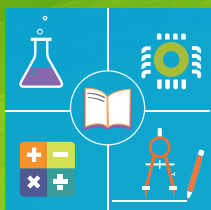


Inspire Science

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.



GRADES
K-5

WHY IS THE SKY
BLUE?

WHY IS THE EARTH
ROUND?

WHY DOES THE SUN
SHINE?





TENNESSEE

Inspire Science

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



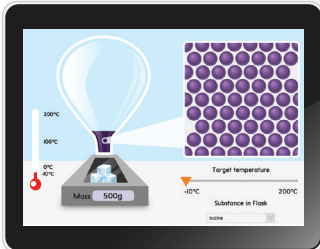
DIGITAL STUDENT CENTER



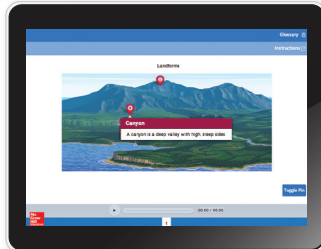
READY-TO-GO LESSON PRESENTATIONS



SIMULATIONS



INTERACTIVES



SCIENCE SONGS



GAMES



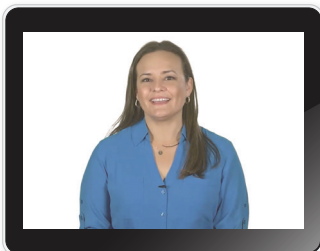
eASSESSMENT



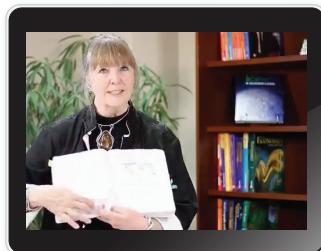
VIDEOS



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



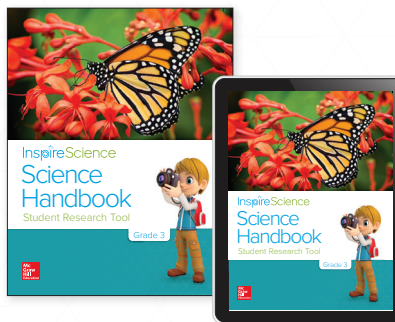
SCIENCE PAIRED READ ALOUDS

(Grades K-2) Available in Spanish



SCIENCE HANDBOOK

(Grades 3-5)



PHYSICAL

LAB KITS

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



GRACE
Computer Programmer

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



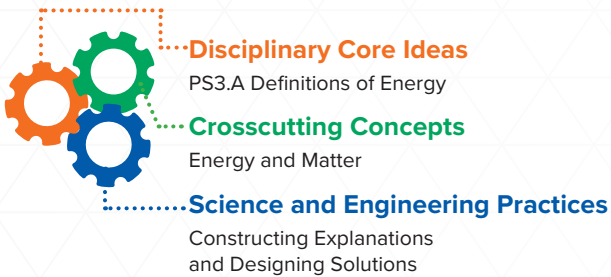
User-Friendly Lesson Structure

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.



