

A Future Full of Possibilities

ENCOUNTER THE PHENOMENON

How Does the *Inspire Science* High School series Meet All of My Classroom Needs for Print, Digital, Hands-On, and Spanish Resources?

Let's look at how with this program, you'll have everything you need for success.

Lift & Learn

Let Them Dream Big

With the emphasis the *Inspire Science* High School series places on curiosity, investigative skills, and innovative thinking, just imagine what the students in your classroom today might dream up to improve our lives someday.



14 Program Overview



A History of Phenomenon

THOMAS EDISON

Invention: Electrical Light

Date of Invention: 1879

America's Greatest Inventor; Thomas Edison:

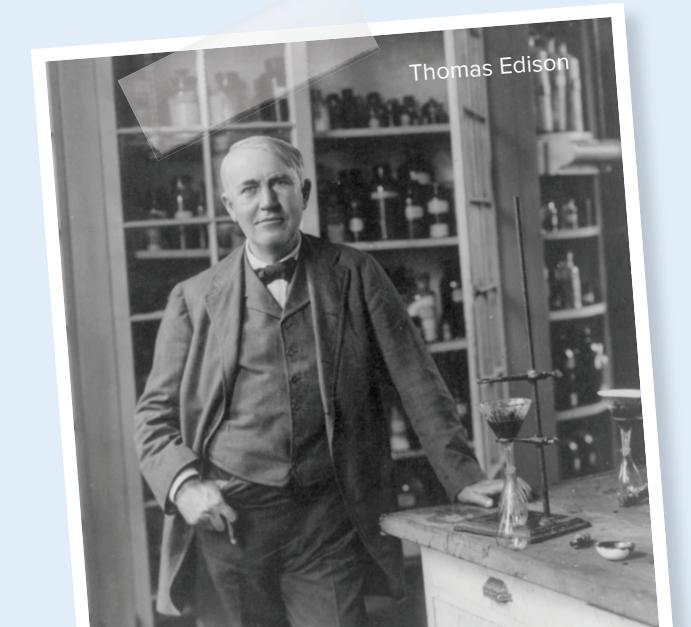
On February 11, 1847, an inventor and businessman was born in Milan, Ohio who would influence the world. Thomas Edison has been described as America's greatest inventor, holding 1093 US patents and hundreds more across the world. His most famous patent was for the incandescent light bulb.

Edison began his work on the incandescent light bulb in 1878. He wanted to invent a light bulb that would replace gas lights and last for extended periods of time. After much trial and error and numerous attempts with different types of materials he finally succeeded in lighting the first incandescent light bulb on October 22, 1879, which stayed lit for roughly 14 hours. The success of the light bulb led to many patents which earned him the label, America's Greatest Inventor.

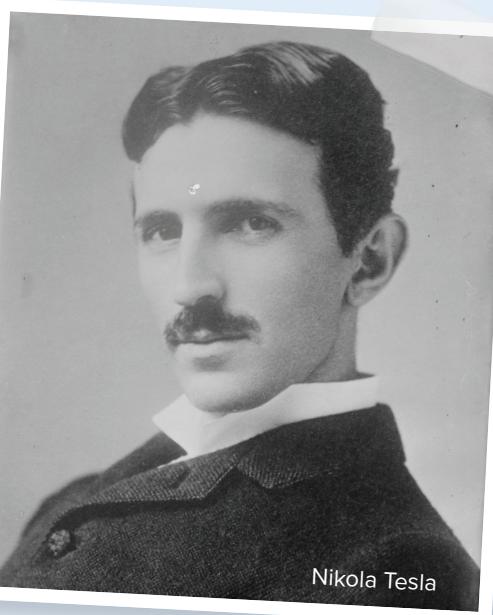
Edison's success with the light bulb led to many more inventions and he launched a number of different businesses in the United States and throughout the world. Throughout history, Thomas Edison's innovations have revolutionized life as we know it and influenced many inventors, including Nikola Tesla.

"I have not failed. I've just found 10,000 ways that won't work."

