Mc Graw Hill Education

mheducation.com/prek12Tennessee

TENNESSEE

Inspire Science

User-Friendly • Connected • Inspiring

Get Ready to Be Inspired!

Introducing the new modular K-5 science learning experience designed to prepare the next generation of innovators.

Program Overview

GRADES K-5


WHY IS THE SKY BLUE?
WHY IS THE EARTH ROUND?
WHY DOES THE SUN SHINE?

TENNESSEE

InspireScience

Get Ready to Be Inspired!

Learning begins with curiosity. *Tennessee Inspire Science* is designed to help you spark students' interest and empower them to ask more questions, think more critically, and maximize their ability to creatively solve problems. *Tennessee Inspire Science's* instructional model will prove that science education can be comprehensive and offer fun learning experiences that are sure to pique the interest of the bright minds in your classroom. Let us, help you cultivate curiosity and inspire the next generation of innovators, visionaries, and inventors.

USER-FRIENDLY

Embrace science through a simple, user-friendly teaching experience.

CONNECTED

Get more out of science time through built-in literacy and math connections.

INSPIRING

Prepare students for a future full of STEM opportunities.

Hi, my name is Chloe. I am one of the twenty-six ***Tennessee Inspire Science* STEM Career Kids** your students will meet in the *Inspire Science* lessons. We help kids imagine what they might become when they grow up.

CHLOE
Carpenter

A Flexible, Digital, Learning Experience with Print Where It Matters Most

Interactive Whiteboard and Mobile Friendly

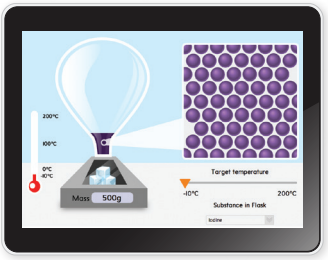
DIGITAL

DIGITAL TEACHER CENTER

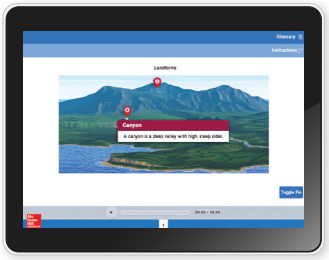
DIGITAL STUDENT CENTER

READY-TO-GO LESSON PRESENTATIONS

SIMULATIONS



INTERACTIVES



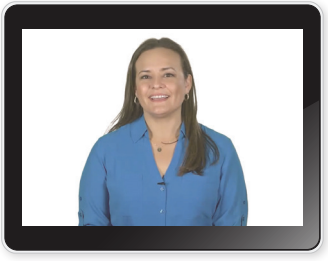
SCIENCE SONGS

GAMES

eASSESSMENT

VIDEOS

PROFESSIONAL DEVELOPMENT



DINAH ZIKE, M.ED. VIDEO LIBRARY

TENNESSEE INSPIRE SCIENCE INVESTIGATOR

Components Overview

DIGITAL AND PHYSICAL

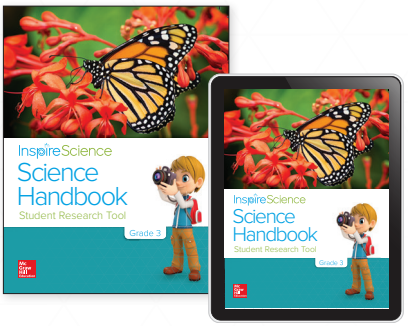
TEACHER'S EDITION
(Grades K-5)

BE A SCIENTIST NOTEBOOK
(Grades K–5)

LEVELED READERS
(Grades K–5) Available in Spanish

SCIENCE PAIRED READ ALOUDS
(Grades K–2) Available in Spanish

SCIENCE HANDBOOK
(Grades 3–5)



Digital versions of the student books include audio, dynamic search tools, text highlighting, and more.

PHYSICAL

LAB KITS
Tennessee Inspire Science lab kits contain hands-on activity materials clearly labeled and correlated to each module.

GRACE
Computer Programmer

User-Friendly Lesson Structure

Tennessee Inspire Science lessons are designed with the familiar and proven 5E instructional model. Each lesson also comes with an easy-to-follow process so you know exactly what comes next.

Each ***Tennessee Inspire Science*** lesson begins with a Page Keeley Formative Assessment Probe.

