Mc Graw Hill

Virginia Inspire Science



SPARK CURIOSITY

9–12 Program Overview



Develop Students to Become Critical Thinkers and Problem Solvers

High school students have a wealth of new experiences competing for their attention, which can lead to challenges with learning engagement. Fully aligned to Virginia's Science Standards of Learning (SOLs), *Virginia Inspire Science* ©2027 sparks curiosity and empowers students to explore, question, and discover. When fueled by curiosity, students look to the world around them through the investigation of real-world phenomena in interesting, innovative, and hands-on ways. A new generation of innovators is ready to take on today's challenges to become tomorrow's scientists.

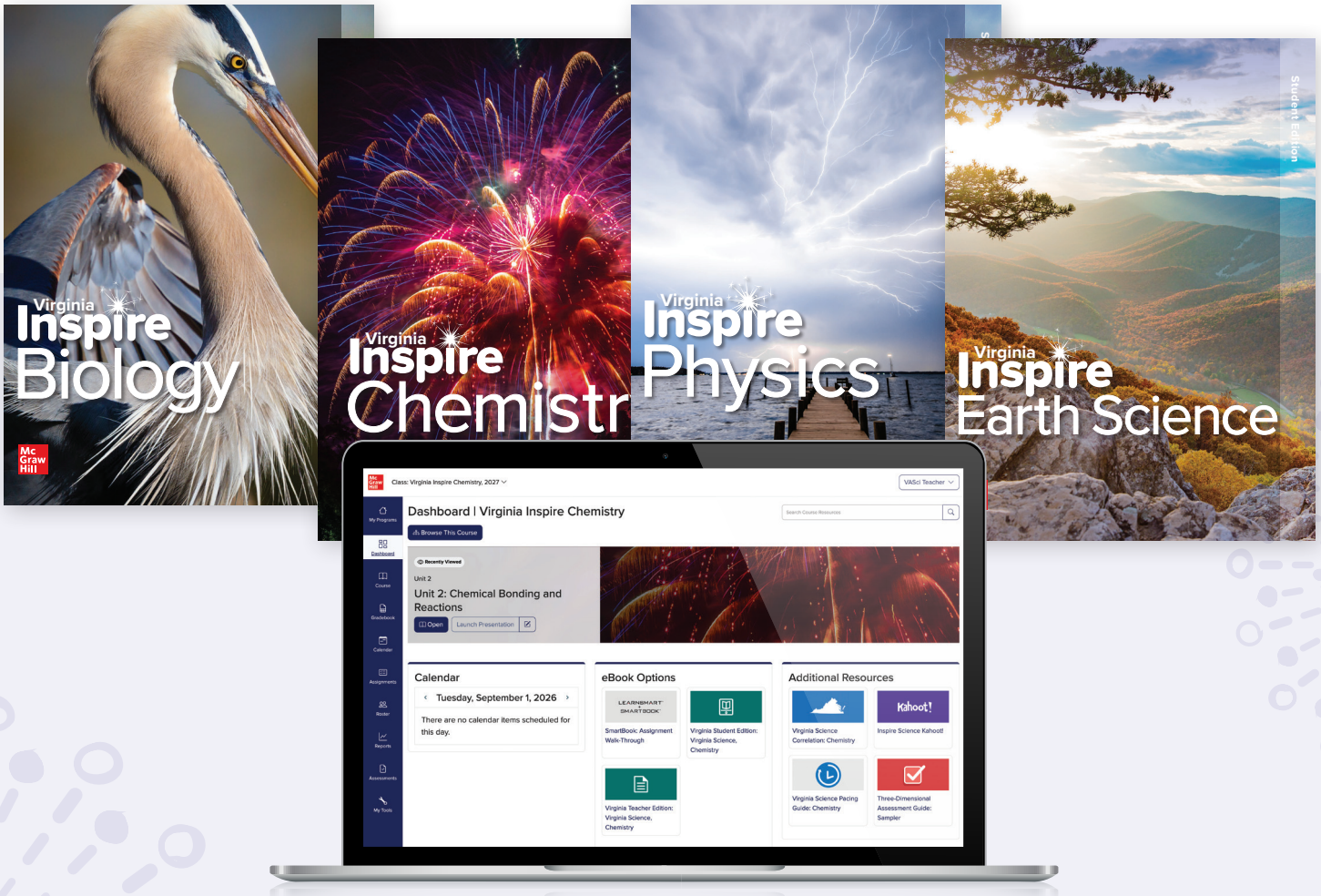
Bring Science to Life in Your Classroom

Engaging, Flexible, Cross-Curricular Learning

Virginia Inspire Science is designed to support phenomena-based, three-dimensional learning, empowering students to explore, ask questions, and think critically. With foundational science knowledge and essential problem-solving skills, students are