—Thomas Edison



Inspire Science



Nikola Tesla

NIKOLA TESLA

Invention: The Tesla Coil

Date of Invention: 1905

Nikola Tesla:

Nikola Tesla was born on July 10, 1856 in Smiljan, Croatia. He was an inventor, electrical and mechanical engineer, and physicist. He is best known for his ground-breaking contributions to the design of the alternating-current (AC) electrical system.

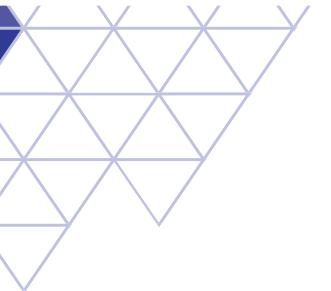
From a young age, Tesla showed an interest in science. After working for Thomas Edison for a year, Tesla struck out on his own and received more than 30 patents for his inventions. Tesla began working with George Westinghouse after Tesla gave a speech about alternating-current electrical systems. In 1891 Tesla invented the Tesla coil that is an induction coil used in radio communications. Throughout his life, Nikola Tesla obtained 278 patents.

Today we use Tesla's inventions in many ways, most notably every time we 'flip a switch' to turn on a light!

"The day science begins to study non-physical phenomena, it will make more progress in one decade than in all the previous centuries of its existence."

— Nikola Tesla

Program Overview 3



Let's Embrace Change, Together.

Change is on the horizon. As schools transition to new standards, a number of questions will no doubt be at the forefront of every science educator's mind:

- How can I easily transition?
- How do I make sure my students are engaged with this new approach?
- How will I manage the increase in inquiry and hands-on activities with everything else I have to do?
- How can I ensure all my students have the same chance for success?
- How can I meet all my classroom needs?
- How might my students impact our world someday?

The *Inspire Science* High School series development team at McGraw-Hill Education has put solutions to these challenges (and many more) at the forefront of our work, through years of close collaboration with educators like you. The result is a user-friendly approach to implementation, so you can focus your energy on the art of teaching, and the joy of inspiring the next generation of innovators.

Let's take a look at how the *Inspire Science* High School series will help you with a smooth transition.

Lift & Learn

A New Level of Innovation



A Smooth Transition

The *Inspire Science* High School series isn't just about a new set of standards. It's a new philosophy for K-12 science education focused on helping you prepare students for career and college readiness.

At McGraw-Hill Education, we understand that making the shift to new standards can be challenging, and we want to help make it easier on you. That's why the *Inspire Science* High School series team has been studying the standards for years, while testing ideas with teachers like you to create a user-friendly experience for both teachers and students.

Open Educational Resources

The *Inspire Science* High School series offers the opportunity to curate your own content. With our partners such as the Smithsonian, SpongeLab, and PhET you are able to find the resources you need when you need them.

Smithsonian

SPONGELAB
A GLOBAL SCIENCE COMMUNITY

PhET
INTERACTIVE SIMULATIONS
University of Colorado Boulder

Print and Digital Resources

The *Inspire Science* High School series includes a digital companion to complement the learning experience with interactive resources like simulation 3D models, videos, and adaptive learning. The Read Anywhere app provides the ability to read your digital text offline at any time.



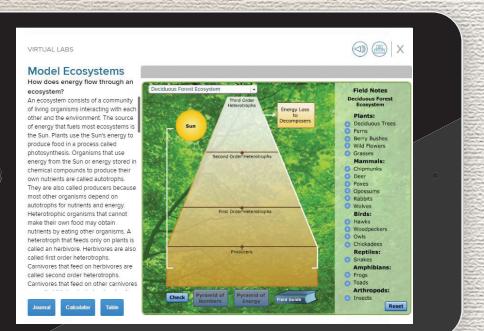
STUDENT AND TEACHER EDITIONS

(*Inspire Biology*, *Inspire Chemistry*, *Inspire Physics*, *Inspire Earth Science*, and *Inspire Physical Science*)



Digital Resources

In addition to the digital versions of each print book, the *Inspire Science* High School series provides a digital experience designed with advantages for both you and your students, including innovative interactives, videos, simulations, virtual labs, personal tutors, and more.