Key Steps to Lesson Success

Learning Progression



ASSESS LESSON READINESS

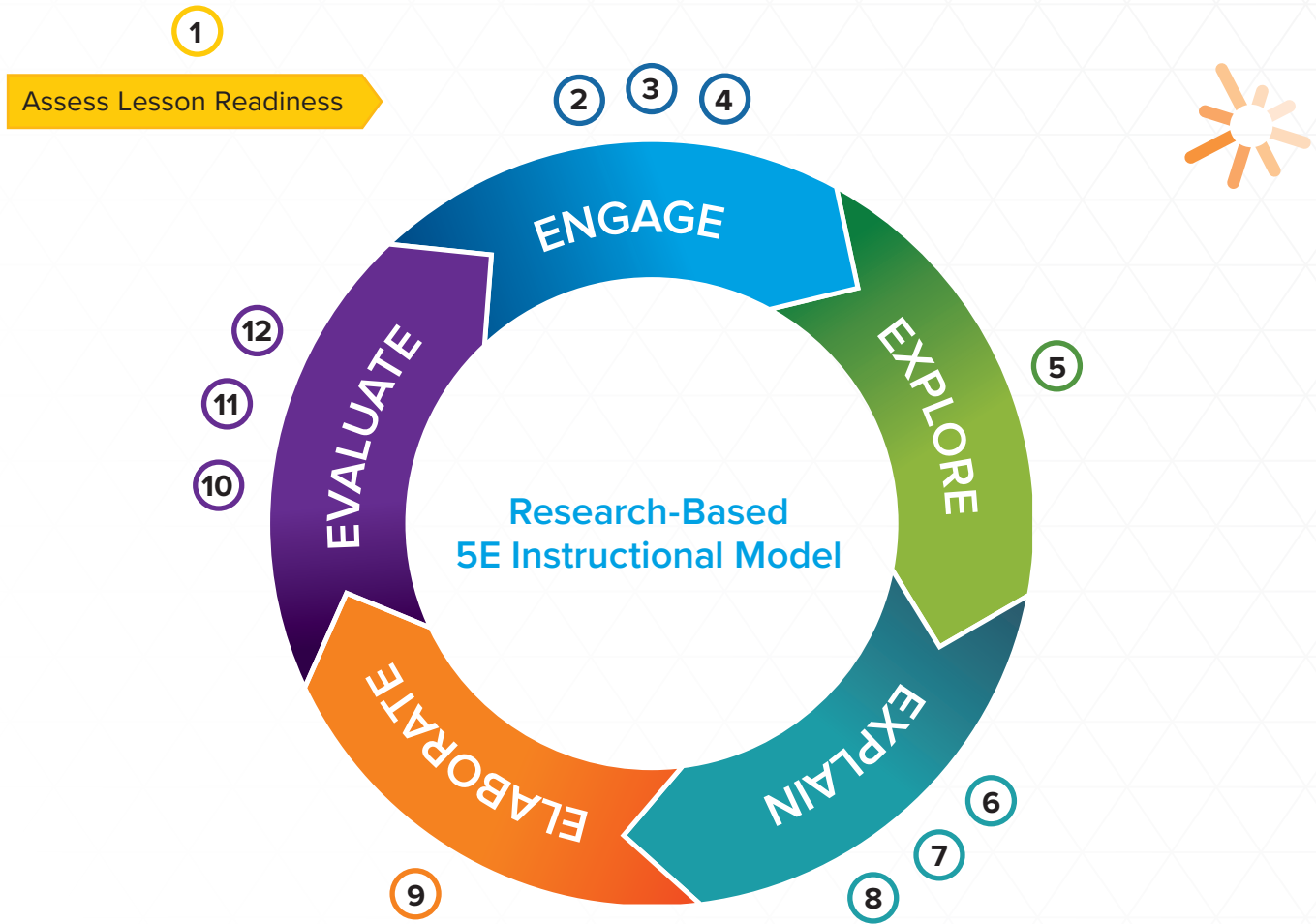
ENGAGE

EXPLORE

- 1 Page Keeley Science Probes

- 2 Science in Our World
- 3 Essential Question
- 4 Science and Engineering Practices

- 5 Inquiry Activity



I Can

I Did

EXPLAIN

ELABORATE

EVALUATE

Obtain and Communicate Information

Reflect and Refine

Science and Engineering Practices

Research, Investigate, and Communicate

Performance Task

Essential Question

Science and Engineering Practices

Approximate Pacing

(based on 45-minute teaching blocks)

Module = 1 month of instruction

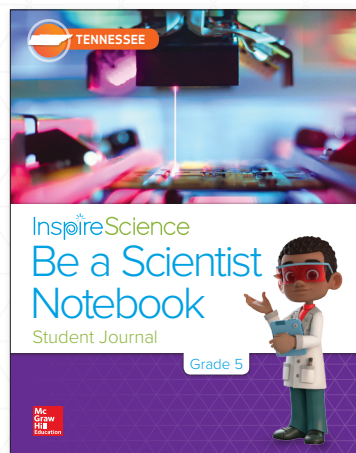
Lesson = 8-10 days of instruction

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

You will make a variety of mixtures to show that mass is conserved when different types of matter are mixed. Then, you will try to identify the type of mixture that is made.