PAGE KEELEY, M.ED.

Disciplinary Core Ideas
PS3.A Definitions of Energy

Crosscutting Concepts
Energy and Matter

Science and Engineering Practices
Constructing Explanations and Designing Solutions

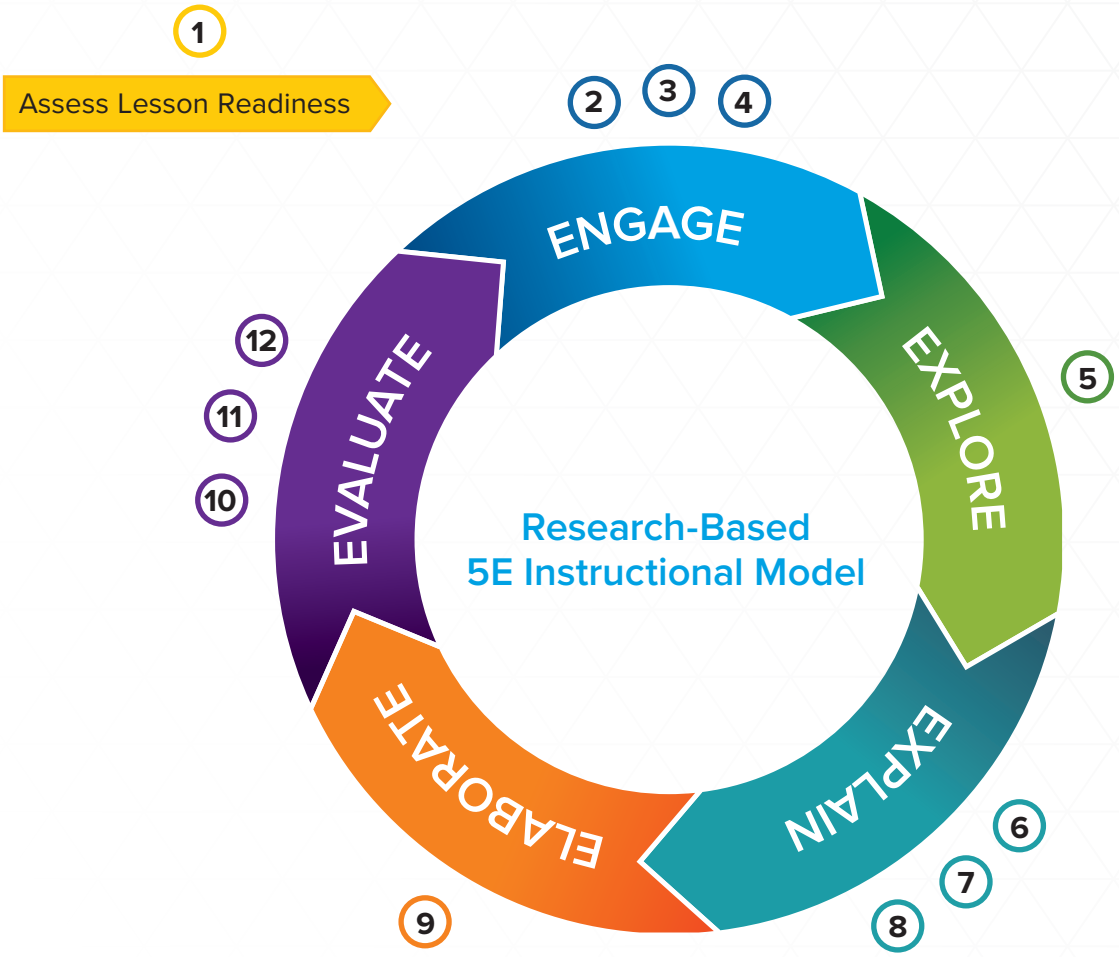
Key Steps to Lesson Success

Learning Progression

I Will

ASSESS LESSON READINESS	ENGAGE	EXPLORE
1 Page Keeley Science Probes	2 Science in Our World	5 Inquiry Activity
	3 Essential Question	
	4 Science and Engineering Practices	

User-Friendly



I Can

I Did

EXPLAIN

- 6 Obtain and Communicate Information
- 7 Reflect and Refine
- 8 Science and Engineering Practices

