NATIONAL GEOGRAPHIC

Science

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CORE
K–5

Start the Experience

NATIONAL GEOGRAPHIC

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A rare Suwannee cooter swims through clear Florida waters.

Promote science success as you share

The National Geographic Experience

- Immerse Students in the Nature of Science and Inquiry
- Unlock the Big Ideas in Science for All Learners
- Build Scientific and Content Literacy
- Address STEM Inquiry

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Built for Florida Classrooms

Modular Life, Earth, and Physical Science units at the primary grades allow you to engage K–2 students in a wealth of active discovery and shared exploration through the use of Big Books and student books. The program then grows with your students by transitioning to hardbound, grade-level Student Books at grades 3–5. At every grade, our award winning technology gives students and teachers online access to the books and digital program resources.

Modular unit-based Classroom Sets at Grades K–2

Big Ideas Student Books incorporating Life, Earth, and Physical Science at Grades 3–5

Complete and Flexible

Integrated Print and Technology with Hands-On Inquiry

Program Authors

Randy Bell, Ph.D.
Associate Professor of Science Education, Oregon State University

Malcolm Butler, Ph.D.
Associate Professor of Science Education, University of Central Florida

Kathy Cabe Trundle, Ph.D
STEM Education Department Head and Professor, North Carolina State University

Nell Duke, Ed.D.
Co-Director of the Literacy Achievement Research Center, Professor of Teacher Education and Educational Psychology, Michigan State University

Judith Lederman, Ph.D.
Director of Teacher Education, Illinois Institute of Technology

David W. Moore, Ph.D.
Professor of Education, Arizona State University

Take Students Beyond the Classroom

Students join leading National Geographic Explorers and scientists in the field via special video segments launching each unit and at many other points throughout the program. These valuable interactions provide students with real-life models of how scientists conduct studies and gain scientific knowledge, and provide an excellent opportunity to address STEM topics in the classroom.

Constance Adams
National Geographic Emerging Explorer, Space Architect

Stephon Alexander, Ph.D.
National Geographic Emerging Explorer, Theoretical Physicist

Thomas Taha Rassam Culhane
National Geographic Emerging Explorer, Urban Planner

Luke Dollar, Ph.D
National Geographic Emerging Explorer, Conservation Scientist

Marianne Dyson
Science Writer and Former NASA Flight Controller,

Maria Fadiman, Ph.D.
National Geographic Emerging Explorer, Ethnobotanist

Beverly Goodman, Ph.D.
National Geographic Emerging Explorer Geo-Archaeologist

Madhulika Guhathakurta, Ph.D
NASA Astrophysicist

Albert Yu-Min Lin, Ph.D.
National Geographic Grantee Archaeologist

Greg Marshall
National Geographic Filmaker, Marine Biologist, Conservationist, Inventor

Mireya Mayor, Ph.D.
National Geographic Emerging Explorer Primatologist, Conservationist

Ainissa Ramirez, Ph.D.
Physicist

Tim Samaras
National Geographic Emerging Explorer Severe-Storms Researcher

Tierney Thys, Ph.D.
National Geographic Emerging Explorer Marine Biologist, Filmaker

Katey Walter, Ph.D.
National Geographic Emerging Explorer Aquatic Ecologist, Biogeochemist

Connections to Real Scientists!

NATIONAL GEOGRAPHIC Science

Integrated Technology

For Students

The Student Home Page provides easy access to an array of technology tools designed to support and enhance the student's learning.

Student eEditions

- **Big Ideas, Student Inquiry Books, Become an Expert, Explore On Your Own,** and **Science in Action** books available online
- Highlighting, note-taking and search tools built-in, along with Read-to-Me audio support.

National Geographic Digital Library

- Access to videos, images and simulations
- Easy-to-use search and topic-specific media packages.

Vocabulary Games

- Highly-interactive student games with rewards to teach vocabulary from units at K–2 and chapters at 3–5.

Enrichment Activities

- Interactive resources to expand science concepts presented in the units.

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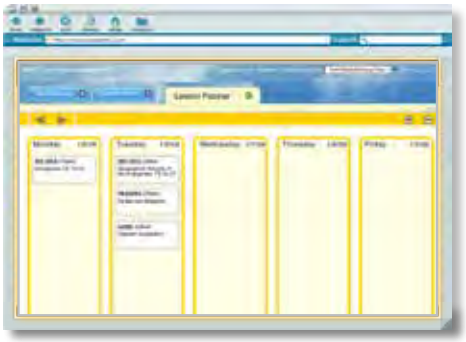
For Teachers

The Teacher Home Page provides the ability to easily find and manage program technology resources and provides online access to the full array of student and teacher materials, including eAssessment.