Three-Course Model

Dynamic resources are embedded into each Three-Course program (*Inspire Biology*, *Inspire Chemistry*, *Inspire Physics*) to help you and your students meet the challenges of integrating the Earth and Space Sciences (ESS) into each course. You are empowered to teach confidently knowing every unit includes standard-aligned content while also emphasizing the Three-Course Model.



See the Digital Experience section of the Program Guide to learn more about these engaging interactives.



Designed to Fit Any Classroom

ENCOUNTER THE PHENOMENON

How Does *Inspire Science* High School series Inspire All Students?

Let's look at some of the practical ways this program inspires all students with equal access to rigorous science content.

Lift & Learn

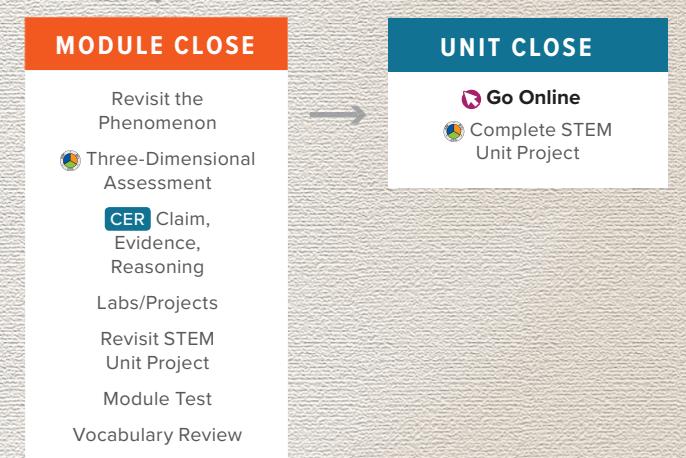
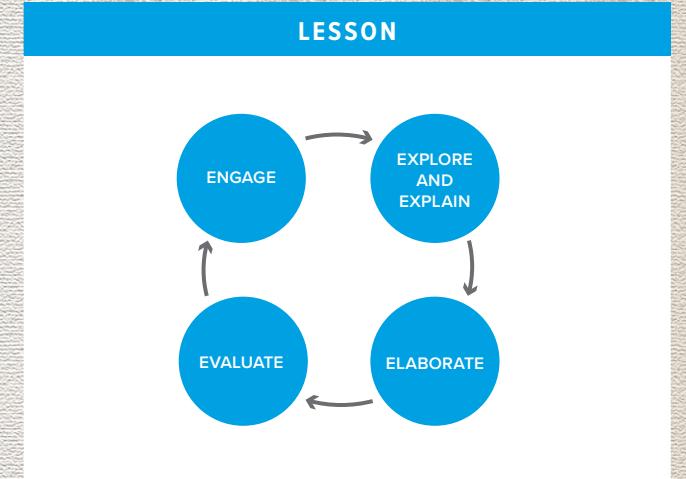
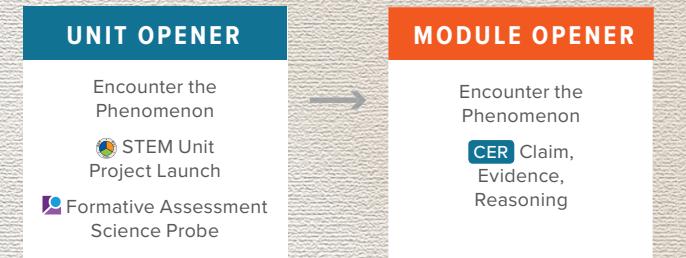
Resources for Every Classroom

At McGraw-Hill Education, we understand that different classrooms have different needs for tactile and digital resources. We know those needs can change day-to-day. The *Inspire Science* High School series is designed to meet all of your resource needs with an array of print and digital options, so you have access to all of the great learning resources in any form you'd like, whenever you need them.