ELABORATE

- 9 Research, Investigate, and Communicate

EVALUATE

- 10 Performance Task
- 12 Essential Question
- 12 Science and Engineering Practices

Approximate Pacing

(based on 45-minute teaching blocks)

Module = 1 month of instruction

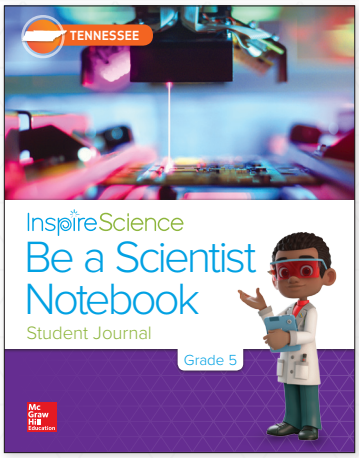
Lesson = 8-10 days of instruction

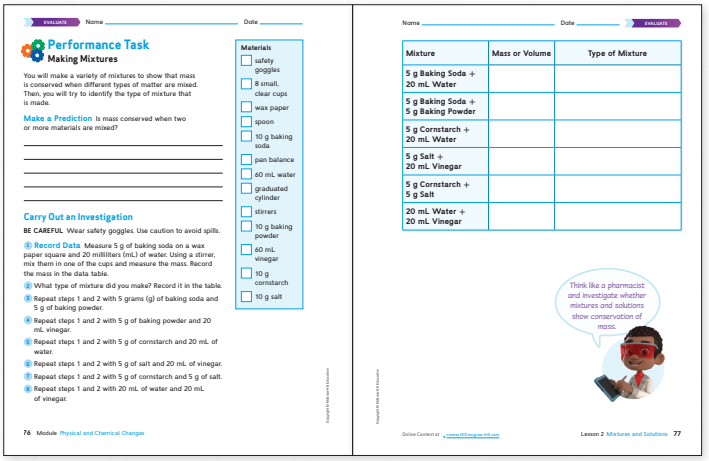
Fast Track = 4-6 days of instruction

Follow the Fast Track when short on time. We'll show you the activities key to understanding the lesson content.

User-Friendly Inquiries and Investigations

Tennessee Inspire Science offers multiple inquiry activities and investigations at the module and lesson levels. Hands-on activities and performance tasks provide students the opportunity to expand content knowledge and demonstrate skills in science and engineering. Deeper conceptual understanding of science and engineering is also supported through digital simulations and game-based learning.



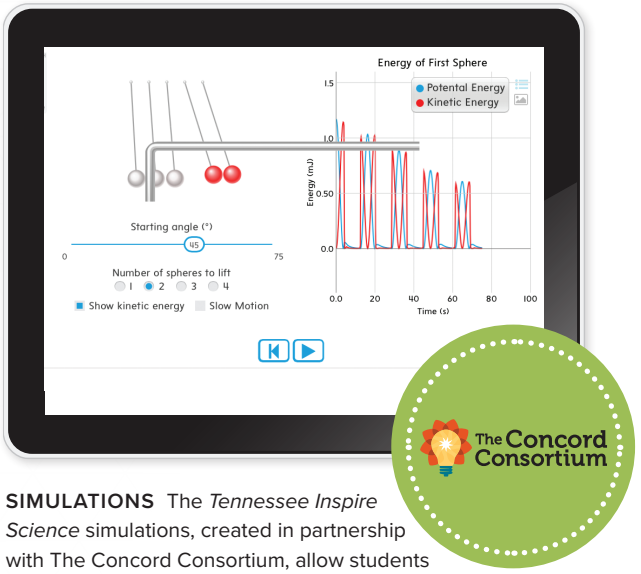


Performance Task
Making Mixtures

Mixture	Mass or Volume	Type of Mixture
5 g Baking Soda + 20 mL Water		
5 g Baking Soda + 5 g Baking Powder		
5 g Cornstarch + 20 mL Water		
5 g Salt + 20 mL Vinegar		
5 g Cornstarch + 5 g Salt		
20 mL Water + 20 mL Vinegar		