Online Lesson Planner

- Tailor instruction to the amount of time you have each day
- View and monitor Next Generation Sunshine State Standards coverage
- Plan group and independent work
- Print plans at-a-glance or in detail.

Online Professional Development

- Resources to enhance lesson delivery and encourage best practices.

Teacher eEdition

- Online edition with embedded links to Unit Launch Videos, Assessment Handbook, and Learning Masters.

Classroom Presentation Tool

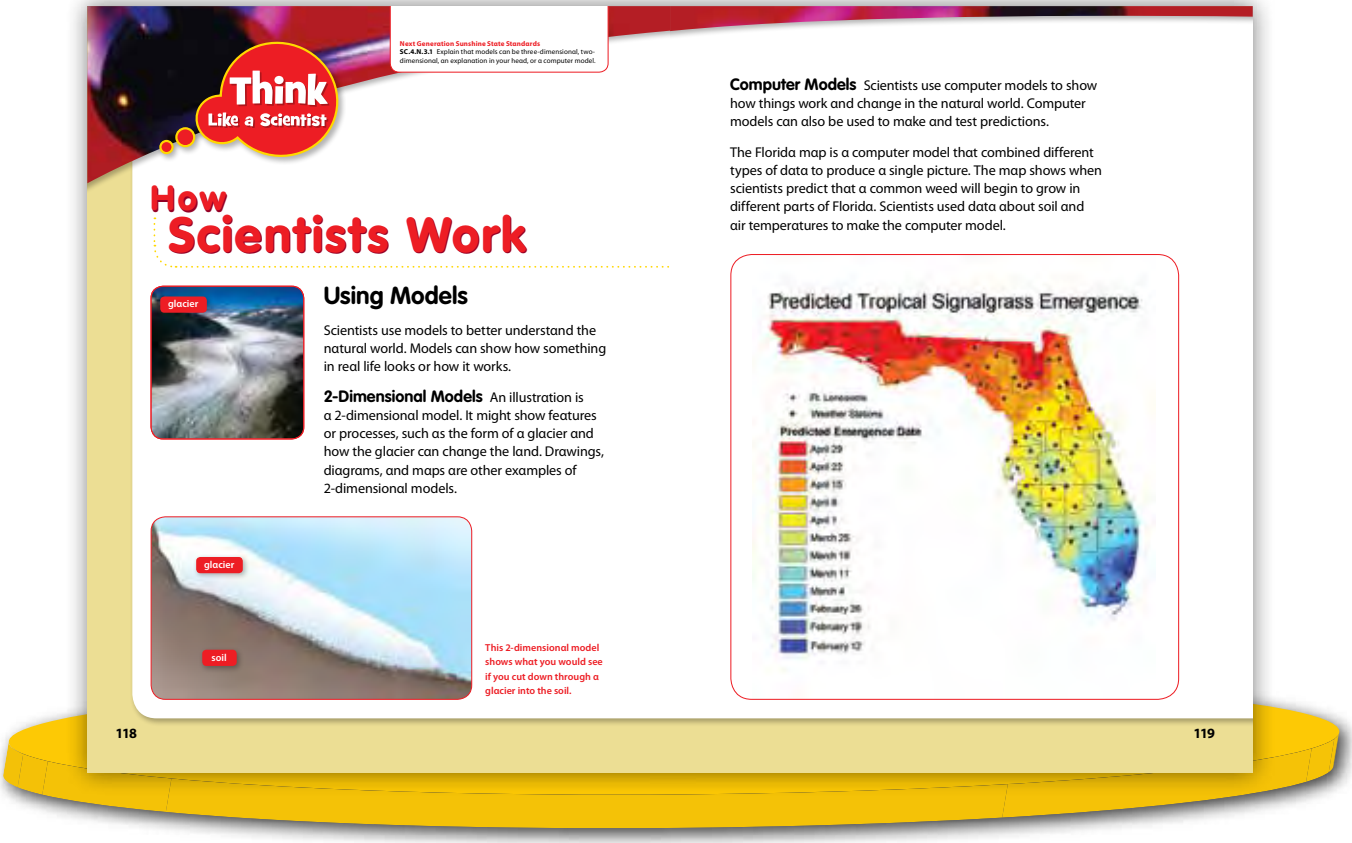
- Allows teachers to project all print materials and visuals for a lesson.

Revealing the Nature of Science

In ***National Geographic Science Florida,*** process skills build at each grade level to ensure a complete understanding of the Nature of Science. Throughout the program, process skills and the Nature of Science work together to help students think and act like scientists.

