

Mc
Graw
Hill

FLORIDA Science

PROGRAM OVERVIEW

GRADES 6–8





Unlimited Potential

McGraw Hill Florida Science was built to empower students to ask questions, pose hypotheses, conduct hands-on investigations, and communicate their findings.

Drawing on feedback from Florida teachers, we set forth to create a program where inquiry lays the foundation for deep understanding of science, where a spirit of discovery improves students' reading and writing skills, and where the ultimate goal is Florida State Academic Standards for Science (FSAS) mastery and a lifelong love of learning.

Guided by Experts

Our author and contributor collection is made up of FSAS experts committed to engaging students throughout their learning experience:



Julie Jackson, Ph.D.

Creator of Interactive Word Walls, Dr. Jackson draws on expertise in vocabulary, language acquisition, and FSAS knowledge to facilitate student understanding and acquisition of science vocabulary.



Page Keeley

Page Keeley's internationally known probes put students at the center of the lesson to focus content on their current understandings and challenge their preconceptions.



Dinah Zike

Creator of NEW! Foldables and interactive notebooking, Dinah Zike focuses on helping students understand difficult new concepts and facilitating engagement.



Cindy Guerrero, Ph.D.

Dr. Guerrero utilizes her expertise in English-language development to maximize the program's EB/EL support.



Felicia Mensah, Ph.D.

A scholar in science teacher education and teacher professional development, Dr. Mensah provides expertise on life science as well as diversity and inclusion in all science experiences.



Doug Fisher, Ph.D.

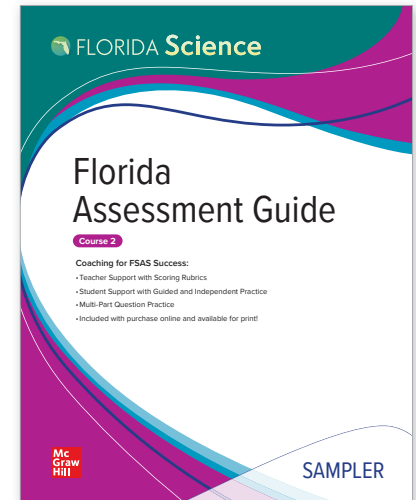
A renowned reading expert, Dr. Fisher helped create our new and improved Science Literacy Essentials to foster reading comprehension.

A Program Built for the FSAS

Explicitly designed for the FSAS and the modern Florida science classroom, *McGraw Hill Florida Science* combines the FSAS with feedback from our most trusted collaborators—Florida teachers and administrators—and offers the tools to help every student achieve success in science.

FSAS Assessment Guide

Online and printable guided practice tests help students prepare for state assessments. Each practice test includes rigorous, high-level thinking questions and answers so students can check their work.



TEACHER
FAVORITE!

Lesson 1 Earth's Changes Over Time SC.7.E.6.5 SC.7.E.6.7

Lesson Overview

Essential Question

What evidence supports that Earth has changed over time?



Lesson Objective

Students describe the evidence that supports that Earth has changed over time, including fossil evidence, plate tectonics, and superposition.

Learning Progression

GO ONLINE **FSAS Refresh** Use this chart to review what your students have already learned and to help guide their learning as they progress in their development of their scientific knowledge. If students need support on background knowledge go online for resources or assign LearnSmart review assignments.

G6

SC.6.E.6.1 Describe and give examples of ways in which Earth's surface is built up and torn down by physical and chemical weathering, erosion, and deposition.

G7

SC.7.E.6.5 Explore the scientific theory of plate tectonics by describing how the movement of Earth's crustal plates causes both slow and rapid changes in Earth's surface, including volcanic eruptions, earthquakes, and mountain building.

HS

Earth/Space Science
SC.912.E.6.3 Analyze the scientific theory of plate tectonics and identify related major processes and features as a result of moving plates.

Focus on Nature of Science

Explain that scientific knowledge is the result of a great deal of debate and confirmation within the science community. **SC.7.N.1.7**

Identify an instance from the history of science in which scientific knowledge has changed when new evidence or new interpretations are encountered. **SC.7.N.2.1**

Recognize and explain the difference between theories and laws and give several examples of scientific theories and the evidence that supports them. **SC.7.N.3.1**

Advanced Course Resources

Describe and differentiate the layers of Earth and the interactions among them. **SC.912.E.6.1**

Connect surface features to surface processes that are responsible for their formation. **SC.912.E.6.2**

Analyze the scientific theory of plate tectonics and identify related major processes and features as a result of moving plates. **SC.912.E.6.3**

Access Points

Recognize that the ground on Earth's surface changes over time. **SC.7.E.6.Pa.3**

Identify an example of a change in scientific knowledge based on new evidence or new interpretations. **SC.7.N.2.In.1**

Identify that scientific theories are explanations and laws describe relationships, and both are supported by evidence. **SC.7.N.3.In.1**