HANDS-ON LEARNING

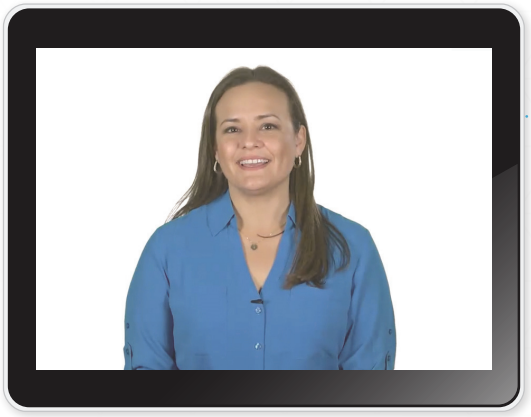
GAME-BASED LEARNING Filament Games creates digital learning games and interactives designed to foster 21st-century skills through experiential learning. *Tennessee Inspire Science* has partnered with Filament Games to create game-based learning that enables students to "play" with the lesson concepts to deepen conceptual understanding.



SIMULATIONS The *Tennessee Inspire Science* simulations, created in partnership with The Concord Consortium, allow students to explore cause and effect in ways that scientists and engineers do in real life and enable them to model concepts otherwise not possible to explore in the classroom.

User-Friendly Support

Tennessee Inspire Science comes with extensive support and professional development to ensure that you are able to teach every one of our science lessons with great success—and feel like a real science guru, too!



PROFESSIONAL DEVELOPMENT

- Quick Start
- Implementation
- Administrator Support Videos
- Mastery Online Courses

DINAH ZIKE, M.ED. VKV® AND FOLDABLES®

- Classroom Models
- Coaching
- Demonstration Videos

PAGE KEELEY, M.ED. FORMATIVE ASSESSMENT PROBES

- Classroom Models
- Coaching
- Teaching Techniques for Science Probes

RILEY
Automotive Engineer

Be sure to view Inspire Science's library of professional development videos that include strategies, coaching, and training from Dr. Carol Baker, Dr. Jo Anne Vasquez, and Dr. Rhett Allain.

Preparing the Next Generation of Innovators

Tennesse Inspire Science integrates Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts with literacy and mathematics standards so teaching science feels as natural and intuitive as it should be.

Disciplinary Core Ideas

THE CONTENT IN FOCUS

(for example, “The Universe and Its Stars”)

Science and Engineering Practices

THE SKILLS

(for example, “Developing and Using Models”)

Crosscutting Concepts

THE COMMON THEMES

(for example, “System and System Models”)

Tennessee Academic Standards for Science

STUDENTS APPLY AND DEMONSTRATE THEIR UNDERSTANDING

Students apply and demonstrate their understanding by using the Disciplinary Core Ideas, the Science and Engineering Practices and the Crosscutting Concepts together.

(for example, "Use observations of the sun, moon, and stars to describe patterns that can be predicted.")

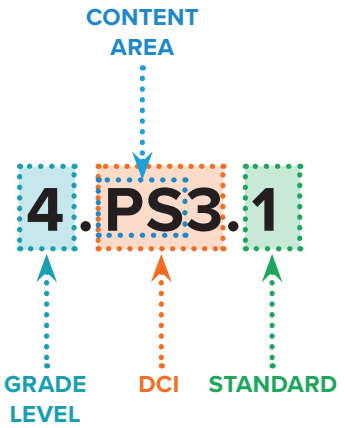
Cross-Curricular Connections

LITERACY **MATH**

ALL GREAT SCIENTISTS AND ENGINEERS NEED STRONG LITERACY AND MATH SKILLS.

The Tennessee Inspire Science lesson include cross-curricular connections with quick and easy references to the specific literacy and math skills being reinforced through the science investigations.