PROCESS SKILLS	Kindergarten OBSERVE	Grades 1 & 2 OBSERVE & INFER
Nature of Science	• Science knowledge is based on evidence. • Science knowledge can change based on new evidence.	• Science conclusions are based on observation and inference. • Science theories are based partly on things that cannot be observed.

Grade 3 CLASSIFY	Grade 4 PREDICT/HYPOTHESIZE	Grade 5 DESIGN EXPERIMENTS
• There is often no single "right" answer in science.	• Scientific theories provide the base upon which predictions and hypotheses are built.	• There is no single, scientific method that all scientists follow. • There are a number of ways to do science.



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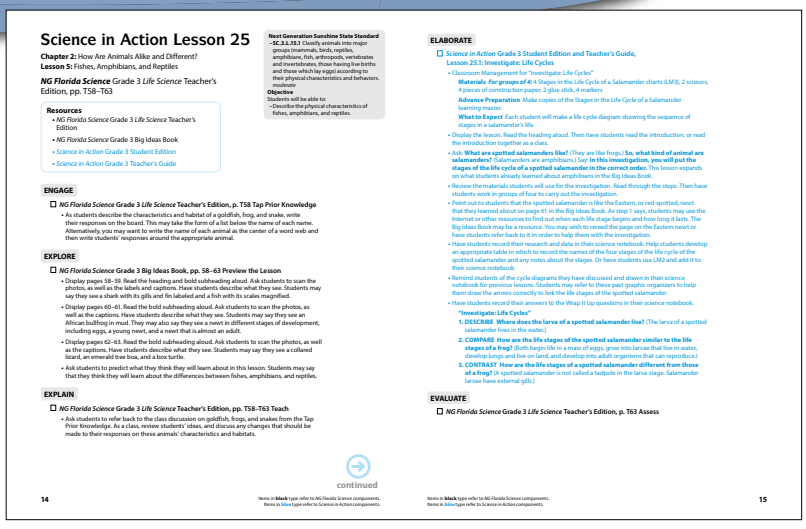
Increase Hands-on STEM with *Science in Action*

National Geographic images, combined with hands-on activities, increase student understanding of the Next Generation Sunshine State Standards. *Science in a Snap* and *Investigate* sections offer opportunities for hands-experiences to reinforce science concepts and increase STEM engagement. National Geographic Explorers are featured as models for students in how to solve real-world problems using science and engineering methods and processes.

Science in Action Student eBook



Science in Action Lesson 25

Chapter 2: How Are Animals Alike and Different?
Lesson 5: Fishes, Amphibians, and Reptiles

NG Florida Science Grade 3 *Life Science* Teacher's Edition, pp. T58–T63

Resources
- *NG Florida Science* Grade 3 *Life Science* Teacher's Edition
- *NG Florida Science* Grade 3 Big Ideas Book
- *Science in Action* Grade 3 Student Edition
- *Science in Action* Grade 3 Teacher's Guide

Next Generation Sunshine State Standard
- **SC.3.L.15.1** Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors. *moderate*

Objective
Students will be able to:
- Describe the physical characteristics of fishes, amphibians, and reptiles.

ENGAGE
☐ ***NG Florida Science*** **Grade 3** ***Life Science*** **Teacher's Edition, p. T58 Tap Prior Knowledge**
- As students describe the characteristics and habitat of a goldfish, frog, and snake, write their responses on the board. This may take the form of a list below the name of each name. Alternatively, you may want to write the name of each animal as the center of a word web and then write students' responses around the appropriate animal.

EXPLORE
☐ ***NG Florida Science*** **Grade 3 Big Ideas Book, pp. 58–63 Preview the Lesson**
- Display pages 58–59. Read the heading and bold subheading aloud. Ask students to scan the photos, as well as the labels and captions. Have students describe what they see. Students may say they see a shark with its gills and fin labeled and a fish with its scales magnified.
- Display pages 60–61. Read the bold subheading aloud. Ask students to scan the photos, as well as the captions. Have students describe what they see. Students may say they see an African bullfrog in mud. They may also say they see a newt in different stages of development, including eggs, a young newt, and a newt that is almost an adult.
- Display pages 62–63. Read the bold subheading aloud. Ask students to scan the photos, as well as the captions. Have students describe what they see. Students may say they see a collared lizard, an emerald tree boa, and a box turtle.
- Ask students to predict what they think they will learn about in this lesson. Students may say that they think they will learn about the differences between fishes, amphibians, and reptiles.