FSAS Progression Breakdown

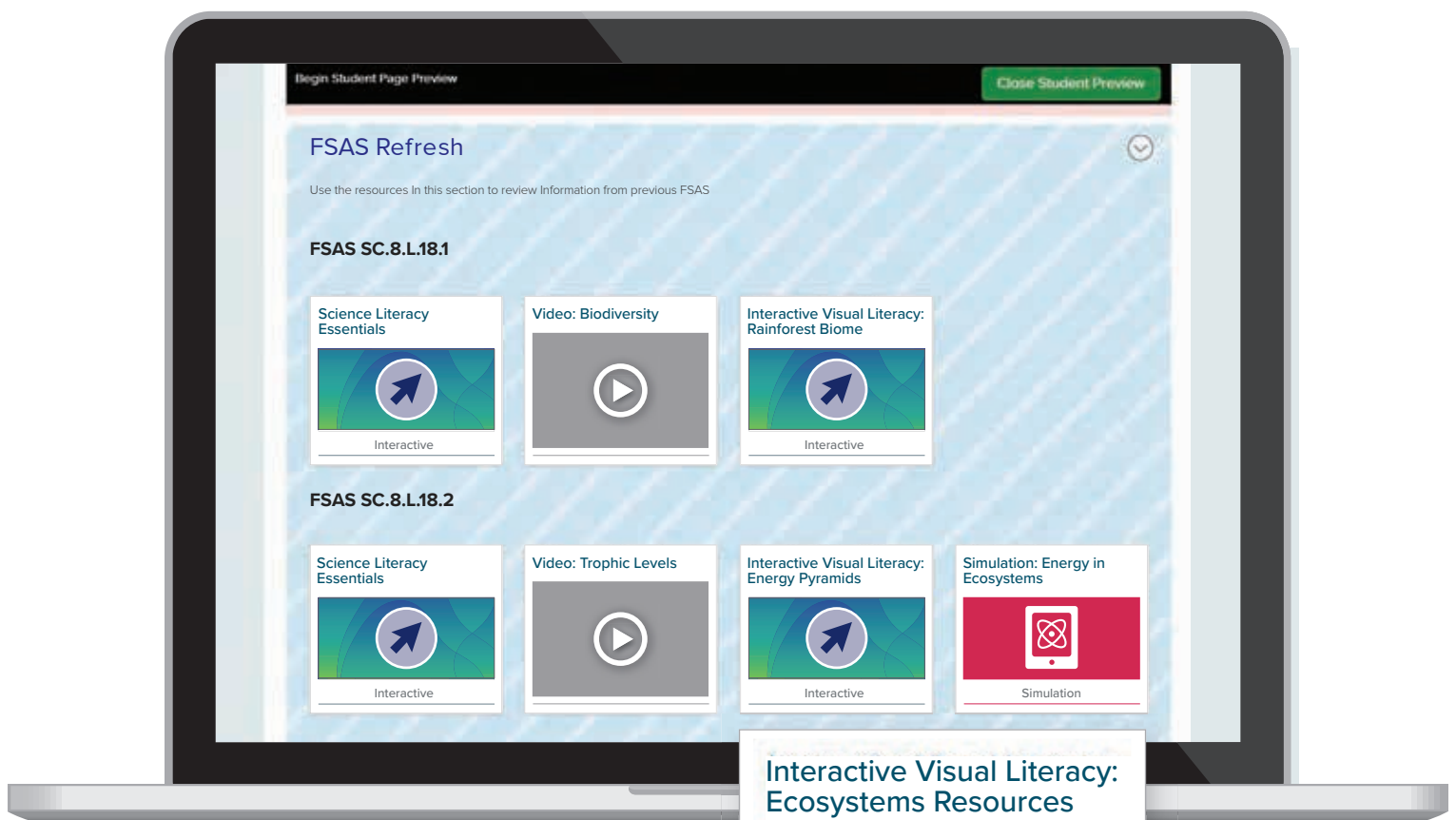
Every lesson in the *Florida Science* program begins by using prerequisite FSAS as a launch pad—seamlessly building up to the lesson-level FSAS concepts. Each lesson comes with resources to pre-assess and remediate students as needed. Cognitive verbs (investigate, distinguish, evaluate, etc.) help unpack complex concepts, clearly defining the extent to which topics must be covered to meet each standard.

Personalized Learning

FSAS Refresh

After conducting pre-assessments, teachers can assign FSAS Refresh activities to students who need them, ensuring they understand and remember content from elementary school before diving into new material.

- Before covering a new standard, teachers can assign content from previously covered standards.



Students can choose

from a variety of assets from previous grade levels to reinforce previously learned ideas.

Interactive Visual Literacy: Ecosystems Resources



Interactive

LearnSmart®

Each student enters the classroom with different strengths, interests, and abilities. Eliminate guesswork and get to the heart of their learning needs with adaptive, comprehensive differentiation.

LearnSmart uses smart, adaptive technology and multiple-choice questions to help gauge student understanding. To ensure end-of-course assessment success, LearnSmart focuses solely on questions covering the FSAS.

Teachers can assign LearnSmart questions tailored to individual FSAS standards, ensuring students master the content needed.

Unique personalized learning experience.

PROGRAM FEATURE!

McGraw Hill

Assignment Resources ⓘ Instructions

- Organisms and Environments
- FSAS SC.7.L.17.3
 - Dependence on Resources in Ecosystems
 - Competing for Resources in Ecosystems
 - Define competition.
Resource: Practice: Define competition.
 - Define limiting factors.
Resource: Practice: Define limiting factors.
 - Identify the limiting factor on a population (when given a scenario).
Resource: Simulation: identify the limiting factor on a population (when given a scenario).
 - Apply what happens to an organisms when the availability of a resource (abiotic and biotic) changes.
Resource: Reading: Apply what happens to an organisms when the availability of a resource (abiotic and biotic) changes.
 - Apply what happens to a population when availability of a resource (abiotic and biotic) changes.
Resource: Reading: Apply what happens to a population when availability of a resource (abiotic and biotic) changes.

When students answer a question incorrectly, they can access built-in supports to review relevant material in different formats:

- **Short and focused texts, articles, and examples**
- **Lesson Opener Videos, Content Videos, Science Videos, and more**
- **Quick interactives and manipulatives**

Optimized for Teachers and Supervisors

Structured for flexibility, *Florida Science* allows teachers and supervisors to follow a recommended lesson path or adapt instruction as needed. Whichever you choose, you can feel confident your students are getting a comprehensive science education aligned to the FSAS.

Chapter Resource Snapshot offers a menu of resources for teachers, supervisors and district curriculum specialists to select resources to add to their existing lessons.

Science Backgrounds open each lesson with a high-level content overview, conveniently front-loading the information for teachers new to the topic.

PROGRAM FEATURE!

The screenshot displays the 'Weather and Climate' chapter interface. On the left, the 'Chapter Resource Snapshot' is visible, with tabs for 'VIDEOS' and 'LABS'. Below this, four lessons are listed: Lesson 1 Describing Weather, Lesson 2 Weather Patterns, Lesson 3 Severe Weather, and Lesson 4 Climates of Earth. Each lesson includes a 'Quick Launch Video', 'Explain It Video', 'Take It Further Video', and 'Anytime Lab Video'. On the right, the 'MORE WAYS TO LEARN' section includes a 'STEM Project' and 'STEM Career' links. The 'ASSESSMENTS' section lists 'Chapter Pretest', 'Chapter Review', 'Chapter Test', and 'FSAS Assessment Guide'. A 'Course-Wide Differentiation Options' sidebar on the far right features icons for 'LearnSmart', 'Science Literacy Essentials', 'Actively Learn', and 'WORD LAB', each with a brief description of the tool's purpose.