Decoding the Tennessee Academic Standards for Science



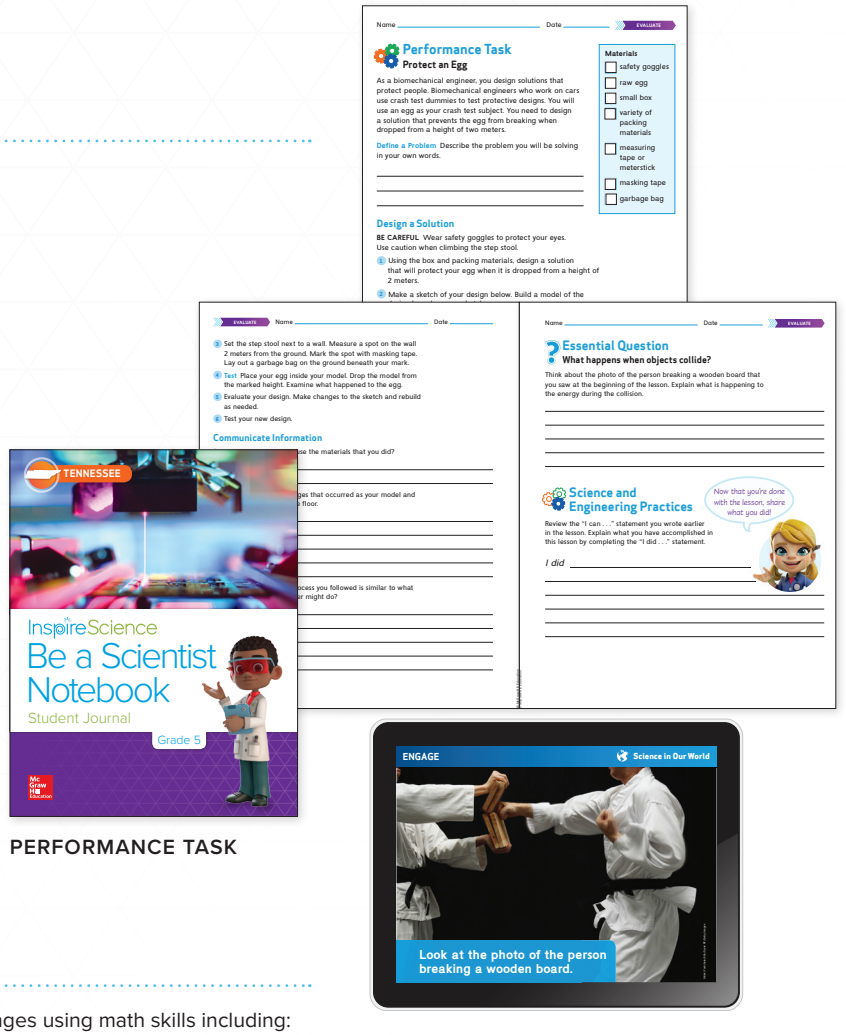
Cross-Curricular Connections

Tennessee Inspire Science connects the science you teach to the core subjects your students study. By integrating science, literature, and math, students master key concepts that impact science and beyond.

Science + Engineering Practices

Students achieve and demonstrate greater understanding through hands-on science and engineering activities using the engineering design process.

- Student driven inquiry
- Using technology to enhance learning
- Asking Questions and Defining Problems
- Creating and Modifying Models
- Planning and Carrying Out Investigations
- Analyzing and Interpreting Data
- Using Mathematics and Computational Thinking
- Constructing Explanations
- Designing Solutions
- Engaging in Argument from Evidence
- Obtaining, Evaluating, and Communicating Information
- Driving innovation



