



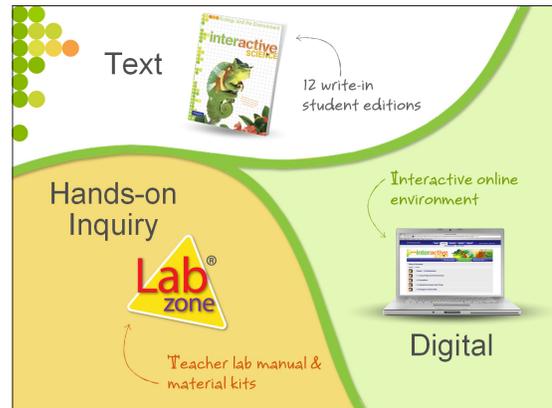
Program Components

Three Learning Paths

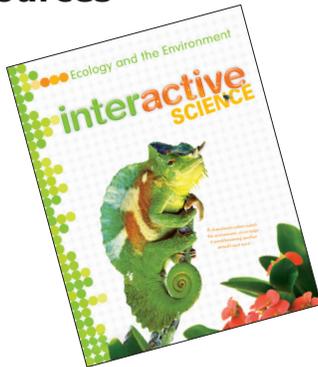
Interactive Science is a standards-based, next-generation science program for middle grades. *Interactive Science* features three learning paths:

- a text path;
- an inquiry-based path; and
- an engaging digital path.

Teachers may choose to follow one instructional path or integrate all three.



Text Resources

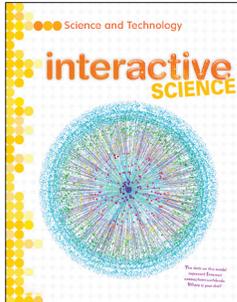


Student Write-in Editions

Interactive Science features twelve student write-in editions. The write-in student edition is not a workbook but rather an interactive text. It provides students with a personal record of their learning experiences. *Interactive Science* allows students to read, write, draw, graph, and self-assess all in one place. The interactive student editions engage students while encouraging them to foster ownership for their own learning.

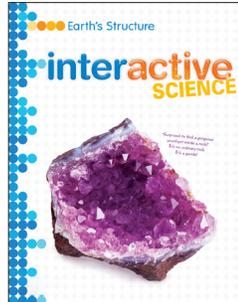
Science Strands Key

Science and Technology



Science and Technology

Earth Science



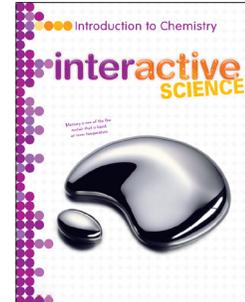
Earth's Structure

Life Science

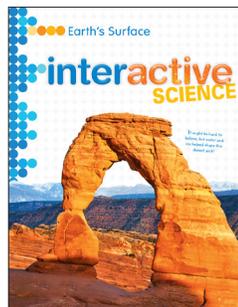


Ecology and the Environment

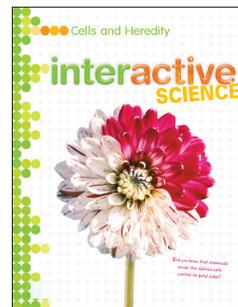
Physical Science



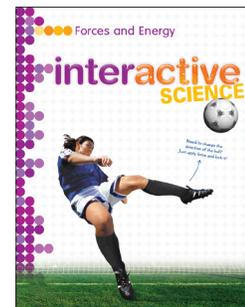
Introduction to Chemistry



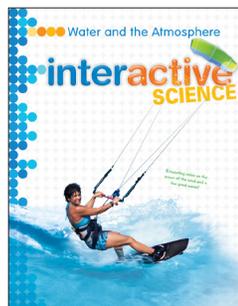
Earth's Surface



Cells and Heredity



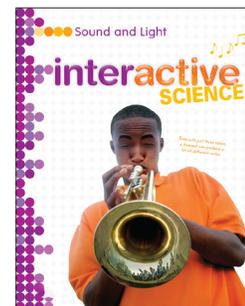
Forces and Energy



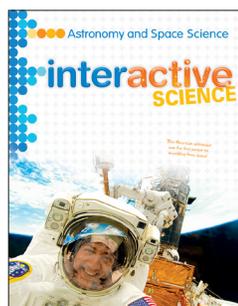
Water and the Atmosphere



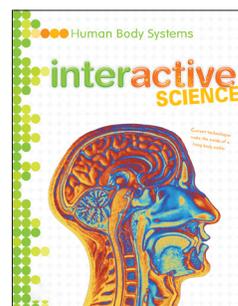
The Diversity of Life



Sound and Light



Astronomy and Space Science



Human Body Systems

Teacher's Resources

There are many resources available to teachers with *Interactive Science*, including the Teacher's Edition Resource, Lesson Planner, lesson notes, activities, and more.