Inspiring New Teacher Confidence

Built to support the influx of new teachers across the state, *Florida Science* provides a clear path to cover the FSAS. Supports throughout the Teacher's Edition deliver additional tools to ensure teacher success and student content mastery.

Every lesson contains dedicated **differentiation supports** for teachers, including personalized learning support from LearnSmart and lower Lexile-level content from Science Literacy Essentials.

Aligned to the research-based **5Es**, *Florida Science* lesson plans plug easily into the plans you already use.

Lesson 1 Earth's Changes Over Time SC.7.E.6.5 SC.7.E.6.7

Plan Your Lesson SC.7.E.6.5 SC.7.E.6.7

Essential Question: What evidence supports that Earth has changed over time?

Lesson Objective: Students describe the evidence that supports that Earth has changed over time including fossil evidence, plate tectonics, and superposition.

Looking for more differentiation options? Find the **REINFORCE**, **EXTEND**, and **ELL** activities and strategies within the lesson support for differentiation support. Even more differentiation options include Science Literacy Essentials, LearnSmart, and Word Lab.

*Go online for an editable version of this lesson plan.

DIGITAL FEATURE!

Teacher eBook

No need to carry around a textbook—the *Florida Science* Teacher eBook has every feature of the print version!



DAY 1

ENGAGE 45 min

PLAN

- ✓ Preview Lesson Overview
- ✓ Build Interactive Word Wall frame
- ✓ Plan for Quick Launch activity
- ✓ Preview Page Keeley Science probe and strategy

TEACH

35 min

- ✓ Quick Launch activity and video
- ✓ Discuss activity and video

ASSESS

10 min

- ✓ Assess prior knowledge and misconceptions with *Earth's Plates*

DAY 2

EXPLORE/EXPLAIN 45 min

PLAN

- ✓ Preview Lesson Foldable
- ✓ Assign Student Edition and if needed, Science Literacy Essentials or leveled ebook
- ✓ **Differentiation** Review differentiation support from Instructional Options

TEACH

35 min

- ✓ Read *Evidence That Continents Move*
- ✓ Visual Literacy—Read the Map
- ✓ Add to the Interactive Word Wall

ASSESS

10 min

- ✓ Gauge understanding with provided questions
- ✓ Use Apply It questions to check for understanding
- ✓ Exit Ticket options
- ✓ **Differentiation** Assign LearnSmart for review or remediation


Hands-On Labs, Real-World Investigations

Real scientists get their hands dirty. By conducting hands-on investigations, students can apply their scientific knowledge to exciting real-world contexts.

- **Claim, Evidence, Reasoning (CER)** writing prompts help students make meaning from their investigation.
- **Anytime Investigations Videos** provide student-friendly videos showing lab work in action.
- **STEM Projects** aligned to each strand of the multi-dimensional learning model allow students to bring their own creativity to design solutions to science and engineering challenges and investigate their world.
- **Ready-to-use notebook activity sheets** allow students to record their investigations quickly and simply.




Name: _____ Date: _____

LESSON 31 • TIME: 45 min
 **Explore Lab: Identify Noncontact Forces**

Not all forces are contact forces that require objects to touch. How can you identify noncontact forces acting on an object?

Question
 How can you change the motion of an object without touching it?

Safety
 Read and complete a lab safety form.


Materials

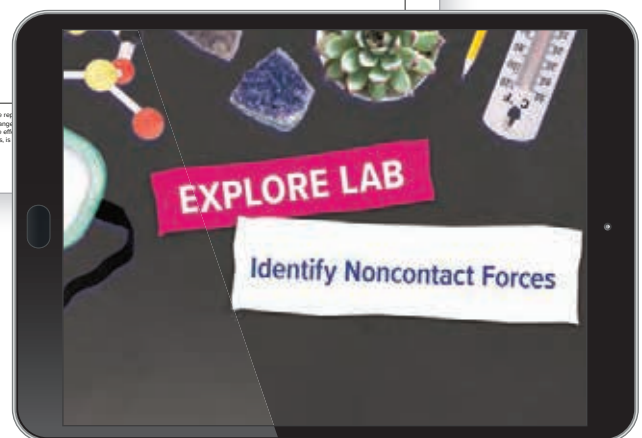
- pencil
- paper clips (5)
- magnets (2)
- paper

Procedure

1. Examine the materials.
2. Investigate to see if you can change the motion of the paper clips without another object physically touching them. Record your observations.
3. Drop the pencil and the paper to the floor. Record your observations.
4. Return all materials to the area specified by your teacher.

Data and Observations

This material may be used
 responsibility for change
 or liability to the left
 South in Science Labs, LLC



Anytime Investigation Video

LESSON 1

Energy Flow in Ecosystems

ESSENTIAL QUESTION
What happens to energy as it flows through ecosystems?

Quick Launch

Getting Enough Food
How many plants do rabbits need to eat each day? Do hawks need a certain amount of meat to survive? Follow your teacher's directions to model some feeding relationships in an ecosystem. Record your observations or draw a sketch to show what you modeled with your class.

Interactive Word Wall

energy
producer
photosynthesis
consumer
food chain
food web
energy pyramid
trophic level

FSAS Focus in this Lesson

SC.8.L.18.3 Construct a scientific model of the carbon cycle to show how matter and energy are continuously transferred within and between organisms and their physical environment.

SC.8.L.18.4 Cite evidence that living systems follow the Laws of Conservation of Mass and Energy.

Also covers: **SC.8.L.18.1**, **SC.8.L.18.2**

536 Chapter 12 Matter and Energy in Ecos



Explore Simulation

Whether jotting down lab notes or clicking through digital investigations, students have access to an array of rigorous hands-on activities through *Florida Science*. The program prompts every student to dive deep into the lesson content and observe new concepts in action.

- **Quick Launch** activities introduce lessons with hands-on activities, giving students the chance to ask questions as they explore new concepts.
- **Explore Labs** give students the opportunity to lead their own investigation from start to finish, alongside the explanation of the content.
- **Explore Simulations** allow students to explore content beyond the limits of the classroom and as representations of real-world experiences.
- **Teacher-driven Quick Demos** spark student curiosity and encourage them to ask questions and find explanations.