EXPLAIN
☐ ***NG Florida Science*** **Grade 3** ***Life Science*** **Teacher's Edition, pp. T58–T63 Teach**
- Ask students to refer back to the class discussion on goldfish, frogs, and snakes from the Tap Prior Knowledge. As a class, review students' ideas, and discuss any changes that should be made to their responses on these animals' characteristics and habitats.

continued

Items in **black** type refer to *NG Florida Science* components.
Items in blue type refer to *Science in Action* components.

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ELABORATE
☐ *Science in Action* **Grade 3 Student Edition and Teacher's Guide, Lesson 25.1: Investigate: Life Cycles**
- Classroom Management for "Investigate: Life Cycles"
  Materials: For groups of 4: 4 Stages in the Life Cycle of a Salamander charts (LMS), 2 scissors, 4 pieces of construction paper, 2 glue stick, 4 markers
  Advance Preparation Make copies of the Stages in the Life Cycle of a Salamander learning master.
  What to Expect Each student will make a life cycle diagram showing the sequence of stages in a salamander's life.
- Display the lesson. Read the heading aloud. Then have students read the introduction, or read the introduction together as a class.
- Ask **What are spotted salamanders like?** (They are like frogs.) **So, what kind of animal are salamanders?** (Salamanders are amphibians.) Say: **In this investigation, you will put the stages of the life cycle of a spotted salamander in the correct order.** This lesson expands on what students already learned about amphibians in the Big Ideas Book.
- Review the materials students will use for the investigation. Read through the steps. Then have students work in groups of four to carry out the investigation.
- Point out to students that the spotted salamander is like the Eastern, or red-spotted, newt that they learned about on page 61 in the Big Ideas Book. As step 1 says, students may use the Internet or other resources to find out when each life stage begins and how long it lasts. The Big Ideas Book may be a resource. You may wish to reread the page on the Eastern newt or have students refer back to it in order to help them with the investigation.
- Have students record their research and data in their science notebook. Help students develop an appropriate table in which to record the names of the four stages of the life cycle of the spotted salamander and any notes about the stages. Or have students use LM2 and add it to their science notebook.
- Remind students of the cycle diagrams they have discussed and drawn in their science notebook for previous lessons. Students may refer to these past graphic organizers to help them draw the arrows correctly to link the life stages of the spotted salamander.
- Have students record their answers to the Wrap It Up questions in their science notebook.

  "Investigate: Life Cycles"
  1. **DESCRIBE Where does the larva of a spotted salamander live?** (The larva of a spotted salamander lives in the water.)
  2. **COMPARE How are the life stages of the spotted salamander similar to the life stages of a frog?** (Both begin life in a mass of eggs, grow into larvae that live in water, develop lungs and live on land, and develop into adult organisms that can reproduce.)
  3. **CONTRAST How are the life stages of a spotted salamander different from those of a frog?** (A spotted salamander is not called a tadpole in the larva stage. Salamander larvae have external gills.)

EVALUATE
☐ ***NG Florida Science*** **Grade 3** ***Life Science*** **Teacher's Edition, p. T63 Assess**

Items in **black** type refer to *NG Florida Science* components.
Items in blue type refer to *Science in Action* components.

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Science in Action Teacher's Guide

NATIONAL GEOGRAPHIC Science

Address STEM Through Leveled, Hands-On Inquiry

National Geographic Science Florida provides students with abundant and relevant hands-on explorations to facilitate a thorough understanding of key science concepts. The four levels of inquiry in the program are designed to help students build confidence and competence in scientific thought and inquiry.

Explore Activity

The *Explore Activity* builds background for the unit and activity **engages** students as they **explore.**

Directed Inquiry

In *Directed Inquiry*, the teacher gives direct instruction throughout the activity. Students are given opportunities to **explain** what they have done, **elaborate** by asking further questions, and **evaluate** by answering questions and using a self-reflection rubric.

Immerse Students in the Nature of Science and Inquiry

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Additional hands-on STEM investigations available online in the *Science in Action* eBook.

Florida Science Inquiry Kits provide all the materials required to complete inquiry activities.

Guided Inquiry

In *Guided Inquiry*, students become independent learners with guidance from the teacher. Students manipulate variables, provide **explanations**, **elaborate** by asking further questions, and **evaluate** by answering questions and using a self-reflection rubric.