Teacher's Editions

Each Interactive Science module has an accompanying spiral-bound Teacher's Edition Resource.

These resources include teaching strategies and tips as well as advice from the program authors. Grant Wiggins provides valuable information about the Understanding by Design® framework, Michael Padilla offers scaffolded inquiry strategies, and subject matter experts provide valuable teaching strategies and content information.

Lesson Planner

Each lesson is accompanied by a Lesson Planner, which provides three types of lesson plans that support blended, inquiry, and digital teaching approaches.

Living Things and the Environment		LESSON PLANNER 6.1	
<p>LESSON 1</p> <p>How do living things affect one another?</p> <p>Lesson Pacing: 3 periods or 11/2 blocks</p> <p>INQUIRY ON TASK? To do this lesson in approximately half the time, do the Activate Prior Knowledge activity on page 4. A discussion of the key concepts on pages 5, 6, and 9 will familiarize students with the lesson content. Do the Quick Lab and have students do the Real-World Inquiry online. The rest of the lesson can be completed by students independently.</p> <p>Preference Navigator, in the online Planning tools, allows you to customize <i>Interactive Science</i> to your own teaching style. You can also edit lesson plans by selecting the Lesson Planner option.</p> <p>Digital Teacher's Edition allows you to access your Teacher's Edition and Resource online.</p> <p>Lesson Vocabulary</p> <ul style="list-style-type: none"> organism • habitat • biotic factor • abiotic factor • species population • community • ecosystem • ecology <p>Content Refresher</p> <p>Carbon Dioxide: Carbon dioxide is an abiotic factor that all plants and some algae require to carry out photosynthesis. Chlorophyll, the green pigment in plants and some algae, absorbs energy from sunlight. The organism uses this energy to combine carbon dioxide and water in a chemical reaction that produces sugars, including glucose.</p> <p>Biosphere: All of Earth's communities are part of a higher level of organization, the biosphere. The levels of organization that make up the biosphere interact with each other. But they also interact in various ways with Earth's other "spheres." These include the atmosphere, the hydrosphere, and the lithosphere.</p> <p>LESSON OBJECTIVES</p> <ul style="list-style-type: none"> Identify the needs that must be met by an organism's surroundings. Identify biotic and abiotic parts of a habitat. Describe the levels of organization within an ecosystem. <p>4 T1 Populations and Communities</p>	<p>Blended Path <small>Active learning using Student Edition, Inquiry Path, and Digital Path</small></p> <p>ENGAGE AND EXPLORE</p> <p>To teach this lesson using a variety of resources, begin by reading My Planet Diary as a class. Have students share ideas about the mouse lemur population and identify what they know about habitats. Then do the Inquiry Warm-Up activity. Students will identify living and nonliving things in magazine pictures. Discuss the connections different students chose and how they decided to test the living thing's dependence. The After the Inquiry Warm-Up worksheet sets up a discussion about how living things also depend on other living things. Have volunteers share their answers to number 4 about the effect of different seasons.</p> <p>EXPLAIN AND ELABORATE</p> <p>Teach Key Concepts by explaining the term habitat and having students answer questions about what a habitat provides.</p> <p>Continue to Teach Key Concepts by explaining the difference between biotic and abiotic factors. Ask students to compare and contrast living and nonliving things in their own environment. Use Figure 2 to illustrate biotic and abiotic factors in the prairie dog's habitat. Then have students practice the lesson's inquiry skill in the Apply It activity. In the chapter Lab Investigation activity, students will build a terrarium and observe the interactions between the biotic and abiotic parts of the closed ecosystem.</p> <p>Using a park ecosystem as an example, Teach Key Concepts by asking students to identify the levels of organization from smallest to largest. Use the Explore the Big Question activity to illustrate the levels of an ecosystem. Students can do the Real-World Inquiry online to experiment with the effects of changing certain factors of a population in a habitat. Discuss student responses to the Answer the Big Question activity. Hand out the Key Concept Summaries as a review of each part of the lesson. Students can also use the online Vocab Flash Cards to review key terms.</p> <p>EVALUATE</p> <p>Have students take the Lesson Quiz. For an alternate assessment, see the ExamView® Computer Test Generator, SuccessTracker™ Online, or the Progress Monitoring Assessments.</p> <p>ELL Support</p> <p>1 Content and Language</p> <p>Compare the words <i>organism</i>, <i>organize</i>, <i>abiotic</i>, <i>biotic</i>, and <i>ecosystem</i>/ <i>ecology</i>, featured in the lesson vocabulary. Explain what the word parts signal: organ- to arrange into systems; a- not, dis- being, eco- relating to the environment.