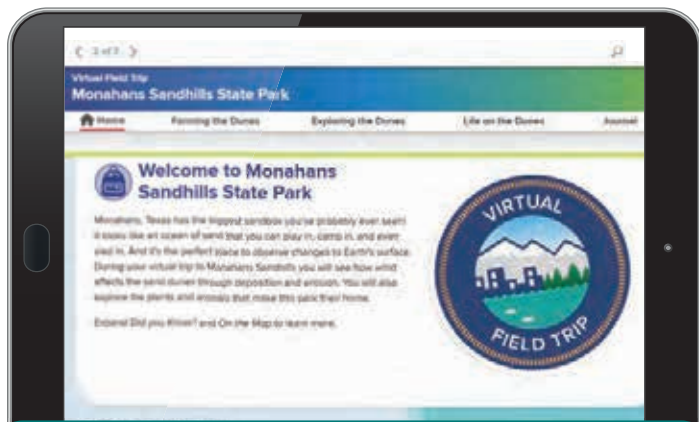
Boundless Science Learning

Transport students beyond the walls of your classroom with cutting-edge digital content, including interactives, simulations, videos, and more. Fun and easy-to-use, these features align with lesson topics to spark scientific curiosity, support discussion, enhance review, and deepen understanding.



Explore Simulations

allow students to manipulate variables in a scenario beyond the limits of the classroom.



Virtual Field Trips

use engaging questions, pictures, and videos to explore diverse locations and show how they connect to STEM fields.



Virtual Career Fair

shows students what their future could be in a STEM career.

Abiotic: Learn

Define

Word Parts: abiotic starts with the prefix *a-* and has the root *bio*.

- *a-* sometimes means not.
- *bio* means life.

Definition: nonliving parts of an ecosystem

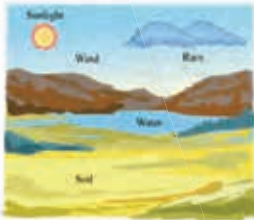
Sentence: Plants are affected by abiotic factors like sunlight.

☰ Selección para expandir o colapsar.

▼ Español

abiótico

Definición: todo factor inanimado en el ambiente de un organismo, como el suelo, el agua, la temperatura del agua y la disponibilidad de luz.



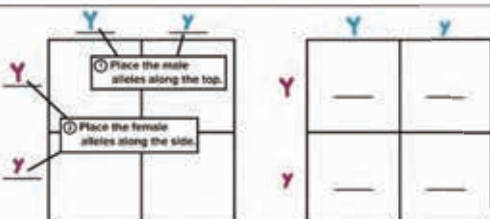

Word Labs allow students to study science vocabulary at their own pace using visuals and embedded word strategies.

Health and Survival of Organisms

A Punnett square is a model that is used to show the probability of the possible genotypes and phenotypes of the offspring from two parents' courtship.

How to Fill Out a Punnett Square

☰ Explore how to fill in a Punnett square.



To fill out a Punnett square, first place the male alleles at the top of each column in the square. Next, place the female alleles along each row on the side of the square. 'Y' represents the dominant allele and 'y' represents the recessive allele.



Interactive Visual Literacy features prepare students to identify visual representations of scientific phenomena.

Boundless Science Learning

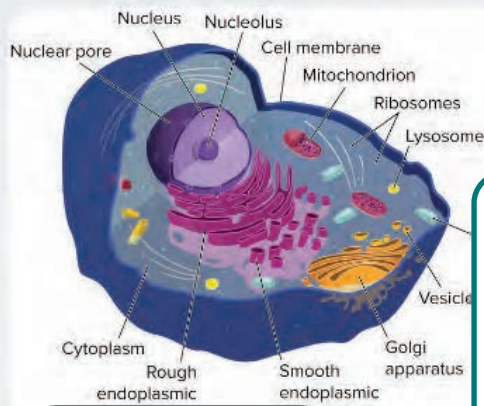
Kahoot! uses fun, game show-like quizzes to help students review important material in an engaging way.



Kahoot!

Apply It

Recall that animal cells are eukaryotic cells that contain membrane-bound organelles. Examine the diagram of the structures in an animal cell.



The **Student eBook** includes built-in comprehension questions and vocabulary definitions at the point of use. Text content is available at multiple reading levels, so students can adjust as needed.

ESSENTIAL QUESTION
How can the characteristics of transverse waves be compared?

Quick Launch

String Waves

Enter your answer.

Are all waves the same? Do they all follow one pattern? How would you make different waves? Follow your teacher's instructions and record your observations.

Now check out the video: Guitar Strings to see this phenomenon happening in the real world.