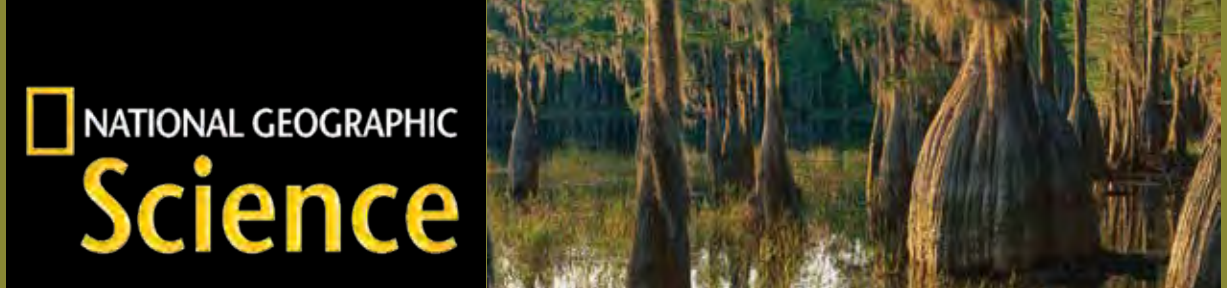
Open Inquiry

In *Open Inquiry*, students choose their own questions, create and carry out their own plans, collect and record their own data, look for patterns, and share that data. Students **explain** their results, **elaborate** by asking further questions, and **evaluate** by answering questions and using a self-reflection rubric.

Also Included:

Science in a Snap!

offers quick investigations to activate understanding of science concepts.



Exploring Florida Standards In Depth

At every level, ***National Geographic Science Florida*** is targeted and focused on the Big Ideas in Science, inviting students to question, engage, actively explore, and understand the Next Generation Sunshine State Standards.

At grades K–2, each unit is centered on three chapter **"Big Ideas"** that target instruction to the Next Generation Sunshine State Standards.

Moving through the unit, students delve deeper into understanding the chapter **Big Ideas** through collaborative and independent work.

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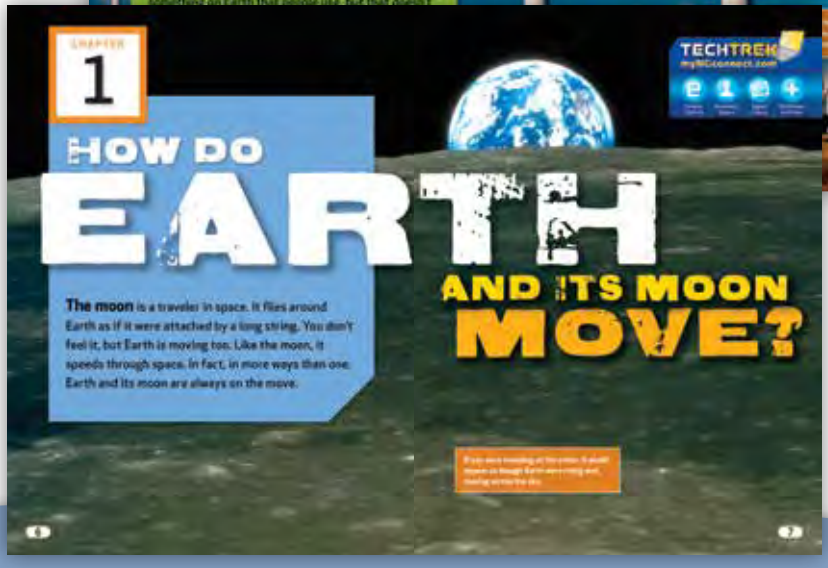
TECHTREK

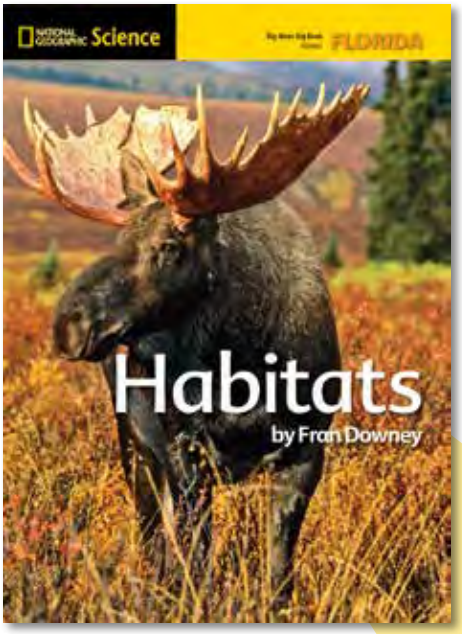
eEdition

At grades 3–5, each chapter presents a **"Big Idea"** that focuses instruction on the Next Generation Sunshine State Standards.

