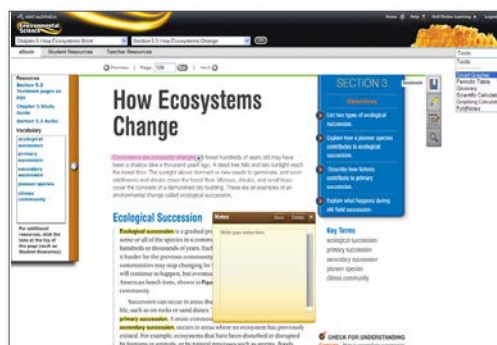
EcoZine interactive online magazine keeps students up to date, informed, and involved.

Give students access to current information from the community and the world, updated regularly with live news feeds and feature articles. **EcoZine** is a free online magazine that puts students on a fast track to what's happening in the ever-changing world of environmental science. Interactive features help to extend learning for advanced students and support comprehension for visual learners.



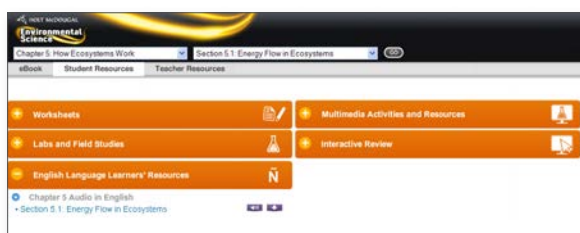
Power Presentations

Editable PowerPoint® files offer engaging multimedia presentations that cover the core material of each chapter—a valuable resource for student-led instruction.



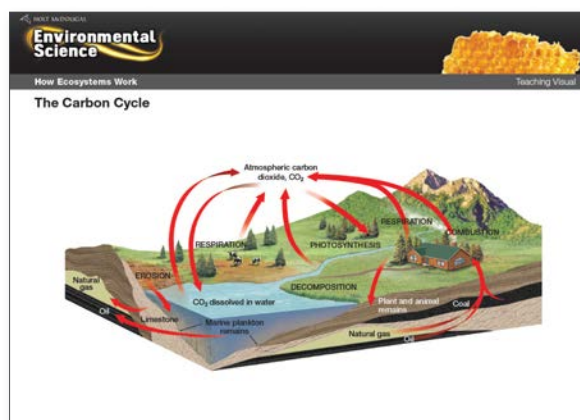
Enhanced eBook

This online version of the Student Edition, accessed via the “Book Pages” tab on HMHScience.com, enables students to access all the textbook pages on a desktop, laptop, or netbook computer. A separate tab offers access to the Study Guide, audio, and Key Terms definitions, and the “Tools” menu provides point-of-use access to the Smart Grapher, Periodic Table, full Glossary, FoldNotes, and other interactive features. Additional motivating functionality includes bookmarking, highlighting, notetaking, and keyword searching.



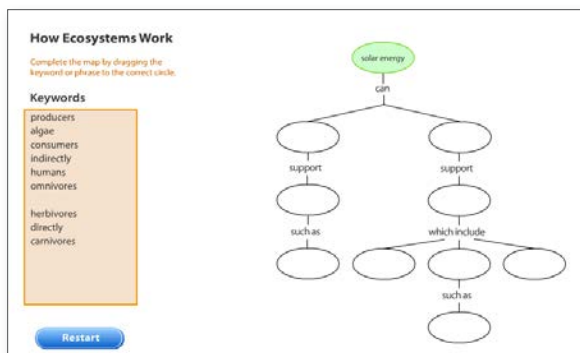
Audio Files in English

The entire Student Edition has been professionally recorded and is available online at point of use to help bolster comprehension.



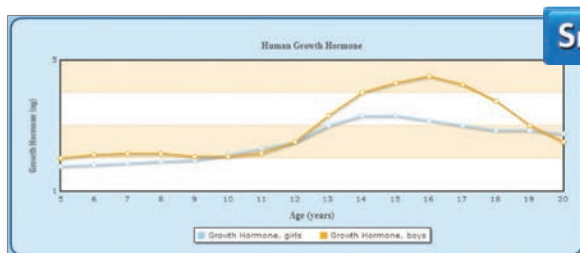
Teaching Visuals

More than 200 digital illustrations and diagrams (many from the textbook) support and enhance whole-class instruction.



Interactive Concept Maps

Available for every chapter, these interactive graphic organizers show the relationships among concepts and help students develop logical thinking and study skills.