User-Friendly Instructional Model

Each *Inspire Science* High School series unit phenomenon sets the stage for the STEM Unit Project. Each module within the unit supports the STEM Unit Project with phenomena-driven 5E lessons to support a variety of learning pathways.



Support for New Standards

The transition to new standards requires a few shifts in science instruction and learning, and the *Inspire Science* High School series supports you through each one.

- Progressive, Three-Dimensional Learning
- Depth Over Breadth
- Phenomena-Driven, Inquiry-Based, Hands-On Learning
- Performance-Based Testing
- Integrated Engineering



For more information on the *Inspire Science* High School series instructional model see the Program Guide.

Professional Learning When You Need It
Inspire Science High School series includes an expansive library of relevant, self-paced, professional learning courses to support implementation, instructional progression, and mastery—all available 24/7.



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How Does *Inspire Science* High School Series Ensure a Smooth Transition to New Standards?

Let's look at a few inspiring ways the *Inspire Science* High School series will help you make the transition.

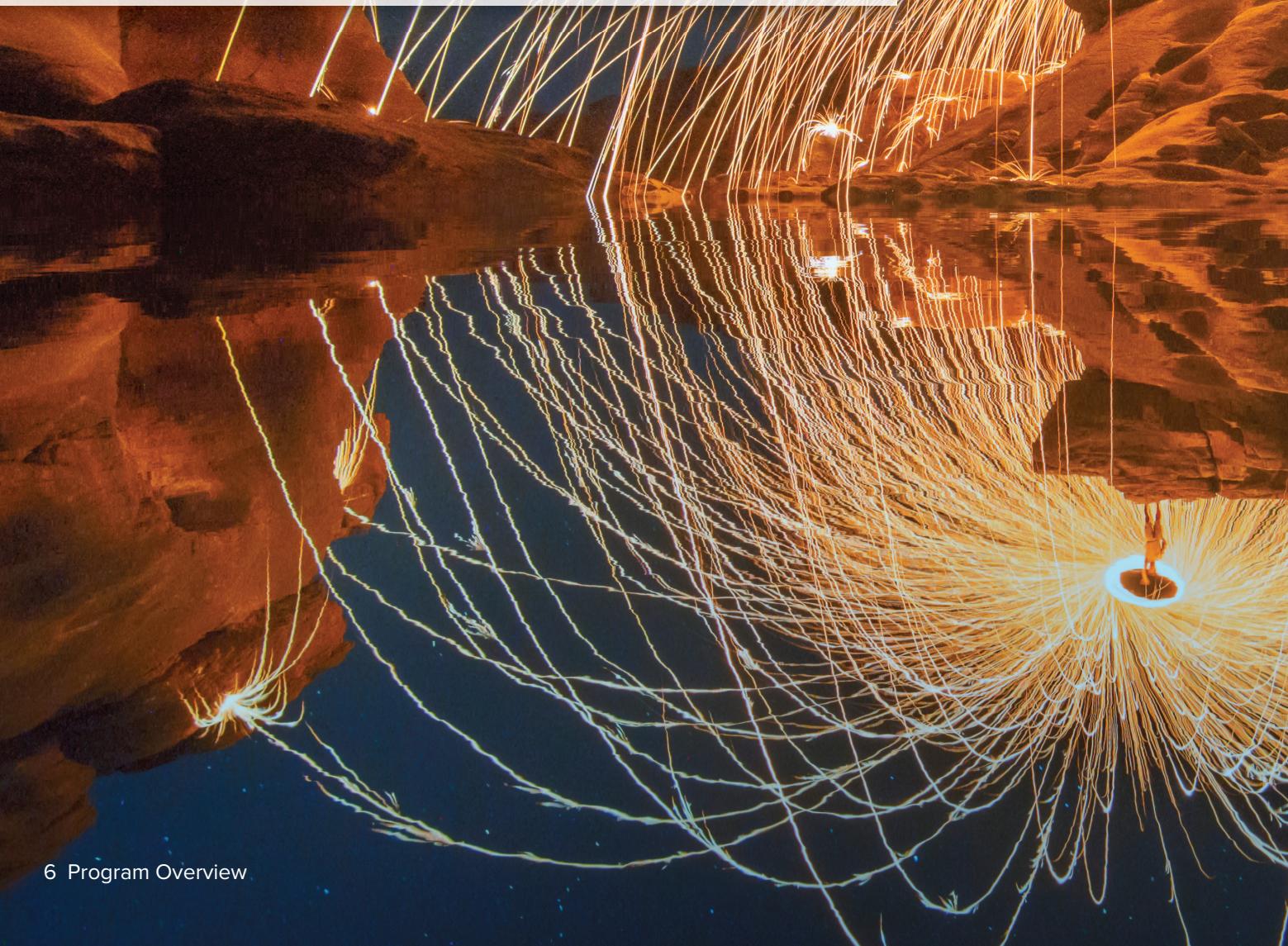
Lift & Learn

Next Generation Engagement

Ensure Student Engagement

As educators, we understand what happens when students are genuinely engaged: a classroom full of excitement, increased focus, and deeper conceptual understanding.

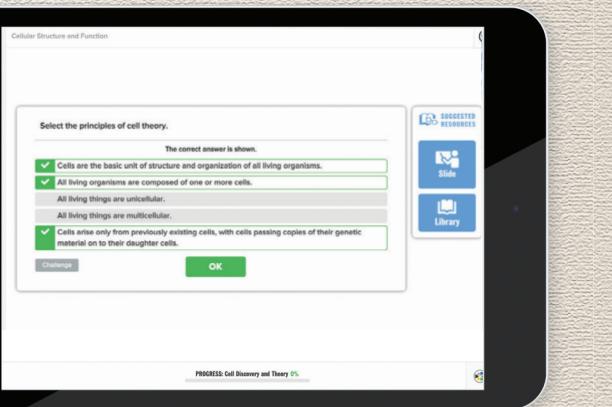
That's why the *Inspire Science* High School series places student engagement at the forefront. Each module and lesson is designed to tap into students' natural curiosity about the world around them through the investigation of real-world phenomena. Student engagement is further fueled through an innovative digital experience and the connections to real-world applications with the STEM at Work and STEM Unit Projects.



6 Program Overview

LEARNSMART®