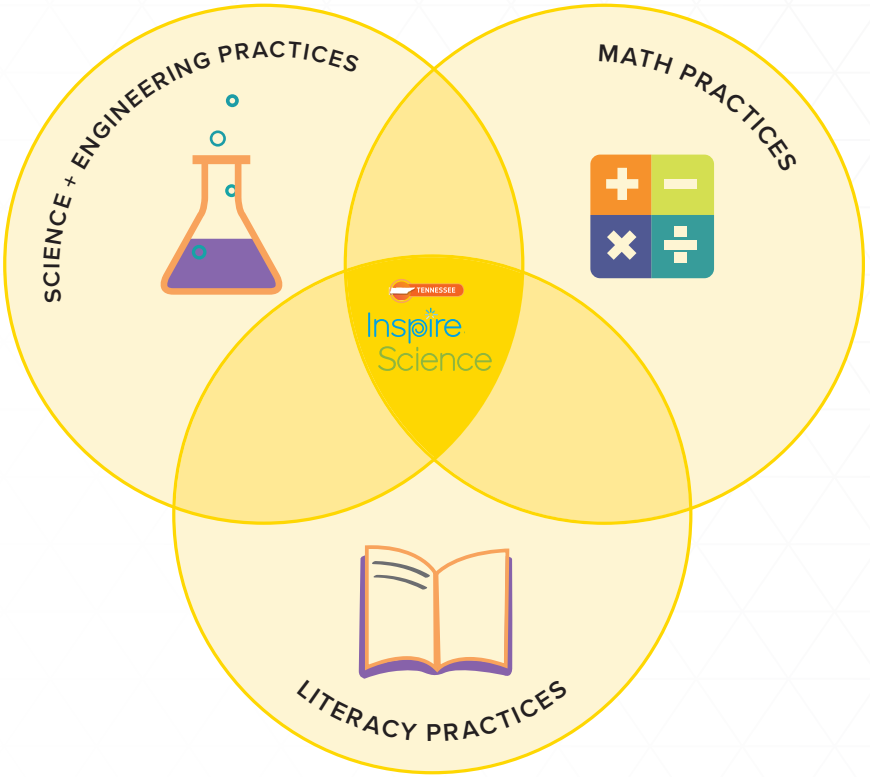
PERFORMANCE TASK

Math Practices

Students solve science and engineering challenges using math skills including:

- Analyzing and Interpreting Data
- Using Mathematics and Computational Thinking
- Developing and Using Models
- Obtaining, Evaluating, and Communicating Information

SIMULATIONS



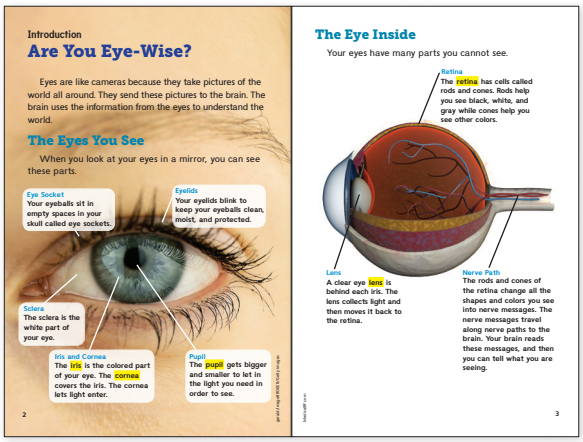
Hi, I'm Antonio and I'm one of the **STEM Career Kids!** We'll lead your students through ***Tennessee Inspire Science!***

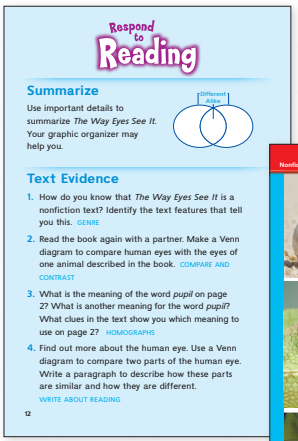
ANTONIO
Robotics Engineer

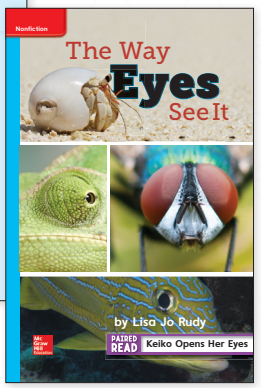
Literacy Practices

Students hone close reading, writing, and communication skills, develop solutions to real-world challenges while learning about exciting science content.

- Build Literacy Skills and Science Knowledge with Content-Rich Text
- Obtain, Evaluate, and Communicate Findings Effectively in Response to Tasks
- Engage in Arguments From Evidence and Apply Reasoning Skills
- Develop Research and Close-Reading Skills
- Advance Communication and Writing Skills with Text-Dependent Questions
- Develop Summary and Text-Evidence Skills
- Make Fiction and Informational Text Connections