Make a Prediction: Is mass conserved when two or more materials are mixed?

Carry Out an Investigation

BE CAREFUL! Wear safety goggles. Use caution to avoid spills.

Record Data Measure 5 g of baking soda on a wax paper square and 20 milliliters (mL) of water. Using a strainer, mix them in one of the cups and measure the mass. Record the mass in the data table.

What type of mixture did you make? Record it in the table.

Repeat steps 1 and 2 with 5 grams (g) of baking soda and 5 g of baking powder.

Repeat steps 1 and 2 with 5 g of baking powder and 20 mL vinegar.

Repeat steps 1 and 2 with 5 g of cornstarch and 20 mL of water.

Repeat steps 1 and 2 with 5 g of salt and 20 mL of vinegar.

Repeat steps 1 and 2 with 5 g of cornstarch and 5 g of salt.

Repeat steps 1 and 2 with 20 mL of water and 20 mL of vinegar.

Materials

- safety goggles
- 8 small, clear cups
- wax paper
- spoon
- 10 g baking soda
- pan balance
- 60 mL water
- graduated cylinder
- stirrers
- 10 g baking powder
- 20 mL vinegar
- 10 g cornstarch
- 10 g salt

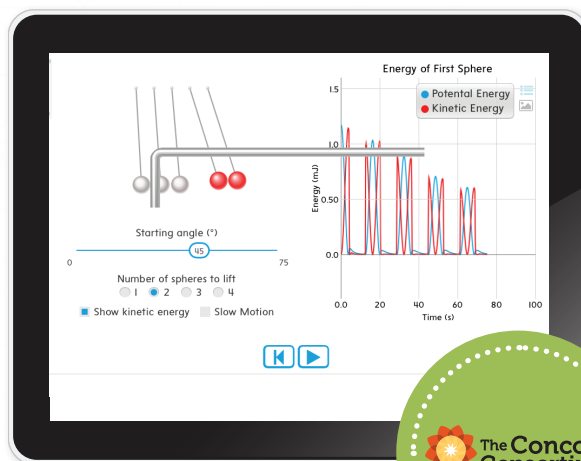
Mixture	Mass or Volume	Type of Mixture
5 g Baking Soda + 20 mL Water		
5 g Baking Soda + 5 g Baking Powder		
5 g Cornstarch + 20 mL Water		
5 g Salt + 20 mL Vinegar		
5 g Cornstarch + 5 g Salt		
20 mL Water + 20 mL Vinegar		

Think like a pharmacist and investigate whether mixtures and solutions show conservation of mass.

HANDS-ON LEARNING



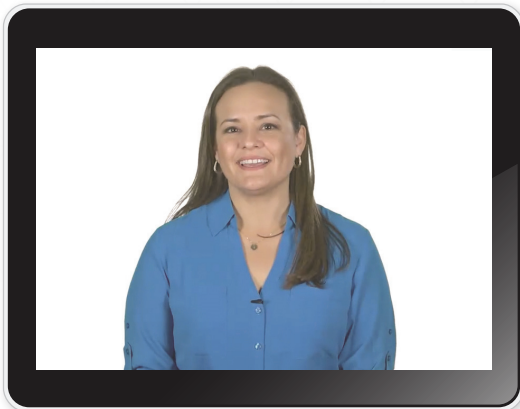
GAME-BASED LEARNING Filament Games creates digital learning games and interactives designed to foster 21st-century skills through experiential learning. Tennessee Inspire Science has partnered with Filament Games to create game-based learning that enables students to “play” with the lesson concepts to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