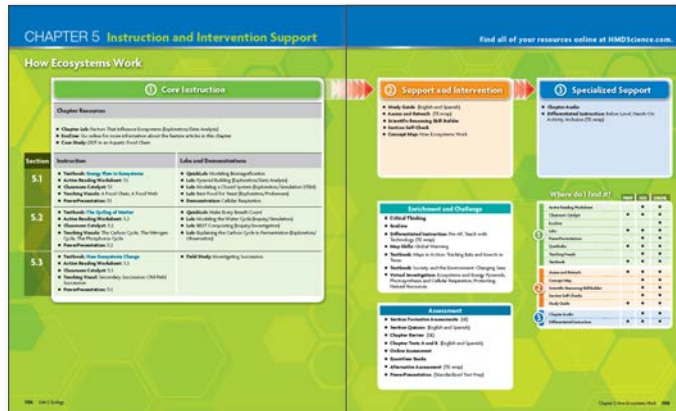
Smart Grapher

Smart Grapher

A powerful, easy-to-use online graphing tool enables students to use their own data to create line graphs, circle graphs, and more.

Unparalleled resources for Differentiated Instruction

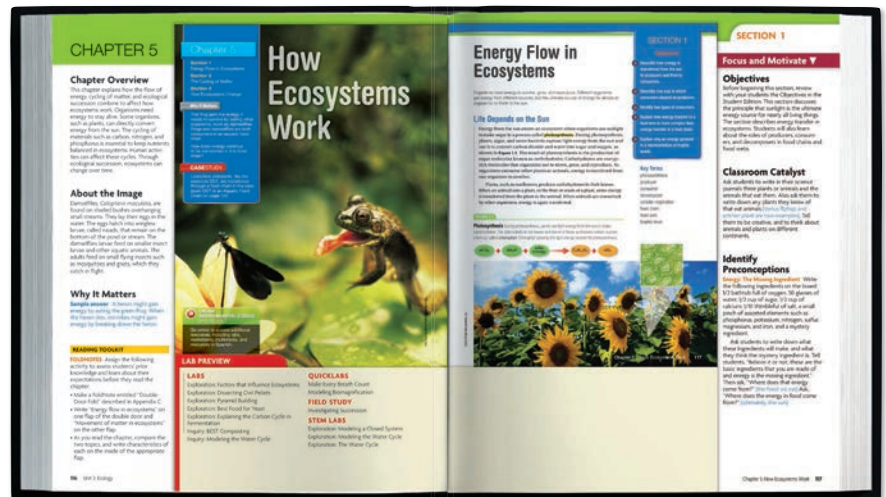
With a wealth of activities, strategies, and exciting features to ignite class discussion and critical thinking, the Teacher Edition is designed to help you reach all levels of learners.



Instruction and Intervention Support
To simplify lesson planning, the **Instruction and Intervention Support** pages at the beginning of each chapter provide a full listing of the activities and classroom resources available for each section.

Reading Toolkit

A prereading activity includes **FoldNote** instructions to help students organize their ideas and improve comprehension and retention. Illustrations of how to construct various FoldNote designs are located in Appendix C. Animated illustrations demonstrating how to create the 10 FoldNote designs are available online.



Differentiated Instruction

Differentiated Instruction strategies are provided for every lesson to assist you in helping students with a wide range of needs. The strategies include:

- Below Level
- Group Activity
- Pre-AP
- English Learners
- Inclusion
- Teach with Technology

Differentiated Instruction

GROUP ACTIVITY

Bring in some pieces of poster board and photos of organisms associated with deep ocean hydrothermal vent communities. Ask students to draw individual pictures of creatures that depend on the bacteria associated with hydrothermal vents. Ask students to sketch bacterial colonies and the vents themselves. Tell students to clearly label each creature with its common and scientific name, if possible. Ask students to cut out their drawings and arrange them into communities on the pieces of poster board. After each

community is constructed, have students explain how all the creatures interact with each other. If students are unsure of the role of some of the organisms, ask them to research these roles before the next class period.

Options for Instruction

A wealth of activities and teaching tips allow you to customize your classroom to fit your students' needs.

These include:

- Career
- Citizen Science
- Classroom Catalyst
- Connect to...Biology, History, Language Arts, Math, Medicine, and more
- Global Awareness
- Homework
- Identify Preconceptions
- Interpret Data, Interpret Statistics
- Make It Relevant
- Reading Toolkit/Vocabulary
- Science in Action
- Teach from Visuals

Scientific Reasoning Skill Builder

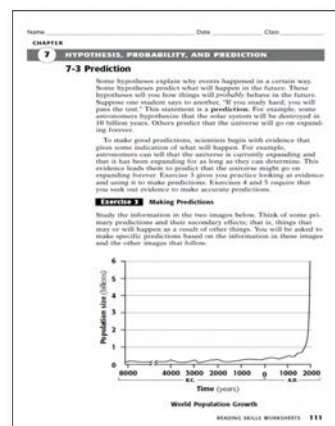
The exercises in these practice worksheets help students to develop the thinking skills that form the building blocks of quantifying and comparing—and to integrate these thought modes into their reading, writing, and thinking. Skills covered include observing and describing; describing time; defining, classifying, and categorizing; cause-and-effect relationships; comparison; hypothesis; probability; prediction; generalizations; and analogies. The worksheets are especially useful for English language learners and students who are at risk.