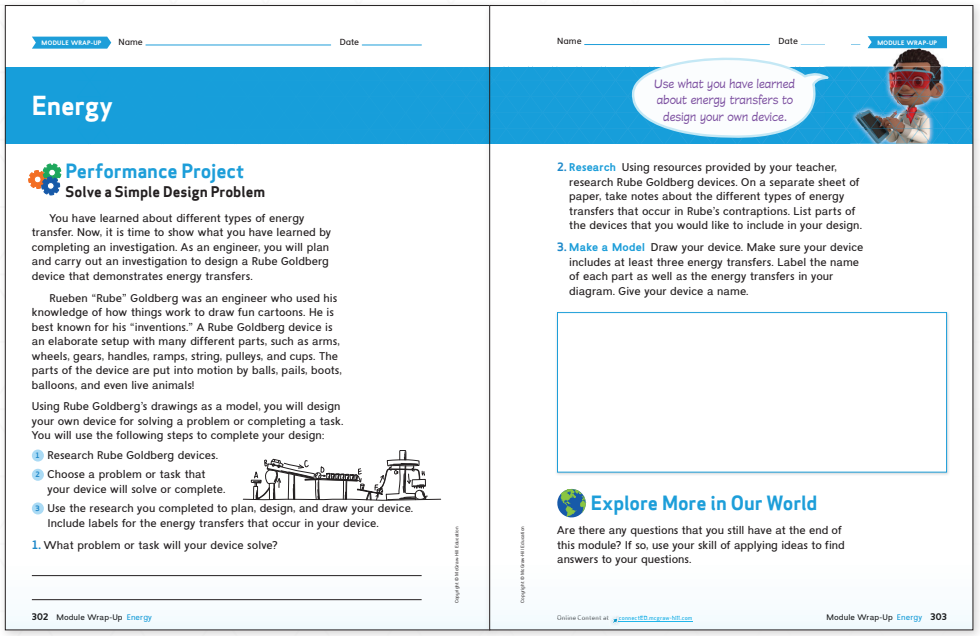
LEVELED READERS
Approaching, On, Beyond, ELL, & On-Level Spanish (Grades K-5)

Preparing Tomorrow's Innovators

The pace of change is accelerating. The challenges your students will face in their careers will likely be ones that don't even exist yet. Their future will require problem-solving skills that go beyond the status quo. *Tennessee Inspire Science* is designed to help today's students prepare for any future they may face through an emphasis on problem-based and career-based learning. With *Tennessee Inspire Science,* your students will learn to think like scientists and engineers, and develop the skills they need to create solutions to everyday challenges.

Problem-Based Learning

Empower students to develop critical-thinking through *Tennessee Inspire Science*'s problem-based learning and inquiry opportunities found throughout each lesson.



MODULE WRAP-UP Name _____ Date _____

Energy

Performance Project
Solve a Simple Design Problem

You have learned about different types of energy transfer. Now, it is time to show what you have learned by completing an investigation. As an engineer, you will plan and carry out an investigation to design a Rube Goldberg device that demonstrates energy transfers.

Rueben "Rube" Goldberg was an engineer who used his knowledge of how things work to draw fun cartoons. He is best known for his "inventions." A Rube Goldberg device is an elaborate setup with many different parts, such as arms, wheels, gears, handles, ramps, string, pulleys, and cups. The parts of the device are put into motion by balls, pails, boots, balloons, and even live animals!

Using Rube Goldberg's drawings as a model, you will design your own device for solving a problem or completing a task. You will use the following steps to complete your design:

1. Research Rube Goldberg devices.
2. Choose a problem or task that your device will solve or complete.
3. Use the research you completed to plan, design, and draw your device. Include labels for the energy transfers that occur in your device.

1. What problem or task will your device solve?

_____

_____

302 Module Wrap-Up Energy

Name _____ Date _____ MODULE WRAP-UP

Use what you have learned about energy transfers to design your own device.

2. **Research** Using resources provided by your teacher, research Rube Goldberg devices. On a separate sheet of paper, take notes about the different types of energy transfers that occur in Rube's contraptions. List parts of the devices that you would like to include in your design.
3. **Make a Model** Draw your device. Make sure your device includes at least three energy transfers. Label the name of each part as well as the energy transfers in your diagram. Give your device a name.

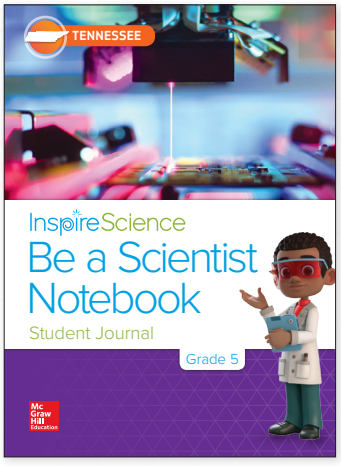
Explore More in Our World

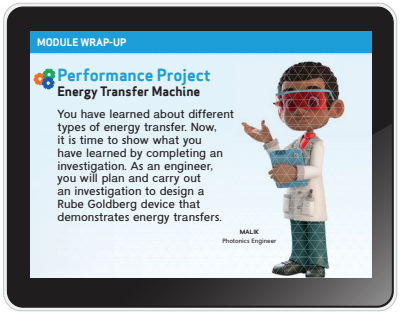
Are there any questions that you still have at the end of this module? If so, use your skill of applying ideas to find answers to your questions.