prepared to thrive in an ever-evolving world. The three dimensions of science learning are intentionally connected throughout the curriculum, helping teachers engage students in Scientific and Engineering Practices (SEP), Disciplinary Core Ideas (DCI), and Crosscutting Concepts (CCC).



Student eBook and assignments can be accessed from anywhere on a mobile device using the McGraw Hill K–12 Portal App!

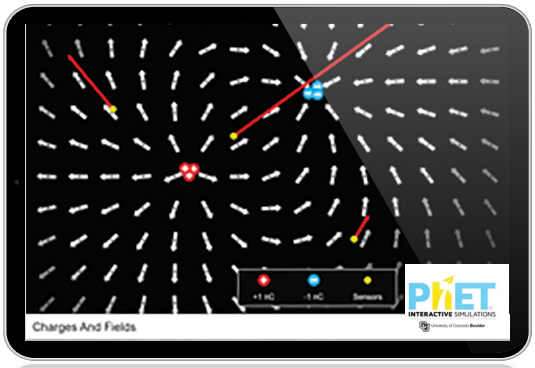


Empower Students with Inquiry-Based Learning

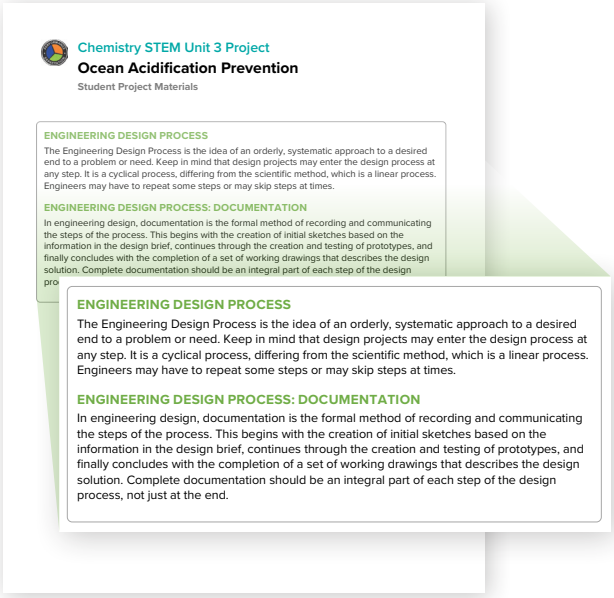
Investigate questions and solve problems from a variety of angles. Inquiry-driven instruction gives students the practice they need to succeed in developing solutions to whatever challenges they may encounter.

Types of Inquiry Activities

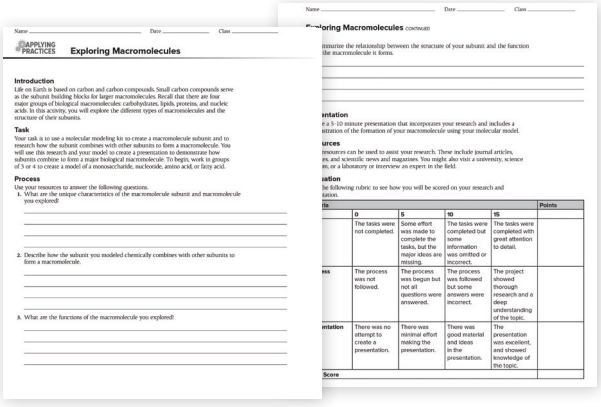
Each course in the High School Series of *Virginia Inspire Science* includes inquiry that builds beyond hands-on activities. With *Virginia Inspire Science*, students will investigate phenomena through several techniques reflective of the way science and engineering are done in the real world.