ENGLISH LEARNERS

To help students with the new vocabulary in this section, direct their attention to **Figure 1.4**. Read the table out loud, discussing each portion. Then use magazine photos and other visual aids to provide more examples of each type of organism. Check student comprehension by holding up various photos and asking students whether the organism shown is a producer or a consumer. If it is a consumer, ask them which type of consumer it is.

INCLUSION

Ask students to draw a picture of an imaginary ecosystem. The picture should include organisms that are producers and consumers as defined in **Figure 1.4**. The types of consumers and producers should be labeled clearly. The student may present their ecosystem to the class or small group to show their understanding of the concept.



Online Resources for English Language Learners

Spanish Study Guide

Study Skills worksheets help ensure that students understand the key terms and main ideas in each chapter.

Professional Reference for Teachers

Three sections to support ELL instruction include:

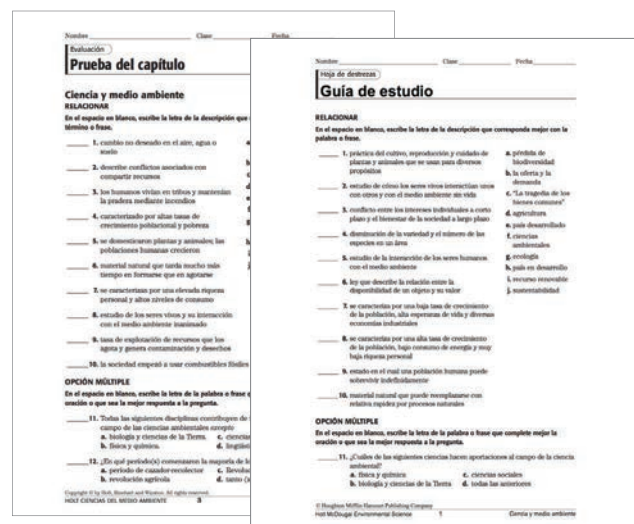
- Teaching Science to Students with Limited English Proficiency
- Meeting the Needs of Standard English Learners
- Teaching Reading to English Language Learners in the Science Classroom

Spanish Section Quizzes

10-item quiz for each section

Spanish Chapter Test A

General-level chapter test



Wide-range support for reading and vocabulary

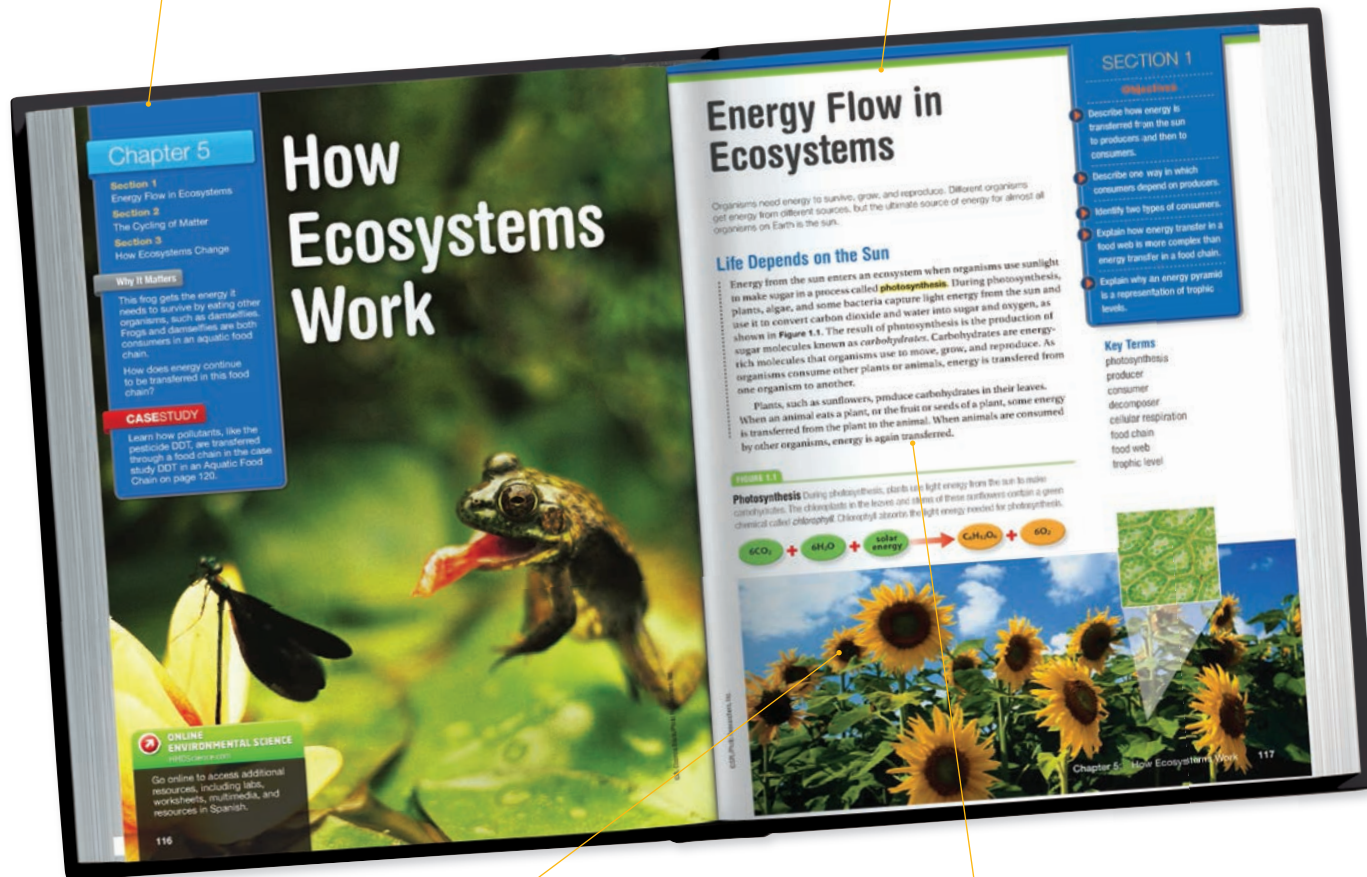
Your students will get the most out of their reading with numerous print and multimedia resources that enable them to build understanding and retain more information on key concepts. The Student Edition engages and supports students with labs and activities for hands-on involvement; review for test readiness; and reinforcement for building reading, writing, math, and science skills.