Online Content at connectED.mcgraw-hill.com

Module Wrap-Up Energy 303

MALIK
Photonics Engineer



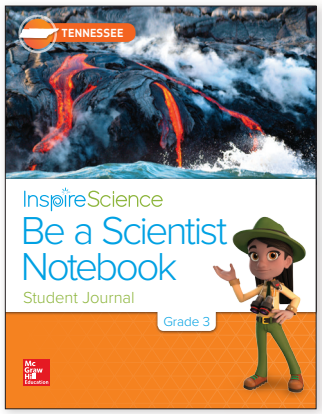


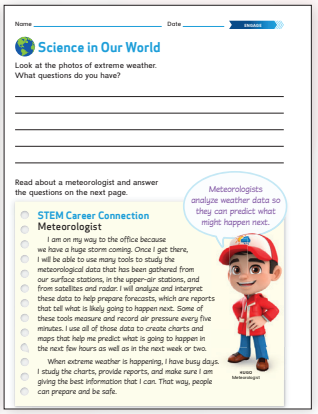
PERFORMANCE PROJECT
Students will apply their learning with a performance projects at the close of every module.

Career-Based Learning

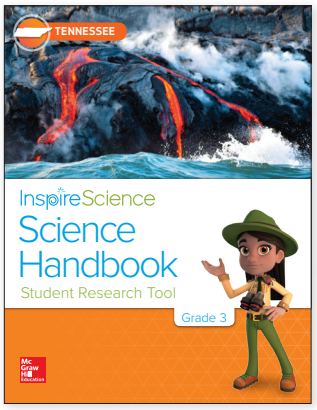
Expose students to real-life STEM careers to build knowledge and create excitement about future careers in science, technology, engineering, and math.

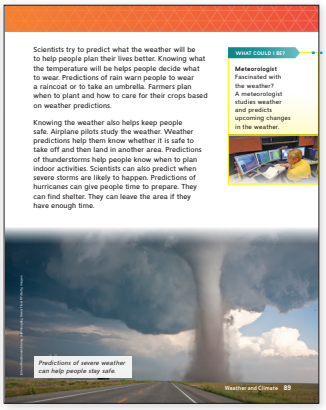
Every lesson opens with a STEM Career Kid video.

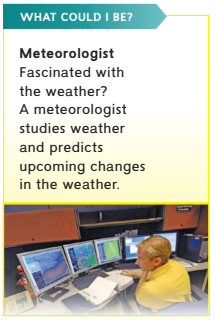


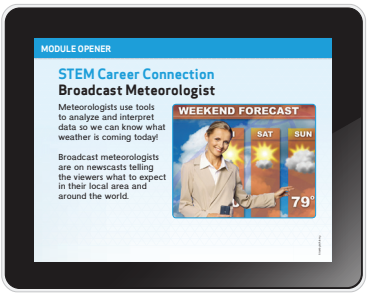


HUGO
Meteorologist

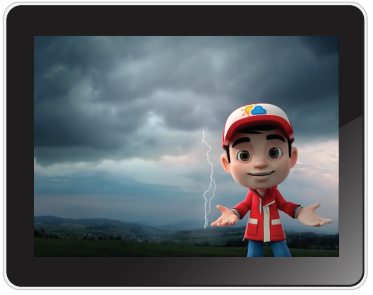








STEM Career Connections
Introduce STEM career connections with ready-made ePresentation slides found in every lesson.



STEM Career Kid Videos
Create curiosity about future careers with the Inspire Science STEM Career Kid videos.

STEM Career Videos
Continue to build excitement and make career connections with real-life STEM Career videos.

TENNESSEE

InspireScience

USER-FRIENDLY • CONNECTED • INSPIRING

To explore further, visit **mheducation.com/prek12Tennessee**

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