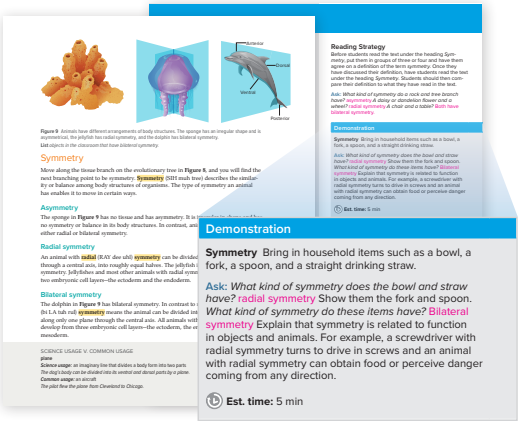
Simulations



Engineering



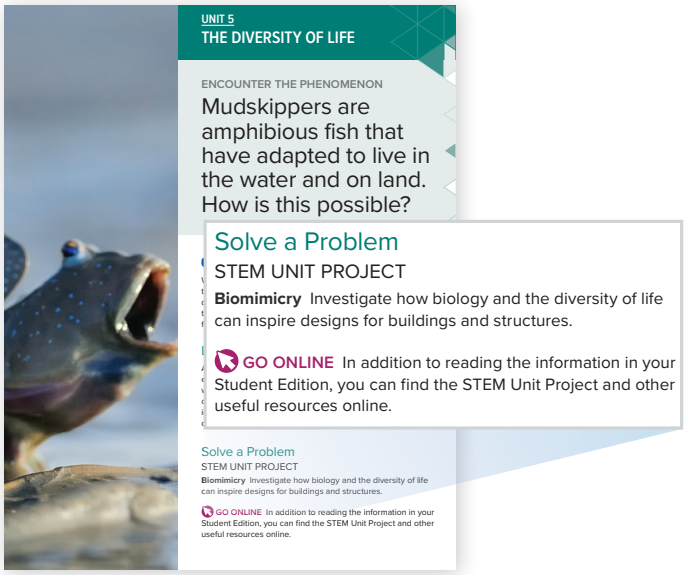
Research

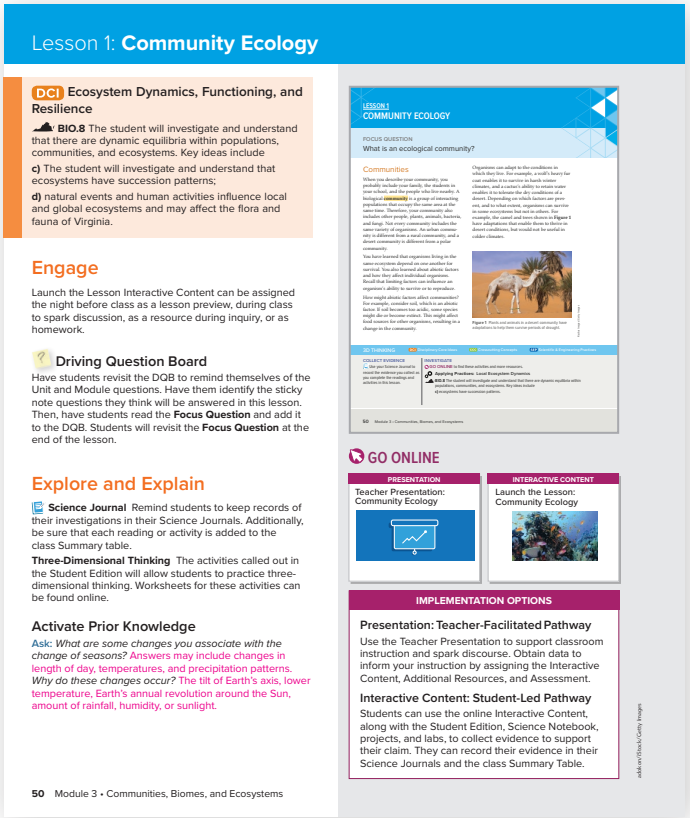


Demonstrations & Hands-on Activities

Driving Question Board

The Driving Question Board fosters inquiry in the classroom and encourages students to take charge of their learning. Students ask and answer questions throughout the unit, module, and lesson that support the unit anchoring phenomenon question and the module investigate the phenomena question.





STEM Unit Project

Students assume the role of a scientist or engineer and are charged with the task of designing a solution in the STEM Unit Project. Each project relates to a specific standard correlating to the unit.