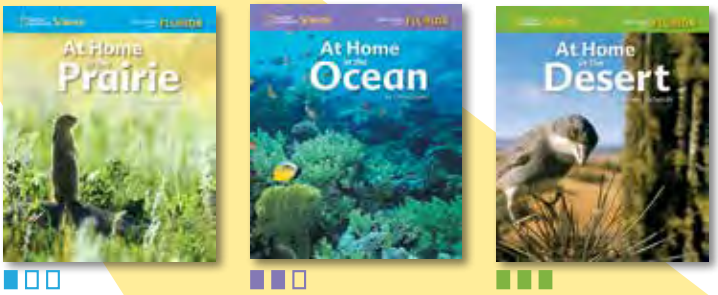


Providing Access to Content

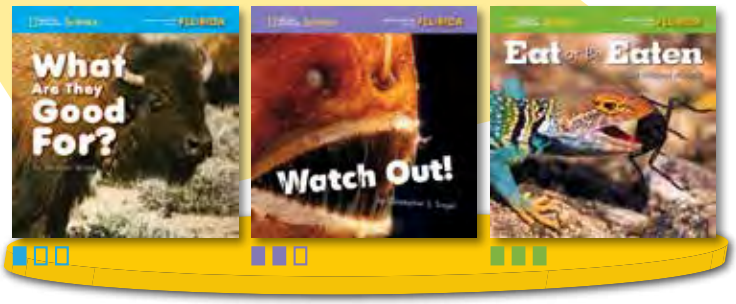
National Geographic Science Florida is designed to engage all learners in exploring and understanding the Big Ideas of Science. Focused instruction with built-in support helps you reach students of varying ability levels.



Become An Expert books for grades K–2 tie directly to the unit's Big Ideas and are presented at three reading levels, enabling teachers to effectively differentiate instruction.



Leveled **Explore On Your Own** books carry forward the topical exploration at grades K–2, offering the flexibility to either extend learning in Science, or to provide connected nonfiction reading in your Language Arts block.



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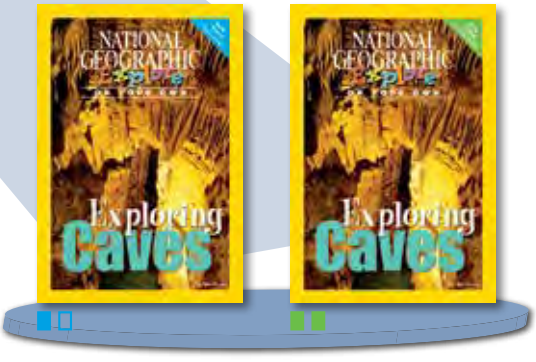
"I start each unit by having students generate their own questions about one of the many breathtaking images or video segments. It's a simple and effective way to hook the class and promote higher order questioning."

—Vanessa C., 4th Grade Teacher

Online Interactives

In the **Become An Expert** section of each chapter in grades 3–5, students apply what they've learned through concrete examples found throughout our world.



Pioneer and Pathfinder editions of the **Explore On Your Own** books for grade 3–5 provide the same content at two different reading levels, encouraging all students to read independently.

NATIONAL GEOGRAPHIC
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National Geographic Explorers:

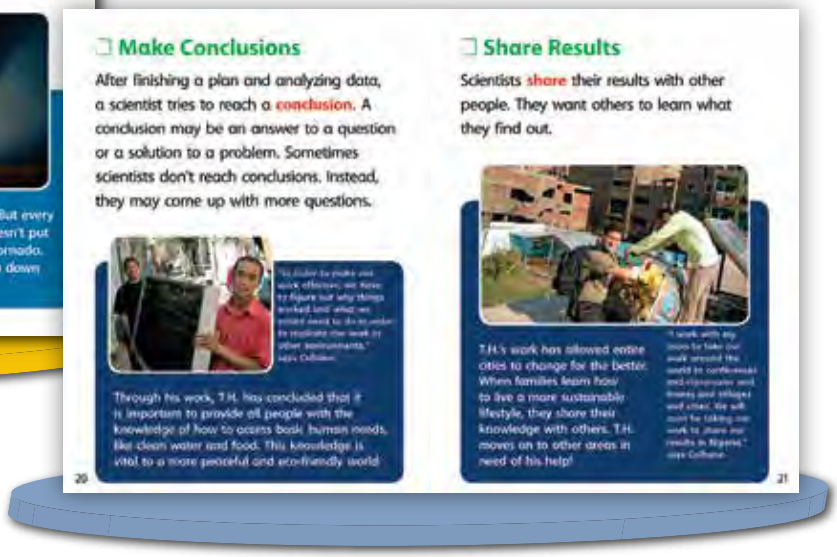
Instilling a Legacy of Scientific Literacy

Real-life models of National Geographic Explorers and scientists in the field help students to develop scientific literacy and better understand the Nature of Science.