LearnSmart® with *SmartBook*® transforms the way students read. A proven, adaptive learning program, *LearnSmart* individualizes learning to help students study more efficiently and retain more knowledge.



CER Framework

The Claim, Evidence, Reasoning (CER) framework in the *Inspire Science* High School series ensures every student is engaged in rigorous scientific inquiry and argument from evidence.

MODULE 2
PRINCIPLES OF ECOLOGY

ENCOUNTER THE PHENOMENON
Why would a bird build a nest in a tree with thorns?

SEP Ask Questions
Do you have other questions about the phenomenon? If so, add them to the driving question board.

CER Claim, Evidence, Reasoning

Make Your Claim Use your CER chart to make a claim about why a bird would build a nest in a tree with thorns. Explain your reasoning.

Collect Evidence Use the lessons in this module to collect evidence to support your claim. Record your evidence as you move through the module.

Explain Your Reasoning You will revisit your claim and explain your reasoning at the end of the module.

GO ONLINE to access your CER chart and explore resources that can help you collect evidence.

LES Level

CER Claim, Evidence, Reasoning

Make Your Claim Use your CER chart to make a claim about why a bird would build a nest in a tree with thorns. Explain your reasoning.

Collect Evidence Use the lessons in this module to collect evidence to support your claim. Record your evidence as you move through the module.

Explain Your Reasoning You will revisit your claim and explain your reasoning at the end of the module.

English Language (EL/ELD) Support

Rooted in learning sciences research, the *Inspire Science* High School series applies the best instructional practices for teaching EL students in alignment with the ELD standards. Each module and lesson has scaffolded activities that offer students of any level of English language proficiency the opportunity to engage in academically challenging science and engineering content while supporting language acquisition.

EL Support

Writing ELD PI.9/10.1

Guide students in exchanging information and ideas to discuss what kind of animal is a predator.