Science in the Real World

Each chapter introduces a **Why It Matters** strand that helps students connect environmental science topics to the world around them. Students are prompted to relate the topic to the photograph and the **Case Study**.

Section Objectives and Key Terms

Each section begins with lists of **Objectives and Key Terms** that focus student attention on the material they are about to read.



Learn from Visuals

The **charts, graphs, photographs, and illustrations** help students visualize key concepts. Many include questions to help students apply what they have learned.

Accessible Text

Easy navigation, outline-style headings, and manageable content sections keep students engaged in the material.

Check for Understanding

To reinforce comprehension, **Check for Understanding** questions are placed strategically throughout the text.



CHECK FOR UNDERSTANDING

Recognize How do algal blooms harm aquatic ecosystems?

Engaging Case Studies

Case Studies make science relevant to students by presenting current real-world issues. Critical-thinking questions build students' analytical skills and help them make connections. Case Studies are introduced in Chapter Opener and revisited in Chapter Review.



ECOFACT

Minerals in Your Mouth

Phosphorus is the 11th most abundant element in the Earth's crust and occurs naturally as phosphate in the mineral apatite. Apatite can exist in igneous, metamorphic, and sedimentary rocks as well as in your teeth and bones.

EcoFacts

EcoFacts present brief tidbits of interesting, related information to spark inquiry and exploration.

Society and the Environment

Changing Seas

Most of the food we eat comes from agriculture and farming, but we also rely on the fishing industry. About 17% of the animal protein consumed in the world comes from fish and other marine and aquatic organisms. But many fish species have been overfished. The overfishing and collapse of the North Atlantic and the salmon fisheries off the northwest coast of the United States are examples of depleted fisheries in many parts of the world, which are disappearing rapidly because of the demand for fish for export. Some fisheries now exist as low fish that harvesting them is not economical. And the size of some of the harvested fish that remain are now smaller because they don't mature long enough to grow.

Fishing Down the Food Chain

Fish catch statistics, however, and not on the capture in some food chains and food webs. As populations of these fish have declined, species from lower trophic levels that were once swept back into the sea have become more common in fish markets. Organisms from lower trophic levels such as mullet, squid, and herring, which were once used to bait, now appear in restaurant menus. Also, the high prices for large fish have encouraged fishermen to catch these species. In 2012, one bluefish weighed about 273 kg sold for over \$700,000. At prices that high, it is economical to keep fishing even after populations are scarce.

Scientists are working to determine what species are most at risk of overfishing and what will happen in ecosystems if overfishing continues. If the food web of some ecosystems are altered too much, the commercial fishing industry will be in trouble as it makes economic sense for fishers to protect the oceans.

Creating Sustainable Fisheries

One use of environmental science is to determine how fisheries can be managed so that they are sustainable or capable of supplying the same number of fish to be harvested each year. One solution is to establish "no take" zones. These are areas of the sea where no fishing is permitted. Fish populations grow rapidly in these zones. When a population grows in a "no take zone," some organisms leave the zone and become available to fishers. "No take" zones help populations recover and allow food chains and food webs to remain intact.

The next time you go to a fish market or seafood restaurant, take note of the different types of species for sale. Write down the names of the species, and try to arrange with the manager to a "no take" zone. How many of the species for sale are higher trophic levels? How do prices differ between the species for sale?