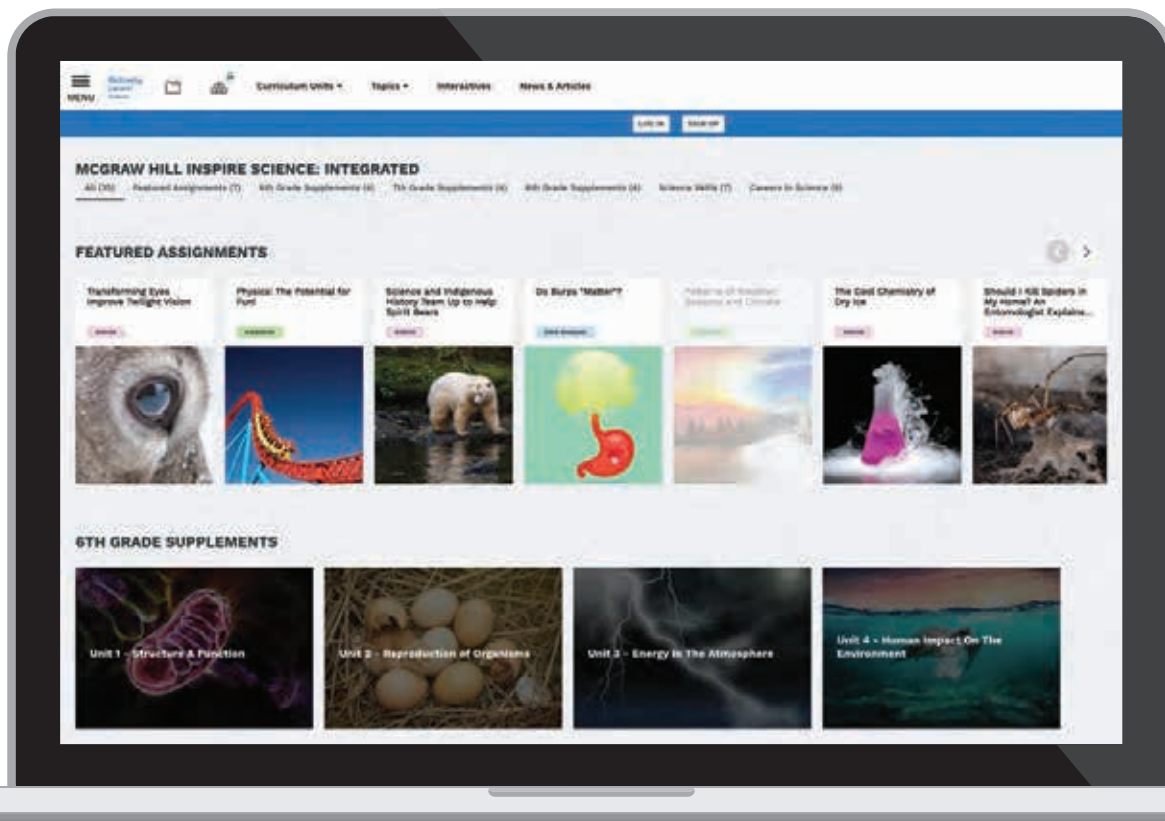


With the **McGraw Hill K-12 Portal App** students can access their content anywhere, any time, on any device, with or without internet access.

Actively Learn

As educators, we know how important it is to keep students engaged. That's why each *Florida Science* module and lesson is designed to tap into students' natural curiosity about the world around them through the investigation of real-world phenomena. Student engagement is further fueled through an innovative digital experience, and connections to real-world applications.

- **Engaging, relevant, standards-based content** for all learners
- **Science texts, articles, and videos** at each student's level
- **Inquiry-driven science simulations** that bring natural phenomena to life
- **Interactive reading and study aids** that promote active collaboration
- **Rich, cross-curricular connections** to literature and history
- **Powerful tools** that let teachers customize content or upload their own
- **Access to student data** to inform instructional decisions




Generate Next-Level Discovery: The Print Student Experience

When students model scientific phenomena, they learn to dissect and make meaning out of complex science ideas. As topics grow more complex throughout middle school, these powerful visuals become even more critical to the learning experience.

Recall What are some environments in which extremophiles might live?

Hot springs, salt lakes, seafloors near hydrothermal vents.



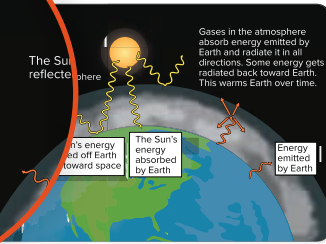
Protective Atmosphere
Earth's moon receives about the same amount of sunlight as Earth. Yet conditions on the surface of the Moon are more extreme than they are on Earth. The Moon's surface temperature can rise to 100°C during the day and drop to -150°C at night. Temperatures are extreme on the Moon because the Moon, unlike Earth, does not have an atmosphere.

Sustains Temperatures Earth's atmosphere is like a blanket around Earth. It absorbs sunlight during the day and keeps heat from escaping into space during the night. Greenhouse gases in the atmosphere trap heat from the Sun, maintaining Earth's average surface temperature at a habitable 15°C. The natural process that occurs when certain gases in the atmosphere absorb and reradiate thermal energy from the Sun is known as the greenhouse effect. Gases such as carbon dioxide and water vapor trap heat in a similar way to the way that a blanket keeps you warm when you are feeling chilly.

Some in the upper atmosphere are known as a runaway greenhouse effect, which is a runaway greenhouse effect in which the atmosphere is so absorbent that energy is radiated back to the surface of the planet. Venus

Infer How does Earth's atmosphere maintain the surface temperature?

The atmosphere traps the outgoing energy released from Earth's surface.



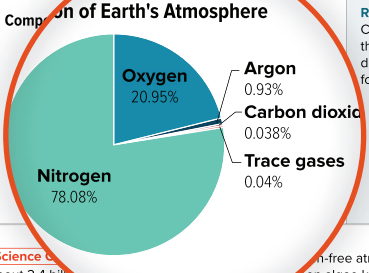
170 Chapter 4 Our Solar System

Radiation Absorption Have you ever spent the day outside playing soccer and come home with a painful sunburn? Sunburns are caused by the Sun's ultraviolet light. Even though you cannot see ultraviolet light, you can feel its effects. The ozone layer, made up of the greenhouse gas ozone (O₃), forms a protective layer around Earth that absorbs most of the Sun's ultraviolet radiation. The atmosphere also helps protect Earth from highly charged particles that erupt from the Sun, as well as X-rays and other potentially harmful energy from the Sun.

Relate Return to the beginning of the chapter and review the chapter question about solar system objects in the night sky. Read the paragraphs about *Protective Atmosphere* again. Underline text that connects to the chapter question.

Air We Breathe Earth's atmosphere is mostly made of nitrogen, but there are other gases that life depends on for survival. Much of life on Earth relies on oxygen and carbon dioxide. Plants release oxygen through photosynthesis, and we breathe it. Earth's atmosphere also helps protect Earth from escaping into space.

Composition of Earth's Atmosphere



Read the Graph Circle the element that humans depend on the most for survival.

Life Science Connection Earth's oxygen-rich atmosphere until about 2.4 billion years ago. Green algae known as cyanobacteria led to oxygen in the atmosphere. These cyanobacteria evolved to use photosynthesis, leading to their output of oxygen into the atmosphere.

Check out the video *A Warm Blanket* to explore how the atmosphere protects us and keeps us warm.

Now reflect on the ways the atmosphere allows life to exist on Earth. Record your responses in your Science Notebook.

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Enhanced Reading with Purposeful Visuals feature chunked text with “speed bump” questions, engaging visuals, and embedded data analysis opportunities, giving students multiple ways to make sense of each FSAS topic.

Enhanced Science Probe Visuals connect relatable science scenarios to Page Keeley's Formative Assessment Probes.