EMERGING LEVEL Support students in asking and answering yes-no and wh- questions about what animals are predators. Provide sentence frames such as: What kind of _____ [animal] is a _____ [predator]? Is _____ [a rattlesnake] a predator?

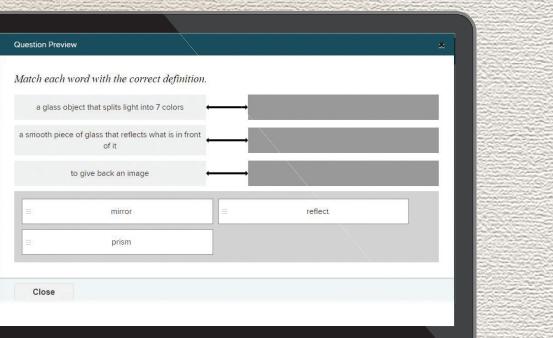
EXPANDING LEVEL Support students in following turn-taking rules and asking relevant questions. Provide sentence frames: What kind of animal _____ [is a predator]? I think _____ [carnivores are predators]. / Yes, I agree. They _____ [eat other animals].

BRIDGING LEVEL Have students contribute to a group discussion by asking and answering relevant, on-topic questions. EX. What kind of animal is a predator? / Predators are carnivores. For examples, a rattlesnake is a predator. / Why do you think so? / A predator eats other animals and rattlesnakes eat other animals. / That's true.

Lesson 2 • Flow of Energy in an Ecosystem 37

Next Generation Assessments

Ensuring students are well prepared can seem daunting, but with next-generation assessment tools within the *Inspire Science* High School series, you'll know what to expect and how to prepare your students for success.



Online Assessment Center **GO ONLINE**

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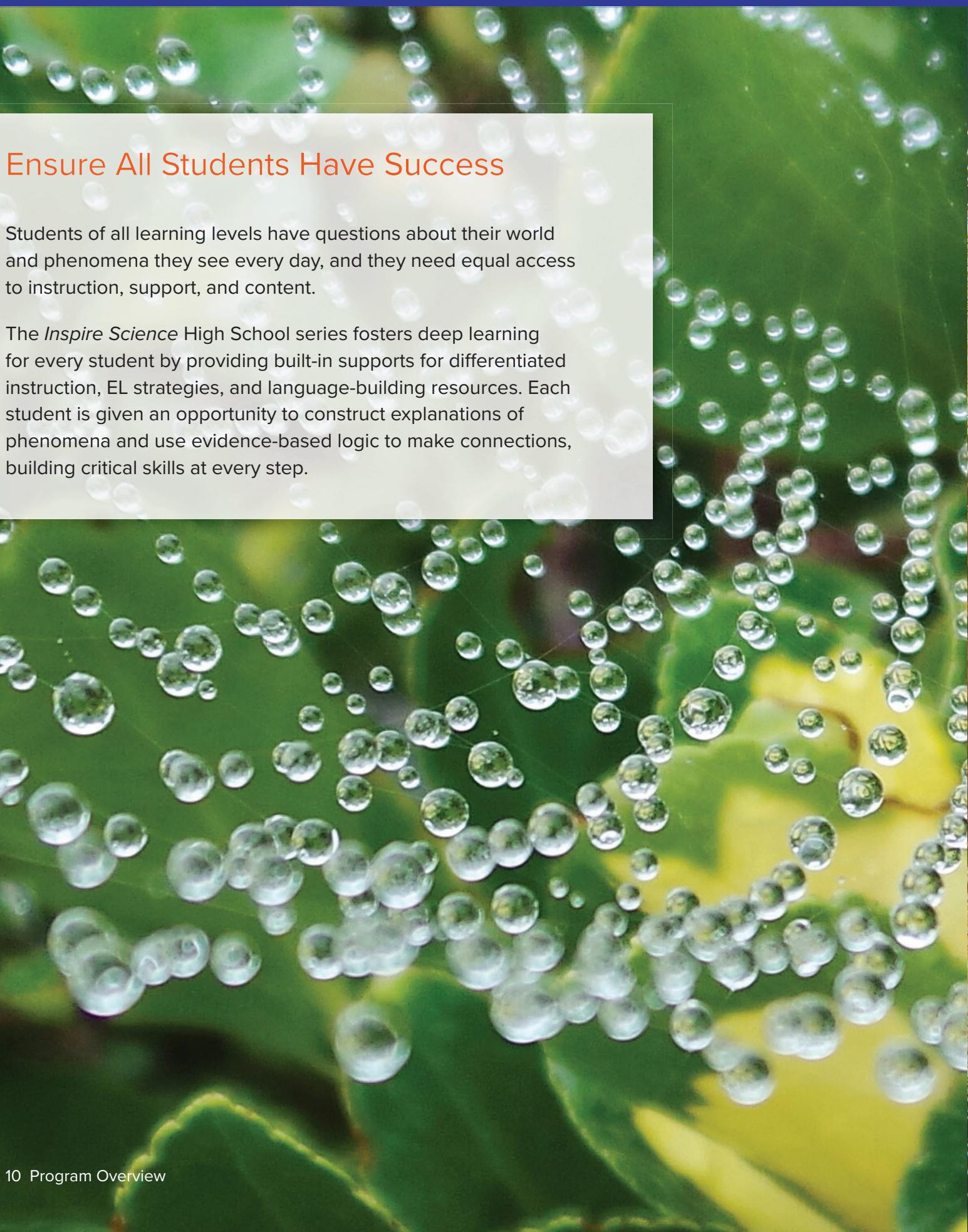
ENCOUNTER THE PHENOMENON