High-Interest Features

Relevant and engaging features designed to extend learning with real-world examples include **Maps in Action**, **Society and the Environment**, **Points of View**, and **Making a Difference**.

Study Guide

Minerals in Your Mouth

Phosphorus is the 11th most abundant element in the Earth's crust and occurs naturally as phosphate in the mineral apatite. Apatite can exist in igneous, metamorphic, and sedimentary rocks as well as in your teeth and bones.

Section 2: The Environment and Society

The decisions and actions of all people in the world affect our environment. But the unequal distribution of wealth and resources around the world influences the environmental problems that a society faces and the choices it can make. The United Nations classifies countries as either developed or developing. Developed countries have higher average incomes, slower population growth, diverse industrial economies, and stronger social support systems. They include the United States, Canada, Japan, and the countries of Western Europe. Developing countries have lower average incomes, simple and agriculture-based economies, and rapid population growth. In addition, different developing countries are on different paths. Some are experiencing little change in living conditions, while others, like Brazil, China, and India, have emerged as major international economic powers with environmental impacts and challenges similar to those in developed countries.

IDENTIFYING MAIN IDEAS

One reading skill is the ability to identify the main idea of a passage. The main idea is the main focus or key idea. Frequently a main idea is accompanied by supporting information that often should be used to back up the main idea.

Read each question and write the answer in the space provided.

1. What organization has classified countries as developing or developed?

2. List two developed countries.

VOCABULARY DEVELOPMENT

In the space provided, write the letter of the phrase that best completes each statement.

3. Developed countries often

a. have higher average incomes and slower population growth.
b. have higher average incomes and slower population growth.
c. have lower population growth and diverse industrial economies.
d. eventually become developing countries.

Critical Thinking

Ask students to use cognitive skills to draw well-reasoned conclusions.

Active Reading Worksheets

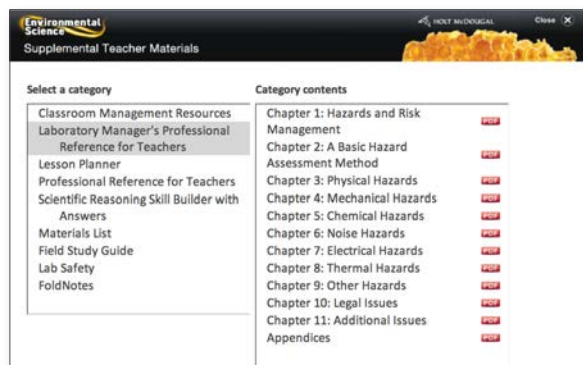
Help students learn to analyze text passages to build comprehension.

Study Guide

Ideal for homework, or in-class review- ensure that students understand key terms and concepts.

Convenient Access to Labs, Data Analysis, and STEM

Because inquiry is the cornerstone of understanding science concepts, HMH Environmental Science offers the widest array of labs available in a high school program to promote hands-on exploration and application. All labs are accompanied by Teacher Notes, and are available online.



Laboratory Manager's Professional Reference for Teachers*

A must-have for anyone overseeing lab activities, this 150-page resource provides valuable guidelines and suggestions for managing student labs, including an overview of lab techniques, letters to parents/guardians, progress evaluation forms for students, science fair guide, and much more.

QuickLabs

Minilabs that reinforce key concepts with simple, everyday materials and minimal planning.

Field Studies

Hands-on environment-focused activities referenced in each chapter and located in Student Resources at the back of the Student Edition.

Exploration Labs

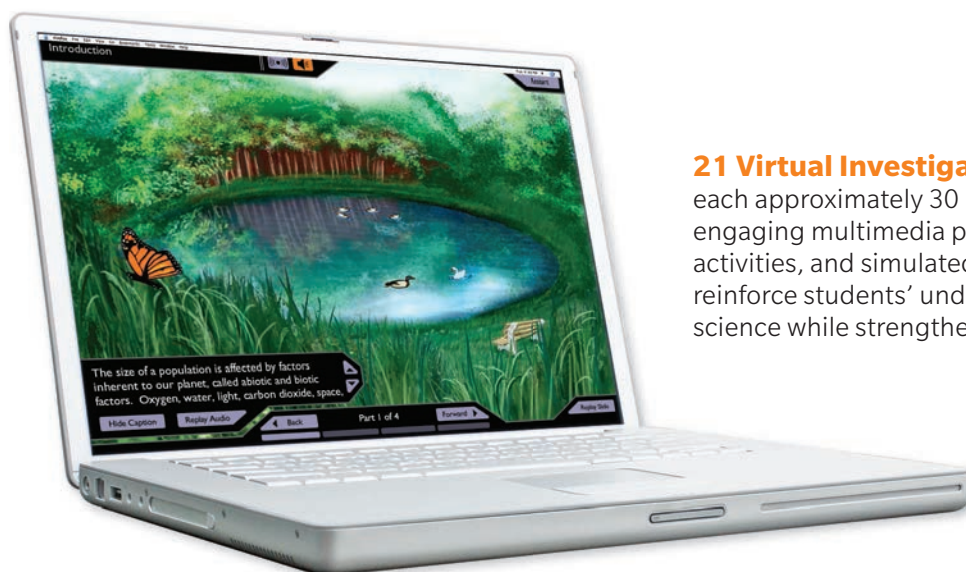
Exercises that prompt students to explore a situation or phenomenon to improve their understanding of a new concept, and then produce a written analysis.