Protective Atmosphere
 Earth's moon receives about the same amount of sunlight as Earth. Yet conditions on the surface of the Moon are more extreme than they are on Earth. The Moon's surface temperature can rise to 100°C during the day. It can drop to -150°C at night. Temperatures are extreme on the Moon because the Moon, unlike Earth, does not have an atmosphere.

Sustains Temperatures Earth's atmosphere is like a blanket around Earth. It absorbs sunlight during the day. It traps the energy, preventing it from escaping into space during the night. Greenhouse gases in the atmosphere trap heat from the Sun. This maintains Earth's surface temperature at 15°C. The natural process by which certain gases in the atmosphere absorb and re-radiate energy from the Sun is known as the **greenhouse effect**. Gases such as carbon dioxide and water vapor trap heat. This is similar to the way that a blanket keeps you warm when you are feeling chilly. Some planets have what is known as a runaway greenhouse effect. This occurs when the atmosphere is so absorbent that energy is radiated back to space from the upper atmosphere and not the surface of the planet. Venus has a runaway greenhouse effect.

Tips provide support for students at point of use.

TIP The yellow arrows show the path of energy from the Sun. The orange arrows show the path of energy emitted by Earth.

4. Interpret the Diagram What happens to the Sun's energy when it reaches Earth? What happens to the energy that is absorbed by Earth?

4 Science Literacy Essentials Characteristics for Life

PAGE KEELEY SCIENCE PROBES

Life on Other Planets
 A group of friends heard scientists are looking for life on other planets. They wondered what scientists are looking for to find out if life exists beyond Earth. They texted each other their ideas.

Marco: They must be looking to see if there is an atmosphere.
 Leilani: They must be looking to see if the planet gets heat from a Sun.
 Shemal: I heard they are looking for water at the surface.
 Dorothy: If I were looking for life, I would look for a surface where things can grow.

Who do you think has the best idea? Explain your thinking. Record your answer in your Science Notebook.

Lesson 4.3 (FAS 7.9C) Characteristics for Life • ENGAGE 167

Science Literacy Essentials pair leveled text with enhanced visuals so students have multiple avenues to access grade-level information.

Read the Diagram Circle the area that receives the least amount of energy from the Sun. How does this explain why the Sun has a habitable zone?

Energy from the Sun is not equally spread out. It decreases with distance and increases the closer you are to the Sun,

Visual Assessment Items in Lesson Reviews, Chapter Wrap-Ups, and Florida Assessment Guides give students opportunities to make meaning from pictures and practice for the Florida state science assessment.

7. Observe the following diagram of the objects in the solar system.

Select the statement that is correct.

- A The Oort Cloud is located beyond the Kuiper Belt and extends up to 100,000 AU from the Sun.
- B The Kuiper Belt is donut-shaped and is located next to Jupiter.
- C The asteroid belt is located between Uranus and Neptune.
- D The planets in our solar system include Earth, Mars, Jupiter, Saturn, Uranus, and the Sun.

Vocabulary Expertise

Strengthening Science Vocabulary and Communication with Dr. Julie Jackson's Word Walls



From renowned author and educator Dr. Julie Jackson, Interactive Word Walls bring science vocabulary to life so that students can build meaningful relationships to FSAS concepts rather than simply memorize them.

Dr. Jackson's Florida Science innovations include:

- **Science language information** in every chapter that highlights target vocabulary, including:
 - Prior-knowledge words
 - Lesson words
 - Academic vocabulary support
 - Nature of Science language
- **Pre-made Interactive Word Wall Guides** and Word Cards in English and Spanish with images.
- **Professional development videos** to help teachers practice powerful instructional strategies.

Innovative Word Labs

allow students to study science vocabulary at their own pace using visuals and embedded word strategies.

Abiotic: Learn

Define

Word Parts: abiotic starts with the prefix *a-* and has the root *bio*.

- *a-* sometimes means not.
- *bio* means life.

Definition: nonliving parts of an ecosystem

Sentence: Plants are affected by *abiotic* factors like sunlight.

🔊 **Selección para expandir o colapsar.**

▼ **Español**

abiótico

Definición: todo factor inanimado en el ambiente de un organismo, como el suelo, el agua, la temperatura del agua y la disponibilidad de luz.



Julie Jackson's Professional Development Videos help teachers and supervisors implement this research-tested strategy.

Interactive Word Wall

Science Language and Content Acquisition

Provide students rich and varied experiences with science vocabulary as a way to bolster confidence and help students develop scientific language.

Chapter Vocabulary

Use the Interactive Word Wall to help students gain an understanding of the target vocabulary within the context of the entire FSAS. Build this together as a class on the wall and have students follow along with their own graphic organizers in their Science Notebooks. There are suggestions and support available for each lesson's Interactive Word Wall.

Interactive Word Wall

Check out Julie's professional development videos.

Interactive Word Walls support robust science instruction that benefits all students.

—Julie Jackson



Prior Knowledge Terms		Lesson Vocabulary		Supporting Vocabulary
Lesson 1 SC.7.E.6.5 SC.7.E.6.7				
weathering	landform	continental drift	mid-ocean ridge	glacial striations
deposition	earthquake	fossil	magnetic reversal	
	volcano	superposition	asthenosphere	
	fossil	plate tectonics	lithosphere	
		seafloor spreading		
SC.7.E.6.5 SC.7.E.6.7				
	mountains	divergent plate boundary	subduction	convection
	mantle	ocean basin	hot spot	
	crust	convergent plate boundary	supervolcano	
		volcano	transform plate boundary	
			earthquake	

Target Vocabulary combines new words with familiar ones to determine essential vocabulary.

Text Complexity To learn more about the text complexity of this chapter and the strategies for student reading, visit [Florida Literacy Standards](#) online for text complexity resources including Science Literacy Essentials.

Vocabulary Resources

Use the following tools for individual or small group work to provide repeated exposure to content vocabulary.

Interactive Word Wall

Go Online for more Interactive Word Wall graphic organizers and vocabulary resources. Use these resources for individual or small group work to provide repeated exposure to content vocabulary.

Word Lab Assign the Word Lab for interactive practice with content vocabulary terms. It provides visuals, definitions, and examples for vocabulary words, as well as activities involving word origins, affixes, multiple-meaning words, and words in context.



Science Literacy Essentials For reading support, including additional vocabulary support, practice, and assessments, assign students the Science Literacy Essentials for the entire chapter or specific lessons.