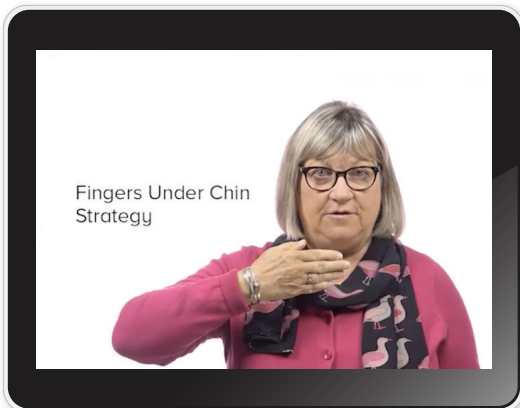
PROFESSIONAL DEVELOPMENT

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



DINAH ZIKE, M.ED. VKV® AND FOLDABLES®

- Classroom Models
- Coaching
- Demonstration Videos



Fingers Under Chin Strategy



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

Tennessee 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

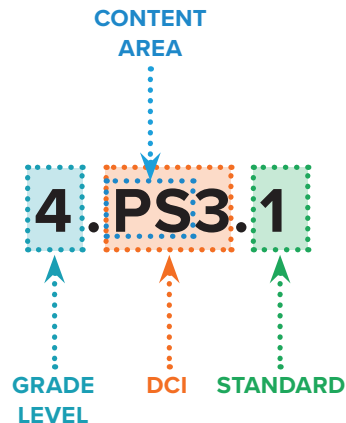
LITERACY

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: Protect an Egg

As a biomechanical engineer, you design solutions that protect people. Biomechanical engineers who work on cars use crash test dummies to test protective designs. You will use an egg as your crash test subject. You need to design a solution that prevents the egg from breaking when dropped from a height of two meters.

Define a Problem: Describe the problem you will be solving in your own words.

Design a Solution: BE CAREFUL! Wear safety goggles to protect your eyes. Use caution when climbing the step stool.

- Using the box and packing materials, design a solution that will protect your egg when it is dropped from a height of 2 meters.
- Make a sketch of your design below. Build a model of the

Materials:

- safety goggles
- raw egg
- small box
- variety of packing materials
- measuring tape or meterstick
- masking tape
- garbage bag

Communicate Information

What materials did you use?

What occurred as your model and egg fell?

Does your design seem similar to what you might do?

Essential Question

What happens when objects collide?

Think about the photo of the person breaking a wooden board that you saw at the beginning of the lesson. Explain what is happening to the energy during the collision.

Science and Engineering Practices

Review the "I can..." statement you wrote earlier in the lesson. Explain what you have accomplished in this lesson by completing the "I did..." statement.

I did _____

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



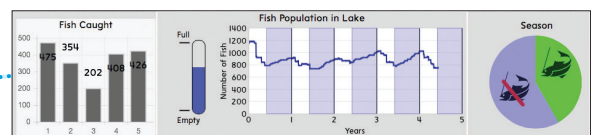
Five years are over!

In this round, you caught **1469** fish.