STEM Labs

Sixty STEM activities that bring the application of science, technology, engineering, and mathematics into your classroom.

Inquiry Labs

Student-developed labs that encourage students to perform their own procedure to solve a problem, often using a real-life example.



21 Virtual Investigations

each approximately 30 minutes in length, combine engaging multimedia presentations, interactive activities, and simulated scientific investigations to reinforce students' understanding of environmental science while strengthening inquiry and lab skills.

QUICKLAB

Make Every Breath Count Procedure

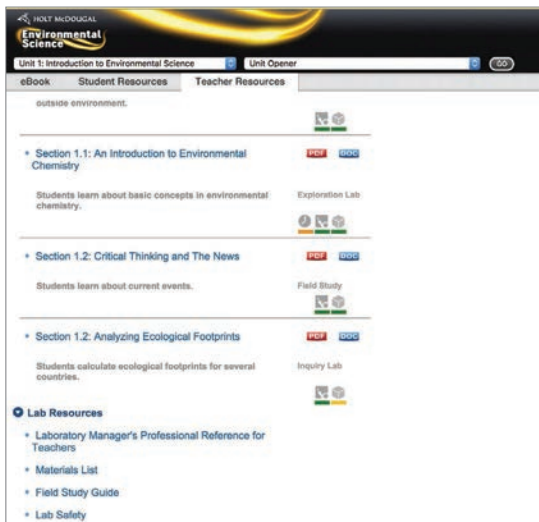
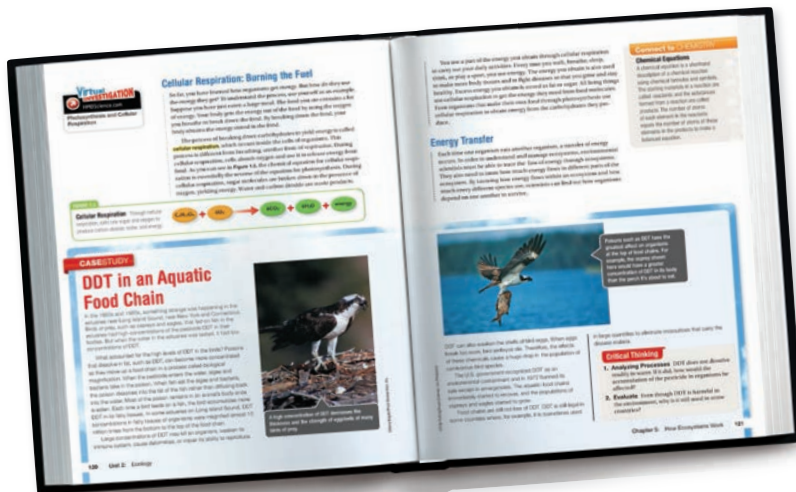
1. Pour 100 mL of water from a graduated cylinder into a 250 mL beaker. Add several drops of bromthymol blue to the beaker of water. Make sure you add enough to make the solution a dark blue color.
2. Exhale through a straw into the solution until the solution turns yellow. (CAUTION: Be sure not to inhale or ingest the solution.)
3. Pour the yellow solution into a large test tube that contains a sprig of Elodea.
4. Stopper the test tube, and place it

Hands-On Labs and Activities

QuickLabs provide short, hands-on experiences and require minimal materials. **Field Activities** give students the opportunity to observe and apply new knowledge in a real-world setting. Chapter Labs, including **Exploration** and **Inquiry Labs**, provide in-depth exploration of a concept using scientific methods.

Expanded Case Studies

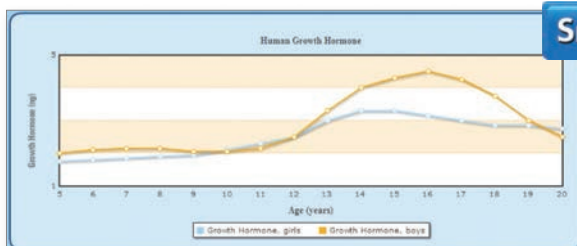
in the Student Edition encourage students to take action. These compelling features are introduced in the Chapter Opener and revisited in the Chapter Review.