</p>	<p>Inquiry Path <small>Hands-on learning in the Lab zone</small></p> <p>ENGAGE AND EXPLORE</p> <p>To teach this lesson with an emphasis on inquiry, begin with the Inquiry Warm-Up activity. Students identify living and nonliving things in magazine pictures. Lead a discussion about the connections different students chose and how they decided to test the living thing's dependence. Have students do the After the Inquiry Warm-Up worksheet. Talk about how living things also depend on other living things. Have volunteers share their answers to number 4 about the effect of different seasons.</p> <p>EXPLAIN AND ELABORATE</p> <p>Focus on the Inquiry Skill for the lesson. Point out that when you draw a conclusion, you make a statement summing up what you have learned from an experiment. What conclusion can be drawn from the Inquiry Warm-Up activity (<i>All living things depend on other living things and non-living things in their habitat to survive</i>)? Have students do the Quick Lab and then share their results. How do their inferences differ? Have volunteers suggest why that may be.</p> <p>Do the Teacher Demo and classify the various materials under the headings BIOTIC and ABIOTIC on the board. Review control, manipulated variable, and responding variable before beginning the Apply It activity. Ask volunteers to share their conclusions. Have students do the Lab Investigation. In this investigation, students build a terrarium and observe the interactions between the biotic and abiotic parts of the closed ecosystem. You may elect to have them do the Open Inquiry version.</p> <p>Use the Explore the Big Question activity in the student edition to illustrate the levels of an ecosystem. Students can do the Real-World Inquiry online to experiment with the effects of changing certain factors of a population in a habitat. Do the Quick Lab to reinforce understanding of ecosystems. Discuss student responses to the Answer the Big Question activity in the student edition. Students can use the online Vocab Flash Cards to review key terms.</p> <p>EVALUATE</p> <p>Have students take the Lesson Quiz. For an alternate assessment, see the ExamView® Computer Test Generator, SuccessTracker™ Online, or the Progress Monitoring Assessments.</p>	<p>Digital Path <small>Online learning at my.science.pearson.com</small></p> <p>ENGAGE AND EXPLORE</p> <p>To teach this lesson using digital resources, begin by having students explore the real-world connections to living things and their environment at My Planet Diary online. Have them access the Chapter Resources to find the Unlock the Big Question activity. There they can answer the questions and refine their responses as they continue through the lesson. You can reassign the activity and have students submit their work so you can track their progress.</p> <p>EXPLAIN AND ELABORATE</p> <p>Students reading above, at, or below the lexile measure of this lesson can access basic content readings at their level at My Reading Web. Have students use the online Vocab Flash Cards to preview key terms. Do the Quick Lab and then ask students to share their results. How do their inferences differ? Have volunteers suggest why that may be.</p> <p>Review control, manipulated variable, and responding variable before assigning the online Apply It activity. Ask volunteers to share their conclusions and have all students submit their work to you. Do the Teacher Demo and classify the various materials under the headings BIOTIC and ABIOTIC on the board.</p> <p>Assign the online Real-World Inquiry ahead of time. In this activity, students have an opportunity to experiment with the effects of changing certain factors of a population in a habitat. Have them answer the questions and submit their work. Discuss student responses to the online Answer the Big Question. The Key Concept Summary online allows students to read a summary and see an image associated with each part of the lesson. Online remediation is available at My Science Coach.</p> <p>EVALUATE</p> <p>Have students take the online Lesson Quiz. For an alternate assessment, see the ExamView® Computer Test Generator, SuccessTracker™ Online, or the Progress Monitoring Assessments.</p>
	<p>2 Frontload the Lesson</p> <p>Preview the lesson visuals, labels, and captions. Ask students what they know about the words <i>population</i> and <i>community</i>. Explain the specific meanings those words have in science.</p> <p>3 Comprehensible Input</p> <p>Have students study the visuals and their captions on pp. 6 and 8-9 to support the key concepts of the lesson.</p>	<p>4 Language Production</p> <p>Pair or group students with varied language abilities to complete labs collaboratively for language practice. Have each student copy the completed written lab for personal reference.</p> <p>5 Assess Understanding</p> <p>Make true or false statements using lesson content and have students indicate if they agree or disagree with a thumbs up or thumbs down gesture to check whole-class comprehension.</p>	

Lesson Notes and Activities

Within each lesson, there are activities that support key reading and inquiry skills. For the lesson shown in this example, the reading skill is a focus on comparing and contrasting, whereas the inquiry emphasis is placed on drawing conclusions.