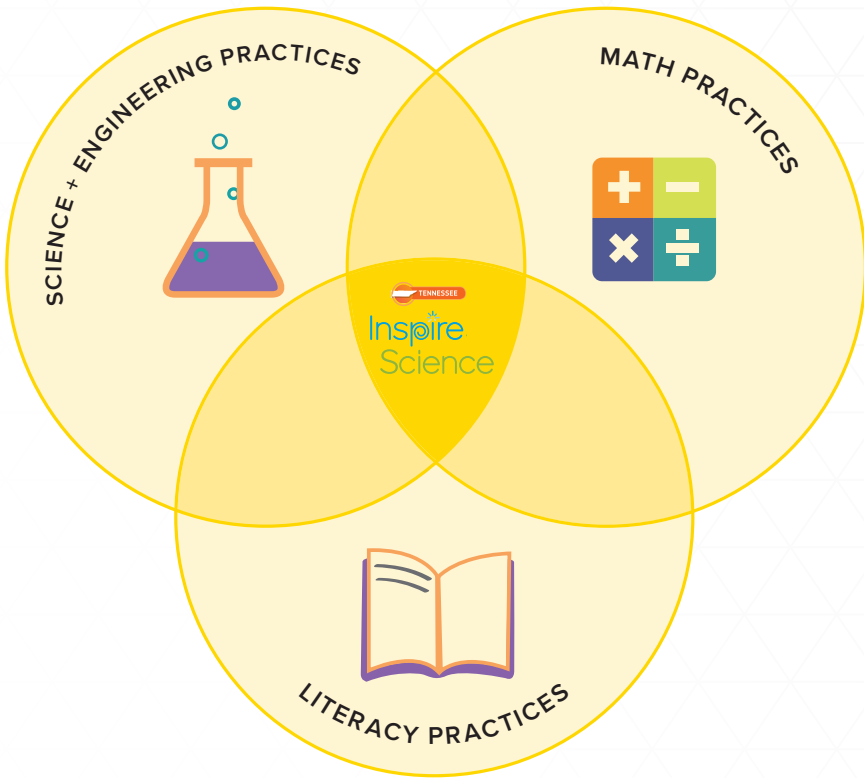
Did you have any trouble catching fish any year?

Look at the chart of the fish you caught, and the graph of the population of fish over the five years. Can you think of why fish might have been harder to catch during some years?

Continue



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

Introduction
Are You Eye-Wise?

Eyes are like cameras because they take pictures of the world all around. They send these pictures to the brain. The brain uses the information from the eyes to understand the world.

The Eyes You See

When you look at your eyes in a mirror, you can see these parts:

Eye Socket
Your eyeballs sit in empty spaces in your skull called eye sockets.

Iris and Cornea
The **iris** is the colored part of your eye. The **cornea** covers the iris. The cornea lets light enter.

Pupil
The **pupil** gets bigger and smaller to let in the light you need in order to see.

Eyelids
Your eyelids blink to keep your eyeballs clean, moist, and protected.

The Eye Inside

Your eyes have many parts you cannot see.

Retina
The **retina** has cells called rods and cones. Rods help you see black, white, and gray while cones help you see other colors.

Lens
A clear eye **lens** is behind each iris. The lens collects light and then moves it back to the retina.

Nerve Path
The rods and cones of the retina change all the shapes and colors you see into nerve messages. The nerve messages travel along nerve paths to the brain. Your brain reads these messages, and then you can tell what you are seeing.

Respond to Reading

Summarize

Use important details to summarize *The Way Eyes See It*. Your graphic organizer may help you.

Text Evidence

1. How do you know that *The Way Eyes See It* is a nonfiction text? Identify the text features that tell you this. **GENRE**
2. Read the book again with a partner. Make a Venn diagram to compare human eyes with the eyes of one animal described in the book. **COMPARE AND CONTRAST**
3. What is the meaning of the word *pupil* on page 2? What is another meaning for the word *pupil*? What clues in the text show you which meaning to use on page 2? **HOMOGRAPHS**
4. Find out more about the human eye. Use a Venn diagram to compare two parts of the human eye. Write a paragraph to describe how these parts are similar and how they are different. **WRITE ABOUT READING**



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.



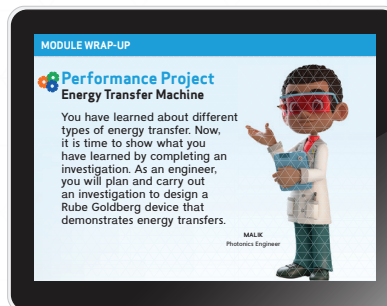
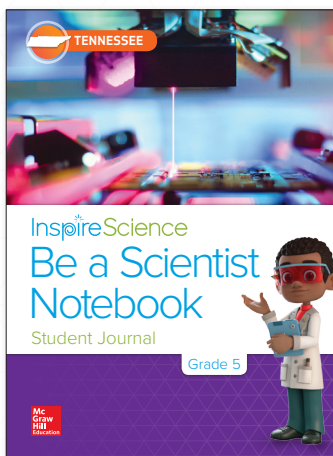
Problem-Based Learning