Students learn that Science is:

- A way of knowing
- Empirically based and consistent with evidence
- Subject to change when new evidence presents itself
- A creative process

Explorer Videos



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Supporting Literacy Through Science

National Geographic Science Florida also builds literacy skills to help students succeed across content areas.

Reading Comprehension

Teacher Edition support at K–2 includes opportunities to work with four comprehension strategies to ensure content learning is deep and lasting.

- Preview and Predict
- Monitor and Fix Up
- Make Inferences
- Sum Up

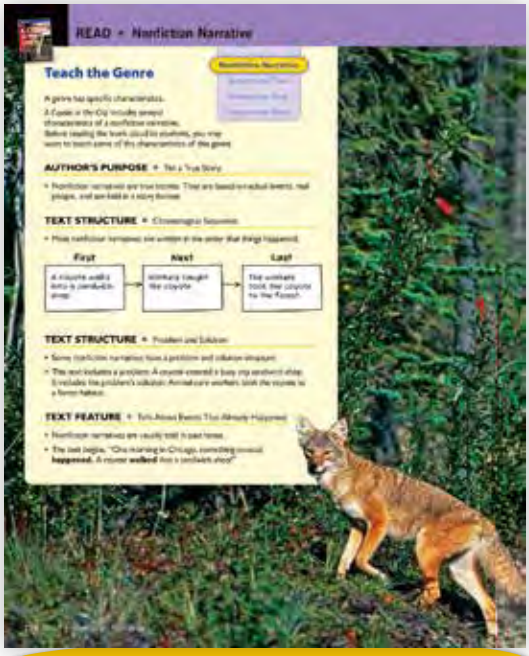
At Grades 3–5, these four strategies are used to reinforce content learning.

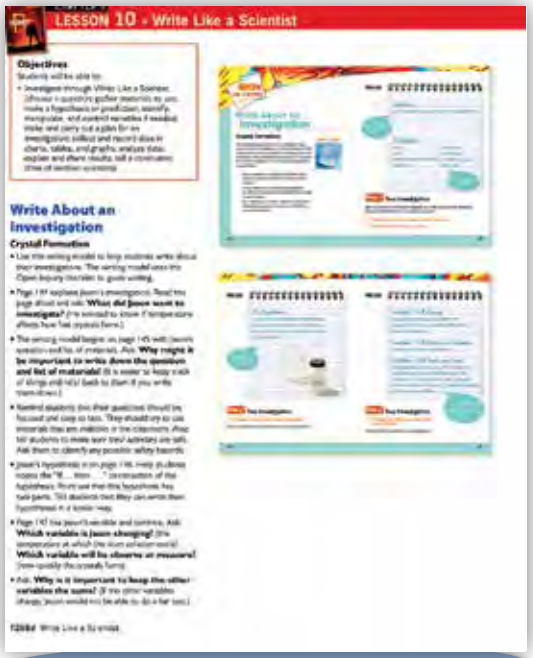
Expository Writing

Instruction at K–2 includes ample opportunity for students to express their understanding in four modes of scientific writing.

- Nonfiction Narrative
- Expository Nonfiction
- Procedural Text
- Persuasive Text

At Grades 3–5, students are given opportunities to write like a scientist by practicing procedural writing in the Science Inquiry and Writing Book.





NATIONAL GEOGRAPHIC Science

Assessment Design

National Geographic Science Florida assessments have been designed so frequent, varied assessment informs instruction every step of the way. Tests provide a window into student thinking about scientific concepts throughout the instructional cycle.

Grades K–2

- The Big Ideas in Science
- Scientific Inquiry
- Science Academic Vocabulary
- Content Literacy

Grades 3–5

- The Big Ideas in Science
- Scientific Inquiry
- Science Academic Vocabulary

Instruct

Develop student understanding and provide explicit and systematic instruction.

Monitor Progress

Gather timely information about student progress as you deliver instruction.

Show Success

For Kindergarten, use informal assessment activities found in the Teacher's Edition. In grades 1 and 2, **Chapter Tests** provide opportunities for students to apply their understanding of key concepts.

For Kindergarten, **Big Ideas Tests** measure understanding and demonstrate overall progress. In grades 1 and 2, the **Unit Test** measures a student's overall progress in understanding the unit's Big Ideas.

Chapter Tests provide opportunities for students to apply their understanding of key concepts.

Benchmark Tests measure understanding and demonstrate overall progress.

Florida State Test Prep supports students in learning test-taking strategies through guided test reviews of the Benchmark Tests and a Florida Statewide Science Assessment practice test.