How Does the *Inspire Science* High School Series Make the Increase in Inquiry-Based, Hands-On Activities Easier for Educators?

Let's look at some of the ways the *Inspire Science* High School series will help you look forward to more hands-on learning.

Lift & Learn

Universal Access



Ensure All Students Have Success

Students of all learning levels have questions about their world and phenomena they see every day, and they need equal access to instruction, support, and content.

The *Inspire Science* High School series fosters deep learning for every student by providing built-in supports for differentiated instruction, EL strategies, and language-building resources. Each student is given an opportunity to construct explanations of phenomena and use evidence-based logic to make connections, building critical skills at every step.



Phenomena-Driven Learning

Inspire Science High School series places natural phenomena at center stage within each unit, module, and lesson. By introducing an anchoring phenomenon in each unit, supported by module-level investigative phenomena, students dig deep into key science and engineering concepts.

ENCOUNTER THE PHENOMENON

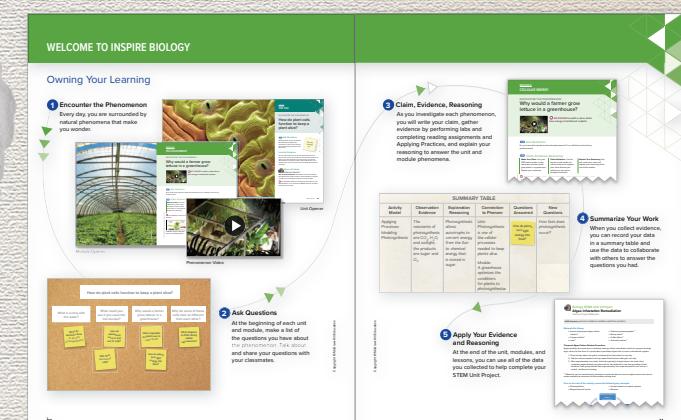


Driving Question Board & Summary Table

The Driving Question Board (DQB) and Summary Table are a great way to foster inquiry in the classroom and encourage students to take charge of their learning.

Students will:

- Ask and answer questions.
- Gather evidence.
- Explain reasoning.
- Describe the phenomena connection.
- Identify answered questions.