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

<p>MODULE WRAP-UP Name _____ Date _____</p> <h3>Energy</h3> <p>Performance Project Solve a Simple Design Problem</p> <p>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.</p> <p>Rubeben "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!</p> <p>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:</p> <ol style="list-style-type: none"> 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. <p>1. What problem or task will your device solve?</p> <p>_____</p> <p>_____</p> <p>302 Module Wrap-Up: Energy</p>	<p>Name _____ Date _____ MODULE WRAP-UP</p> <p>Use what you have learned about energy transfers to design your own device.</p> <p>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.</p> <p>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.</p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div> <p>Explore More in Our World</p> <p>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.</p> <p>Module Wrap-Up: Energy 303</p>
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MALIK
Photonics Engineer

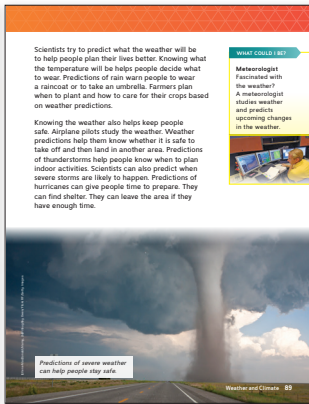
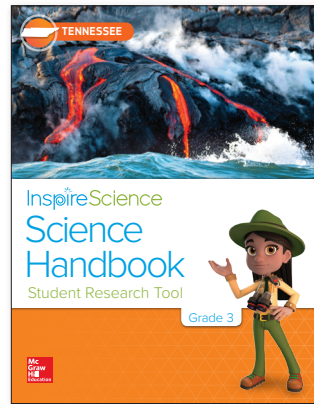
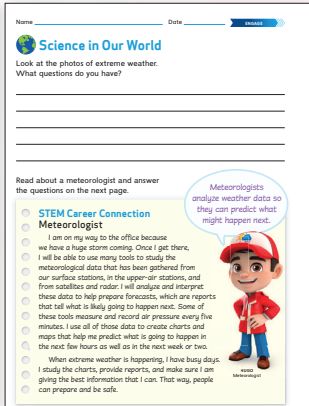
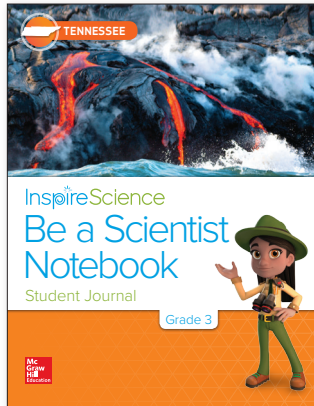


PERFORMANCE PROJECT
Students will apply their learning with a performance projects at the close of every module.

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.

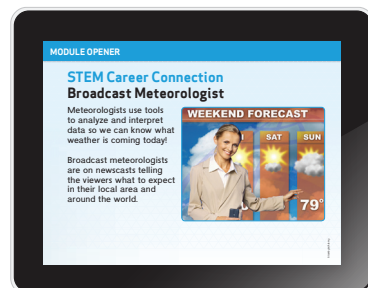
Every lesson opens with a STEM Career Kid video.



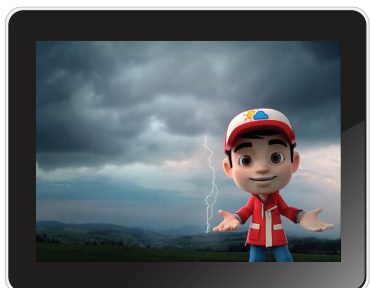
WHAT COULD I BE?

Meteorologist
Fascinated with the weather? A meteorologist studies weather and predicts upcoming changes in the weather.

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.



InspireScience

USER-FRIENDLY • CONNECTED • INSPIRING



To explore
further, visit
[mheducation.com/
prek12Tennessee](http://mheducation.com/prek12Tennessee)