Assessment Handbook	PDFs online	FLORIDA ASSESSMENT TOOLS	Assessment Handbook	PDFs online
■	■	Big Ideas Tests		
■	■	Chapter Tests	■	■
■	■	Unit/Chapter Self-Assessments	■	■
■	■	Benchmark Tests	■	■
■	■	Inquiry Rubrics	■	■
■	■	Inquiry Self-Reflections	■	■
		Florida State Test Prep		■

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Life, Earth and Physical Science Units

Kindergarten

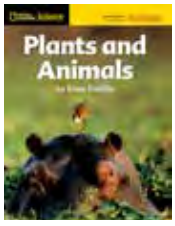
Life Science

Earth Science

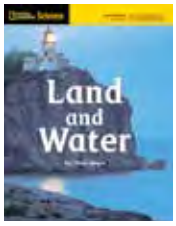
Physical Science

Grade 1

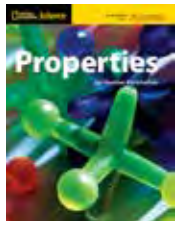
Life Science



Earth Science



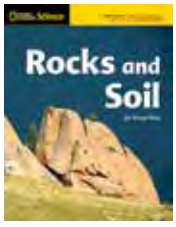
Physical Science



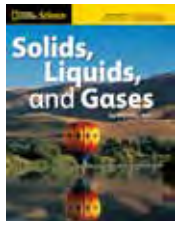
Grade 2

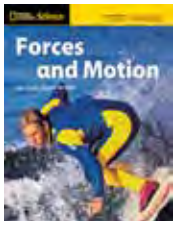
Life Science

Earth Science



Physical Science





Grades 3–5

Life Earth Physical

Grade 3

Life Earth Physical

Grade 4

Life Earth Physical

Grade 5

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Program Components

	K	1	2	3	4	5
STUDENT MATERIALS						
Florida Big Ideas Student Book		■	■	■	■	■
Florida Science Inquiry Book		■	■			
Florida Science Inquiry and Writing Book				■	■	■
Florida Become An Expert Books	■	■	■			
Florida Explore On Your Own Books	■	■	■			
Explore On Your Own (Pioneer and Pathfinder) Books				■	■	■
Student Website (including *Science in Action* eBook)	■	■	■	■	■	■
Florida Science Inquiry Kits	■	■	■	■	■	■
Science Inquiry Safety Kits	■	■	■	■	■	■
Science Inquiry Kit Consumables Refills	■	■	■	■	■	■
TEACHER MATERIALS						
Florida Teacher's Edition	■	■	■	■	■	■
Science in Action Teacher's Guide	■	■	■	■	■	■
Florida Big Ideas Big Book	■	■	■			
Florida Science Inquiry Big Book	■					
Florida Big Ideas & Vocabulary Cards	■	■	■			
Florida Write About Big Book	■	■	■			
Science Methods and Process Skills Big Book	■	■	■	■	■	■
Science Methods and Process Skills Teacher's Guide	■	■	■	■	■	■
Florida Learning Masters	■	■	■	■	■	■
Florida Assessment Handbook	■	■	■	■	■	■
Teacher Website (including *Science in Action* eBook)	■	■	■	■	■	■

Contact your local Florida Educational Sales Consultant

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(Alachua, Baker, Bay, Bradford, Calhoun, Clay, Columbia, Dixie, Duval, Escambia, Flagler, Franklin, Gadsden, Gilchrist, Gulf, Hamilton, Holmes, Jackson, Jefferson, Lafayette, Leon, Levy, Liberty, Madison, Marion, Nassau, Okaloosa, Putnam, Santa Rosa, St. Johns, Suwanee, Taylor, Union, Wakulla, Walton, Washington Counties)

Gwen Richards
(904) 477-3442
gwen.richards@cengage.com

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(Brevard, Citrus, Indian River, Lake, Martin, Okeechobee, Orange, Osceola, Seminole, St. Lucie, Sumter, Volusia Counties)

Eric Harrison
(404) 489-6802
eric.harrison@cengage.com

Central West

(Charlotte, Collier, DeSoto, Glades, Hardee, Hendry, Hernando, Highlands, Hillsborough, Lee, Manatee, Pasco, Pinellas, Polk, Sarasota Counties)

K–8 Trudy Johnson
(941) 322-9273
trudy.johnson@cengage.com

9–12 Andrea Neff
(727) 422-2287
andrea.neff@cengage.com

South K–12

(Broward, Miami-Dade, Monroe, Palm Beach Counties)

Michael Galfond
(954) 525-5209
michael.galfond@cengage.com

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ISBN-13: 978-13374-79844
ISBN-10: 13374-79845