Reading Skills

Point out the target icons in the Chapter Preview. Tell students that this icon indicates the specific Reading Skill that is featured in each lesson. Explain that reading skills are strategies they can use to help get the most out of what they read. Let students know that this icon also appears within the lesson to identify where a particular reading skill will be used.

Inquiry Skills

Point out the yellow triangles in the Chapter Preview. Explain that this icon identifies the specific Inquiry Skill that is the focus of each lesson. Explain to students that inquiry skills are the same skills scientists use to ask questions and search for answers. Tell students that they can expect to see this icon next to questions where they apply the lesson-specific inquiry skill.

LESSON 1

- organism • habitat
- biotic factor • abiotic factor
- species • population
- community • ecosystem
- ecology

Compare and Contrast

Draw Conclusions

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Lessons include differentiated instruction tags that make it easy for teachers to find interventions specific to learner needs. Ancillaries are also available that support English language learners and differentiated instruction.

DIFFERENTIATED INSTRUCTION

LEARNING TAGS

EARLY INTERMEDIATE: Extend Language Remind students to use the *DK Visual Glossary* to look up definitions of terms they do not understand.

INTERMEDIATE: Extend Language Point out the following common words that are similar in Spanish and English: comunidad; comunidad; inmigración; Immigration; adaptación; adaptation; competición; competition.

Infer Meanings Point out the term *mutualism* on the vocabulary list. Ask students what word they know that makes up part of this term. (*Mutual*) Ask students to speculate on the meaning of *mutualism*, and then look up the term to see if they were correct. Have students infer and then verify the meanings of succession and symbiosis.

Assessment

A variety of assessment options are available. The student write-in edition provides students with self-assessment that corresponds with each key concept question. Several informal assessment items, like Apply It and Do the Math, help students monitor their understanding of the chapter concepts. At the end of the chapter is a Review and Assessment section.

Progress Monitoring Assessments are also available. These assessments help teachers track student progress and give students opportunities to practice for standardized tests.

Review and Assessment

1000 Living Things and the Environment

1. A prairie dog, hawk, and a snake are all members of the same...

2. Grass is an example of a(n)...

3. Sequence the three levels to order from the smallest to the largest population, organism, ecosystem, community.

4. **Apply Concepts** Name two biotic and two abiotic factors you might find in a forest ecosystem.

5. **Deep Connections** In 1815, Mount St. Helens, a volcano in Indonesia, erupted. So much ash and gas did that the atmosphere that 1815 is referred to as the "Year Without a Summer." How might a volcanic eruption affect the abiotic factors in an organism's habitat?

6. **Write It Out** Write at least one paragraph, describing your habitat. Decide how you get the food, water, and shelter you need from your habitat. How does the habitat meet your needs in ways that another could not?

1000 Populations

7. All of the following are limiting factors for population except...

8. Individuals leave a population...

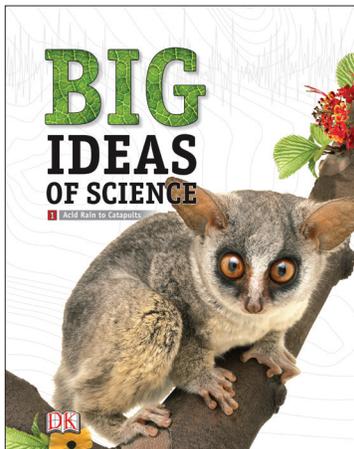
9. **Graph** Use the data to make a line graph.

Year	Population (thousands)
0	10
5	15
10	20
15	25
20	30
25	35
30	40
35	45
40	50
45	55
50	60

10. **Interpret Data** In which year was the deer population the highest? The lowest?

11. **Develop Hypotheses** In Year 10 of the study, the population of deer increased. How might this have affected the deer population?

DK Big Ideas of Science Reference Library



The text path includes the *DK Big Ideas of Science* reference library. Part of learning about science involves exploring their own natural curiosities. The six volumes of the *DK Big Ideas of Science* reference library reinforce the unifying concepts of science and encourage students to dig deeper in their explorations of these Big Ideas.

This reference library is organized by key science topics. These books use the Understanding by Design® framework to reinforce key science concepts and student explorations. The library can be used for student reference or as a supplement for whole class instruction.