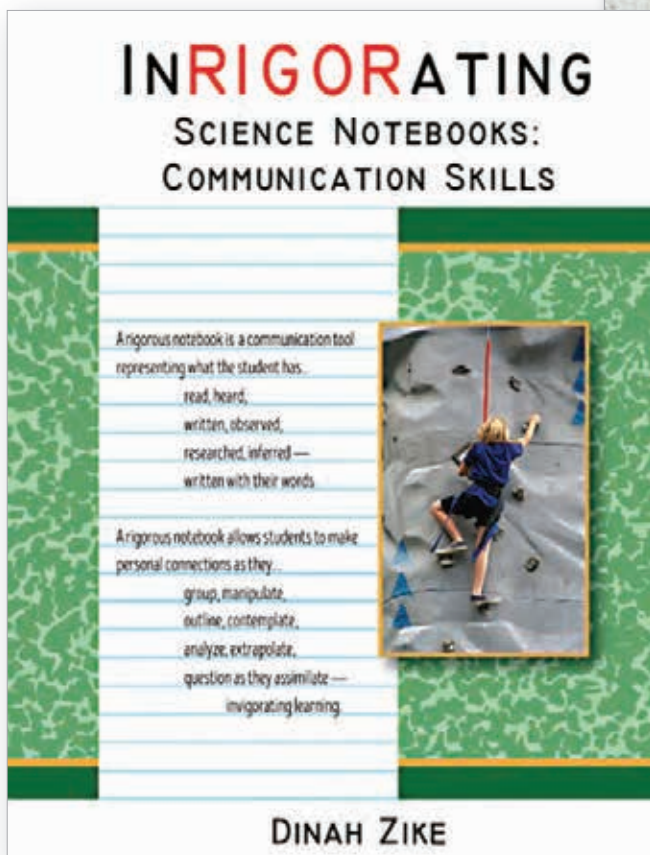


Notebooking Expertise

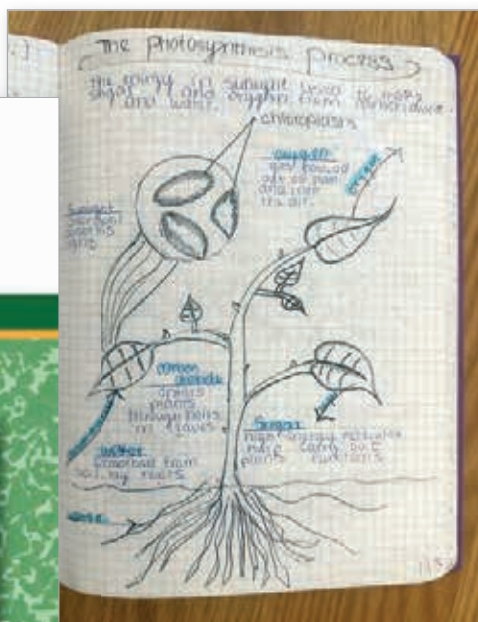
Documenting Discoveries with Dinah Zike's Notebooking Strategies



Carefully designed, intuitive notebook activities created by award-winning author, educator, and inventor Dinah Zike allow students to join generations of researchers documenting their findings—all while improving writing skills, deepening scientific understanding, and preparing for success on standardized tests.



Dinah's new book, *InRIGORating Science Notebooking*



ESSENTIAL QUESTION

What variables are used to describe weather?

Notebooking Have students record the Essential Question in their Science Notebooks. Suggest they add a tab for easy reference back to this question. Use these sentence stems to facilitate a discussion about how the Quick Launch relates to the Essential Question.

Horace Benedict de Saussure was able to use what he observed to invent a tool by _____.

Another way that our bodies might tell us about the weather is _____.

Other weather measurement tools that came from personal discoveries are _____.

One question I have is _____.

Make note of any misconceptions and plan to address them _____.

Sentence Stems and Frames help teachers scaffold all students' writing abilities.

Create Your FOLDABLES®
 Make a horizontal two-tab book and label the tabs as illustrated. Use it to collect information on clouds and fog. Find similarities and differences.

Foldables

Formative Assessment Expertise



One of the most effective ways to support conceptual learning is through formative assessment. That's why *McGraw Hill Florida Science* begins every lesson with a Page Keeley Science Probe and productive discussion strategy. Each probe uses real-world phenomena to promote student thinking and discussion, revealing the preconceptions and initial ideas students bring to their learning so you can best inform your instruction.

Stormy Day

Jose posted a picture of the weather occurring at the beach in Miami, Florida. His friends each had different ideas on what was causing the weather.

Jose
Miami, FL

Check out this dark sky. I thought I was going to have to run back to my car. There were wind gusts, thunderstorms, and the temperature dropped just before the storm hit. What do you think caused this weather?

65 Likes

Julia Wow — did you get very wet? I think a colder air mass moved toward the warmer air mass.

Gabe It was almost 85 degrees today so I think a warmer air mass moved toward the colder air mass.

Who do you think has the best idea? Explain your thinking. Record your answer in your Science Notebook.

Lesson 2 Weather Patterns • ENGAGE 99

It will never happen here!

Three friends argued about who is at risk from hurricanes. This is what they said:

Jan: Only coastal regions are at risk from hurricanes.

Molly: Regions located away from coastal areas can experience damage from hurricanes.

Which person do you agree with the most? Explain your answer in your Science Notebook.

Lesson 4

What affects climate?

Lisa: Another hot and humid day. Why does Florida get so hot in the summer?

Abe: I think Florida is hot because it's closer to the equator.

Nicolas: Florida gets more hours of sun than other states. That is why it is hotter.

Lisa: I thought the hotter weather was due to the air currents.

Who do you think has the best idea? Explain your thinking. Record your answer in your Science Notebook.

Lesson 4 Climate of Earth • ENGAGE 127

Science Literacy Expertise

A renowned reading expert, Dr. Doug Fisher helped create our new and improved Science Literacy Essentials to foster reading comprehension.

Dr. Doug Fisher, Ph.D.



Florida Science empowers all students to succeed in science—no matter their starting point. The new Science Literacy Essentials provide reading and writing support for students in need of a little extra help, including:

- **Content written two Lexile levels lower** than the on-level content
- **Teacher tips** to provide ample student support
- **Writing space** for students to practice explaining their understanding
- **Print, digital, and Spanish-language versions** of the text

Tips provide support for students at point of use.