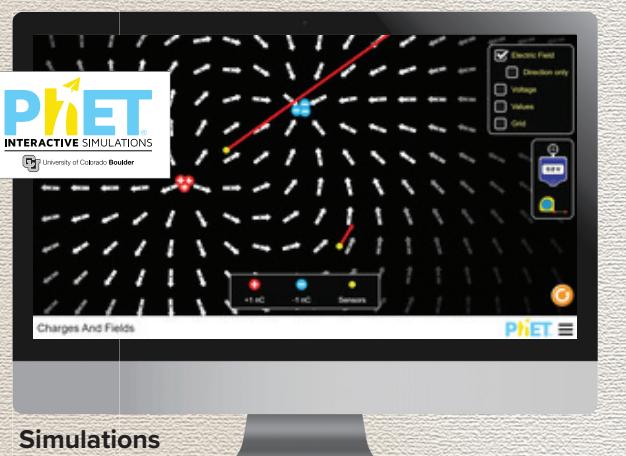
Student-Led, Collaborative Learning

The more involved, the more engaged. With *Inspire Science* High School series, students take a leadership role in their learning experience and develop teamwork and ideation skills through deep collaboration with their classmates at many points during each module and lesson.



Inquiry-Based Approach

Inquiry-driven learning helps students understand how to ask deeper questions and think critically as they answer science questions and design creative solutions to real-world problems. With *Inspire Science* High School series, students learn how to become great investigators through a variety of inquiry activities that connect to the Science and Engineering Practices.



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ENCOUNTER THE PHENOMENON

How Will *Inspire Science* High School Series Keep My Students Engaged?

Take a closer look at some of the features in the *Inspire Science* High School series that support deeper investigation, better engagement, and greater understanding.

Lift & Learn

Hands-On Support



Enjoy the Increase in Inquiry-Based Hands-On Activities

New standards require a marked increase in inquiry-based learning, resulting in more hands-on activities. This shift makes for a more exciting classroom experience, but it also comes with new logistical challenges that can be difficult to manage. With the *Inspire Science* High School series, we've provided a number of support structures to help make this shift more manageable and more fun for you and your students.

Online Resource Planner

The *Inspire Science* High School series Online Resource Planners make preparing easier than ever—listing out all module resources with suggested pacing to clearly identify what resources are available in each module and lesson.

Online Resources Planner		Module			
		Launch	1	2	3
Module Resources					Module Close
INSTRUCTIONAL RESOURCES					
Student Edition	•	•	•	•	•
Teacher Edition	•	•	•	•	•
Teacher Presentation (PowerPoint)	•	•	•	•	•
Science Notebook	•	•	•	•	•
Reading Essentials	•	•	•	•	•
LearnSmart	•	•	•	•	•
Math Handbook	•	•	•	•	•
SCIENCE & ENGINEERING PRACTICE HANDBOOK					
LABS, INVESTIGATIONS, AND PROJECTS					
Launch Lab	•				
Quick Investigation					
Labs		•			
PBL/ Applying Practices			•	•	
ASSESSMENT					
Module Pre-Test	•				
Lesson Test		•	•	•	
Module Vocabulary Practice					
Module Test					•
MEDIA & OR					
Virtual Investigation					
Personal Tutor					
PhET Simulation					
Beyond the Classroom: Google Expedition					
SprintLab					
Suggested Pacing (min)		Module Launch	1	2	3
Teacher-Facilitated Pathway		45	100	100	90
					45

Module 2 • Principles of Ecology 228

Beyond the Classroom

The *Inspire Science* High School series provides an engaging experience: Beyond the Classroom. Beyond the Classroom provides a hands-on approach to learning with before-, during-, and after-expedition activities.

Inspire Science 3D App

The Inspire Science 3D application allows students to explore natural phenomenon and in-depth scientific topics through the wonders of augmented/virtual reality and provides them with the opportunity to engage with more than just a two-dimensional image on a page.



Engaging Inquiry Activities With Options

Every unit in the *Inspire Science* High School series offers multiple inquiry-based activities, along with techniques that scientists and engineers use in the real world. These inquiry activities include differentiation strategies and various pacing options ranging from simple investigations to complex lab explorations.