Additional Lab Resources

The Supplemental Teacher Materials link on the home screen provides a wide variety of resources to support your lab program, including:

- Materials List
- Field Study Guide
- Lab Safety



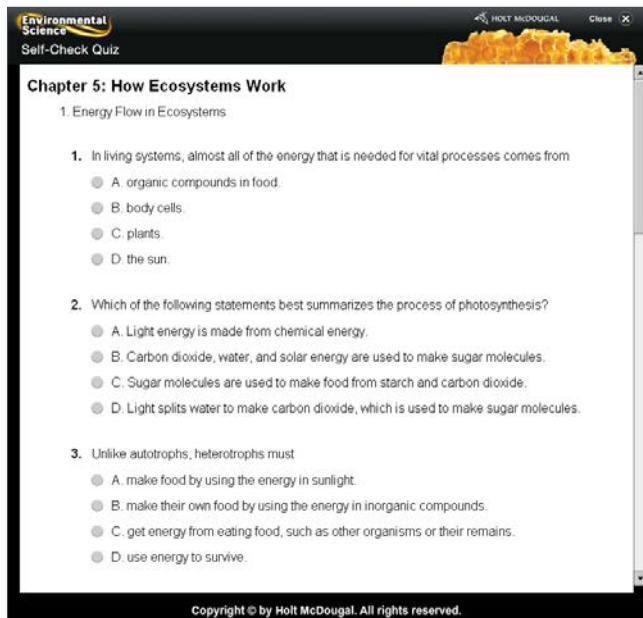
Smart Grapher

Smart Grapher

A powerful, easy-to-use online graphing tool enables students to use their own data to create line graphs, circle graphs, and more.

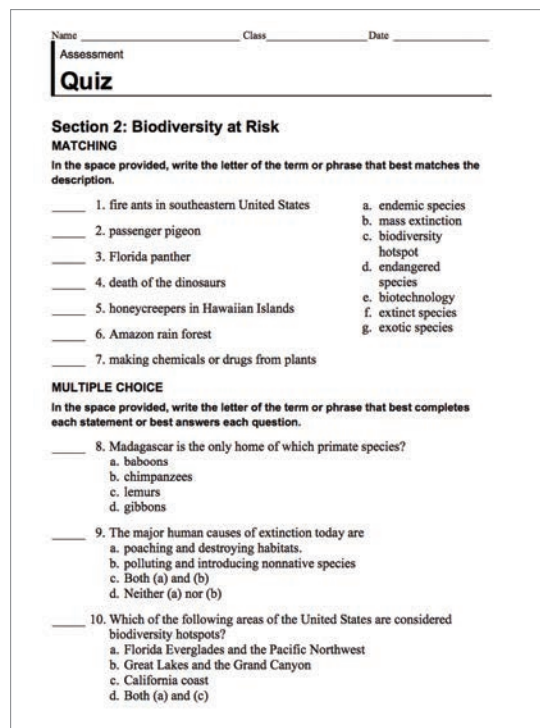
Flexible Assessment Tools to track Student Progress

The comprehensive and varied assessment options located at HMHScience.com bring together all HMH Environmental Science assessment tools in one convenient place, helping you make the best selection for assessing every student.



Section Self-Quizzes

Eight to ten questions for each section provide immediate feedback for students.