Science Literacy Essentials are also available in Spanish!

PROGRAM FEATURE!

The screenshot shows a page from the Science Literacy Essentials with several annotations:

- Apply It** section: A box with a question about Mendel's experiments and a writing space.
- Need help answering this question?** section: A box with a tip to reread paragraphs in the Dominant and Recessive Traits section.
- Determining Inheritance** section: A text block about Mendel's work and chromosomes, followed by a writing space.
- 8. Identify** section: A question about genetic material and a writing space.
- Academic Vocabulary** callout: A box defining 'conclude (verb)'.
- TIP** callout: A box reminding students to remember that a parent plant has one or two dominant factors.
- Diagram**: A diagram showing 'Chromosomes in nucleus', 'Chromosome', and 'Gene'.
- History Connection** callout: A box about Rosalind Franklin and Maurice Wilkins.
- Genes and Alleles** section: A text block about genes and alleles, followed by a writing space.
- 9. Write About It** section: A question about the relationship between chromosomes and genes, followed by a writing space.
- TIP** callout: A box noting that lines to the chromosome show it's one of many chromosomes in the nucleus.

Science Literacy Essentials include visual supports to enhance learning for all types of learners.

Write About It gives students opportunities to show their understanding through the rigor of writing.

Foster Multilingual Connections

Every student deserves access to a rich, robust, and challenging science curriculum leveled to their needs and abilities. *Florida Science* applies the best pedagogical practices for teaching emergent bilinguals, complete with authentically translated print.

Activate Prior Knowledge

prepares all emergent bilingual students with content-specific strategies.

Spanish Language Transfer

gives teachers information to better support emergent bilingual students.

ELL English Language Learner Supports

Help students activate their prior knowledge about the vocabulary in this chapter and introduce them to new terms using the following activity.

Activate Prior Knowledge Provide students with the prior knowledge terms and key content terms written on individual notecards, differentiating the activity as needed.

Entering/Emerging	Developing/Expanding	Bridging/Reaching
Have students scan the chapter and write the words they know in K-W-L charts, writing definitions in their home language. Then tell them to add the words and definitions they want and need to know as they learn them throughout the chapter.	Have students scan the chapter and write the words they know in K-W-L charts. Then tell them to add the words and definitions they want and need to know as they learn them throughout the chapter.	Have students scan the chapter and write the words they know in K-W-L charts. Then have them add the words they want/need to know and add what they learn as they learn it.

Transferable Skills	Non-Transferable Skills
Many questions in English begin with the question words <i>who, what, when, where, why, how</i> . Similarly, questions in Spanish often begin with the question words <i>quién, qué, cuándo, dónde, por qué, cómo</i> .	There are many words in English that begin with <i>s</i> -clusters (<i>species, stimulus, Spanish</i>). Spanish cognates of these words tend to place the vowel <i>e</i> before a similar <i>s</i> -cluster sound (<i>especies, estímulo, español</i>).
Cognates	False Cognates
For students whose first language shares cognates with English, have them use the knowledge of their first language to learn English. Examples of English/Spanish cognates in this chapter: biology / biología species / especies meter / metro density / densidad precision / precisión graph / gráfica	Point out false cognates to help students avoid errors. English: actually (sp. realmente) Spanish: actualmente (en. currently, presently) English: rate (sp. tasa) Spanish: reto (en. challenge)

Reading Comprehension and Multilingual Support

Florida Science supports reading comprehension and English learners using a variety of innovative tools and scaffolds:

- Both the core text and Science Literacy Essentials are **available in Spanish** online in a printable format.
- Google Translate** is available for students where needed.
- The **Multilingual Glossary** offers key vocabulary definitions in over 10 different languages.

Spanish Interactive Word Wall



Google Translate

Assess and Address Learning Needs

Chart the path to FSAS mastery with a suite of easy-access tools aimed at gauging student understanding, identifying learning gaps, and targeting misconceptions throughout each lesson and chapter. Formal exam practice, personalized and adaptive study tools, and a curated selection of learning assets ensure Florida state science assessment success and deep comprehension for all students.

Formative Assessment Tools

- **Chapter pre-tests** are available online to kick off lessons by evaluating current students' understanding.
- **FSAS Refresh** allows teachers to assign students LearnSmart problems to help close foundational knowledge gaps.
- **Page Keeley Formative Assessment Science Probes** help illuminate students' preconceptions about a topic and provide a measure of growth at the end of each lesson.
- Throughout the Student Edition, **Apply It Activities** provide guidance to help you track student comprehension.
- **Kahoot!** uses fun, game show-like quizzes to help students review important material in an engaging way.

LearnSmart gives students a chance to take learning into their own hands while granting teachers insight into students' knowledge and abilities.

Summative Assessment Tools

- **Exit Tickets** quiz students at the end of every lesson to assess understanding—available in print and digital formats.
- **The Florida Assessment Guide** provides Florida state science assessment-aligned questions to prepare students for the Grade 6-8 state science test.
- **Chapter tests** are available for assignment online, as are chapter review assignments to help students prepare.
- **STEM Projects** allow students to demonstrate their understanding through creative, hands-on applications of the material.
- **Lesson Quizzes** in the student edition and online help teachers assess students' knowledge and skills from the lesson.



Apply It

Continental Climate

- Warm summers, cold winters
- Moderate precipitation

Polar Climate

- Cold year-round
- Minimal Precipitation

Dry Climate

- Hot summers, cooler winters
- Very low precipitation

Tropical climates

- Tropical wet
- Tropical wet and dry

Mild climates

- Mediterranean
- Humid subtropical
- Marine west coast

Dry climates

- Semiarid
- Arid

Continental climates

- Warm summer
- Cool summer
- Subarctic

Polar climates

- Tundra
- Ice cap
- Highland

Tropical Climate

- Warm year-round
- High Precipitation

Mild Climate

- Warm summers, mild winters
- High precipitation
- Humid

Read the Map Locate Florida on the map. What climate does Florida have based on the descriptions shown?

FLORIDA Science

UNLIMITED POTENTIAL



Scan to try the digital
sampling experience, or visit:
mheonline.com/FLScience