Inquiry Resources



Teacher's Lab Resource

The Teacher's Lab Resource has a variety of labs from short, fully directed labs to longer, open inquiry labs.

Teacher Notes		38
LESSON 1 • Living Things and the Environment		
Inquiry Warm-Up	What's in the Scene?	46
Quick Lab	Organisms and Their Habitats What Does an Organism Get From Its Environment?	47
Lab Investigation	A World in a Bottle What Are the Two Parts of an Organism's Habitat?	48
	Pre Lab Directed Inquiry	49
	Open Inquiry	53
Quick Lab	Organizing an Ecosystem How Is an Ecosystem Organized?	57

Each lesson begins with an Inquiry Warm-Up activity. These warm-ups help students begin thinking about the inquiry objective for the lesson.

Quick Labs support the inquiry activities in the student write-in text.

Two types of Lab Investigations are available. Directed Inquiry activities provide step-by-step instructions for the lab. Open Inquiry activities allow students to plan, design, and implement their own lab investigations.



Inquiry Ancillaries



Teachers have a choice of several inquiry-based ancillaries that are available to support the program. These resources include activities that allow students to explore science concepts in new and realistic contexts. Some of these options include Scenario-Based Investigation, Interdisciplinary Activities, Big Idea Activities and Projects, and three books that include Inquiry Skill Activities.

Materials Kits



Module kits for lab activities are available directly from Savvas. Options include both consumable and nonconsumable materials. Each kit is neatly packaged and organized for quick and easy setup. Refill kits for each module are also available, making it easy to replenish consumable materials at the end of the year.

Digital Resources



My Science Online is the gateway to the digital resources available on Savvas SuccessNet. Students can explore the Big Questions and complete the chapter activities online.

Digital Features: Teacher Tools

Lesson Planning and Online Assessment

Teachers can plan their lessons by month, week, and day. With the Preferences Navigator, teachers may also customize their lesson plans to be more text based, inquiry-based, or blended.

Teachers can also assign assessments, track student progress, and provide differentiated instruction. Utilizing Success Tracker, the teacher can assign assessments, and the system will provide individual instruction based on student performance.



Digital Features: Student Resources

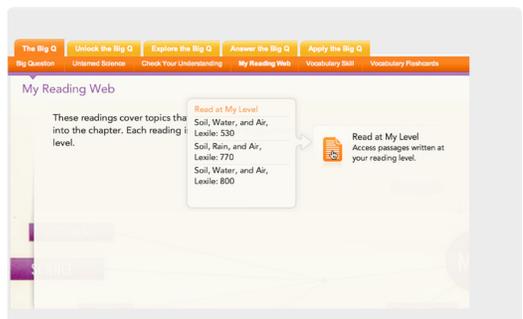
My Science Coach

Students needing extra help may use My Science Coach as a virtual science tutor. They can get extra practice and take short quizzes.



My Reading Web

Struggling readers will benefit from using My Reading Web. These students have access to Lexile leveled reading passages. These passages address the same material that is covered in the chapter.



Interactive Art

Static textbook images come to life on My Science Online. Students may manipulate and interact with the art.



Planet Diary

Each chapter includes a Planet Diary. Students can blog about various science concepts and submit their responses to key lesson questions directly to their teacher. Teachers can easily access student responses on Savvas SuccessNet.



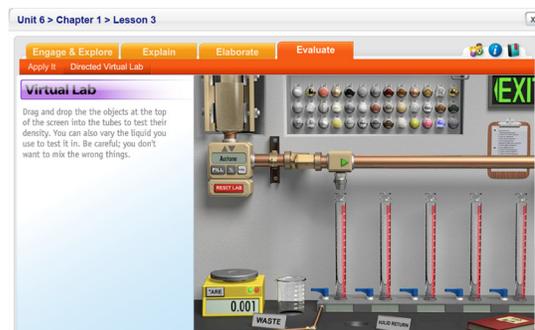
Untamed Science

MyScienceOnline.com features the Untamed Science Crew. They are a team of scientists featured in the Untamed Science videos that accompany each chapter of the program. These videos engage students by taking them out into the real world of science.



Virtual Labs

Students can test their knowledge by performing simulated experiments that correspond to lessons in the student edition, in a completely safe, virtual lab environment with no cleanup required.



Review

These are just a few of the components available for *Interactive Science*. For more program information, be sure to look at the *Interactive Science* Program Guide. This teacher's resource, available from Savvas, also maps *Interactive Science* content to national science standards.