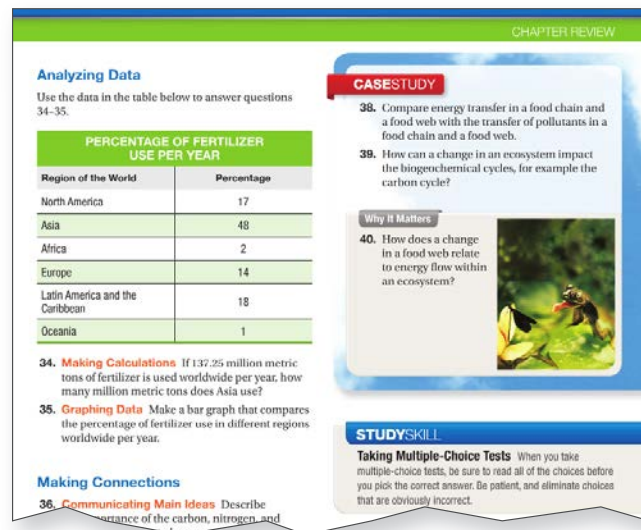


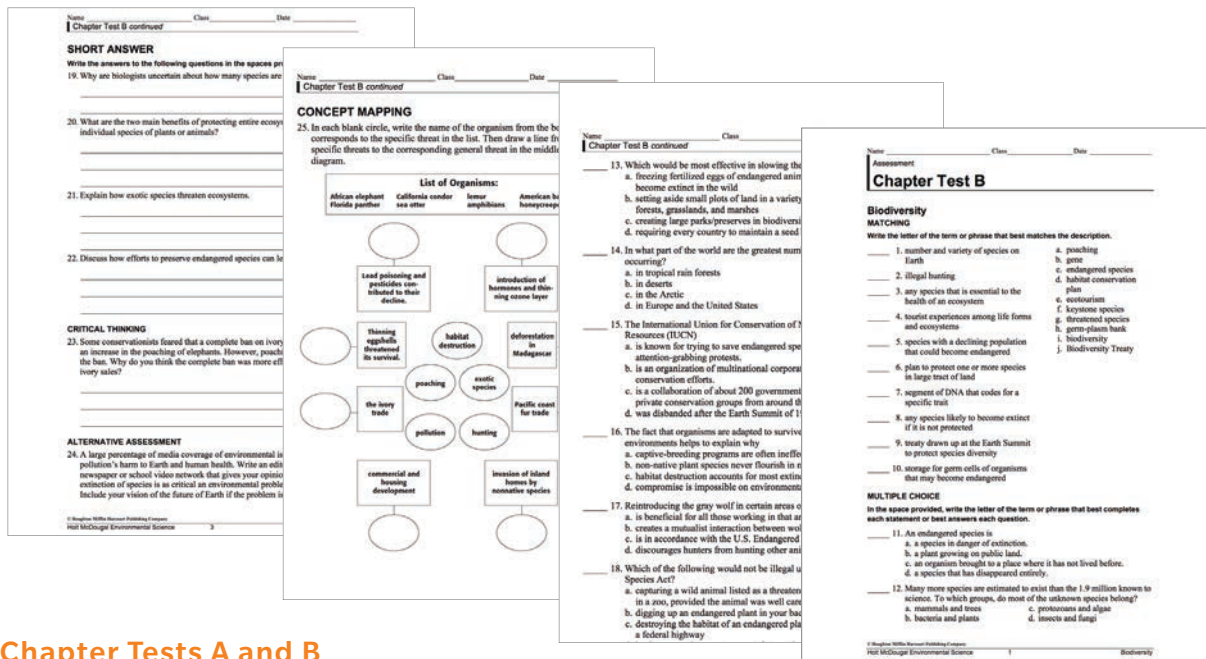
Section Quiz

Use this quick comprehension check to guide your reteaching options.

Review for Test-Readiness

- The **Chapter Review** connects the **Case Study** and **Why It Matters** strand to the section objectives.
- Each **Chapter Summary** highlights key terms and concepts to help students study for the **Chapter Review**.
- Each section ends with **Formative Assessment** questions that enable students to check their understanding and apply problem-solving skills.
- A **StudySkill**, included in the Chapter Review, helps students practice study and test-taking skills.





Chapter Tests A and B

Each chapter has two tests—for general and advanced levels—which can be edited directly or customized in ExamView.

ExamView® Test Banks

All chapter and section quizzes are available in these banks online at **HMDScience.com** or on the **Teacher One Stop DVD**. Use them to create customized tests, and use questions with classroom clickers.



Check for Understanding

To reinforce comprehension, **Check for Understanding** questions are placed strategically throughout the text.



CHECK FOR UNDERSTANDING

Recognize How do algal blooms harm aquatic ecosystems?

Online Assessment

For teachers who prefer to deliver online testing with automatic scoring, this option offers a 20-item multiple-choice test for every chapter, different from the quizzes available in ExamView.



HMH ENVIRONMENTAL SCIENCE

Make environmental science more **MEANINGFUL** and **ENGAGING** for your 21st-century students and are available online.

Interactive Online Edition

Active Reading Worksheets
Audio Files in English
Chapter Test A (available in Spanish)
Chapter Test B
Classroom Catalysts
Classroom Management Resources
Critical Thinking Worksheets
EcoZine Online Magazine
ExamView Test Banks
FoldNotes
Interactive Concept Maps
Lab Materials QuickList
Labs: QuickLabs, Field Studies, Inquiry, STEM, Exploration
Lab Safety
Lesson Planner
Map Skills Worksheets

Materials List
Online Assessment
PowerPresentations
Project Resources
Scientific Reasoning Skill Builder
Section Quizzes (available in Spanish)
Section Self-Check Quizzes
Smart Grapher
Student Edition
Study Guide (available in Spanish)
Teacher Edition
Teaching Visuals
Virtual Investigations

Print Resources

Environmental Student Edition
Environmental Study Guide
Environmental Teacher Edition



“Designed to help students understand the environmental issues of today and the future.”

—Michael Heithaus, Ph.D.

New Contributing Author

Michael Heithaus, Ph.D., brings his specialty in Marine Biology and a passion for engaging students in the wonders of the natural world and the application of the scientific method.

Houghton Mifflin Harcourt®

Environmental Science

What sets *Environmental Science* apart?

This print and digital program **developed specifically for high school students** offers a wealth of motivating, supportive features.

- **Updated content and case studies** provide a balanced approach to environmental topics, including ecology, Earth science, health, and policy issues.
- **Engaging online resources**—including EcoZine, an interactive magazine—expand learning and involvement outside the classroom
- **Full-featured Teacher Edition** provides differentiated resources to support success at all ability levels.
- **Widest array of labs** of any high school environmental science program builds inquiry and critical-thinking skills.



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HMH *Environmental Science!*



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