Flexible Inquiry Options

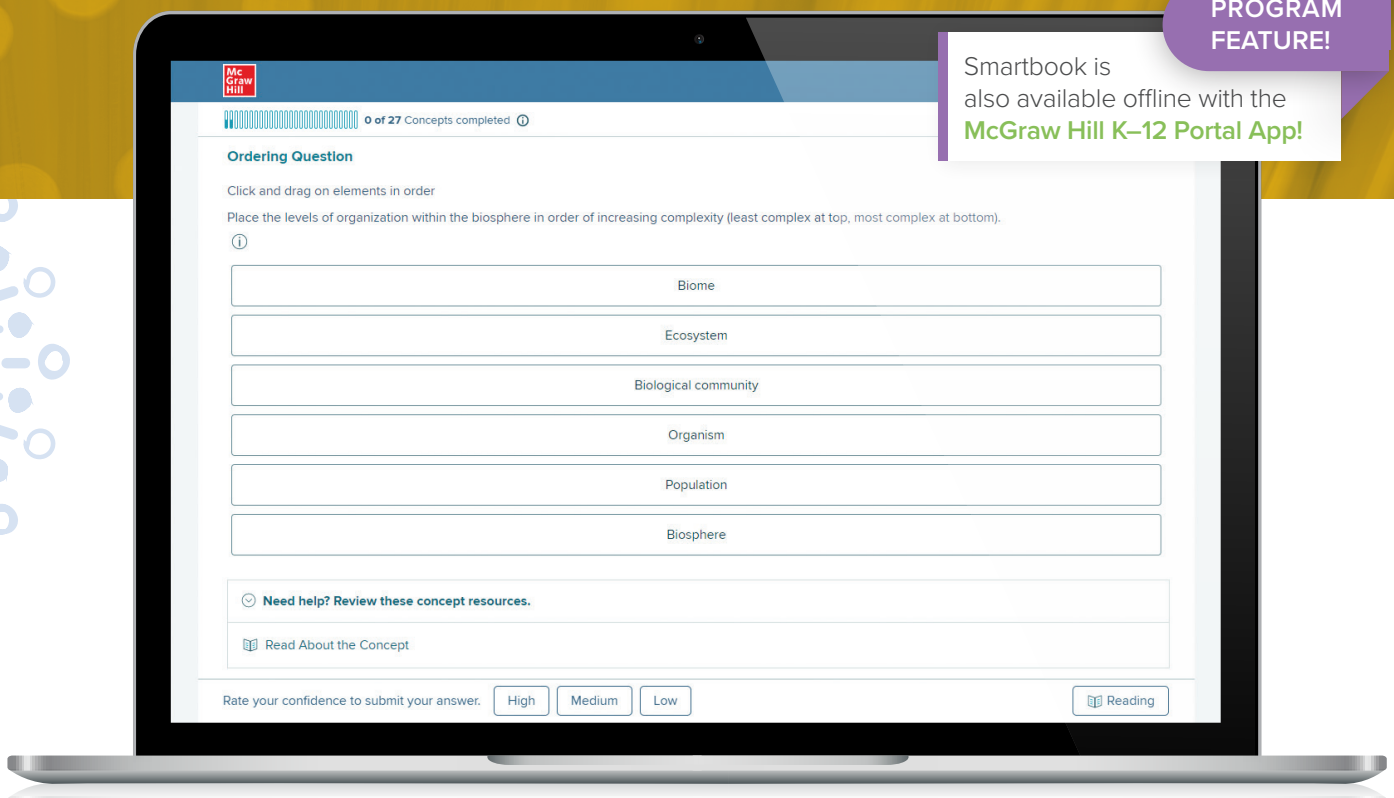
Not all inquiry activities are the same. Depending upon the available time and student readiness, structured inquiry might be perfect, or your class may be ready for open inquiry. The *Virginia Inspire Science* Inquiry Spectrum provides flexible options to adjust the inquiry level to align with the learning needs of each student.



Adaptive Learning with *SmartBook*®

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.

The secret is ***SmartBook***, the first and only adaptive reading experience designed to change the way students read and learn. As the student progresses, *SmartBook* highlights the most impactful concepts the student needs to learn. When *SmartBook* detects what a student is most likely to forget, that content is presented for review to improve the student's knowledge retention.

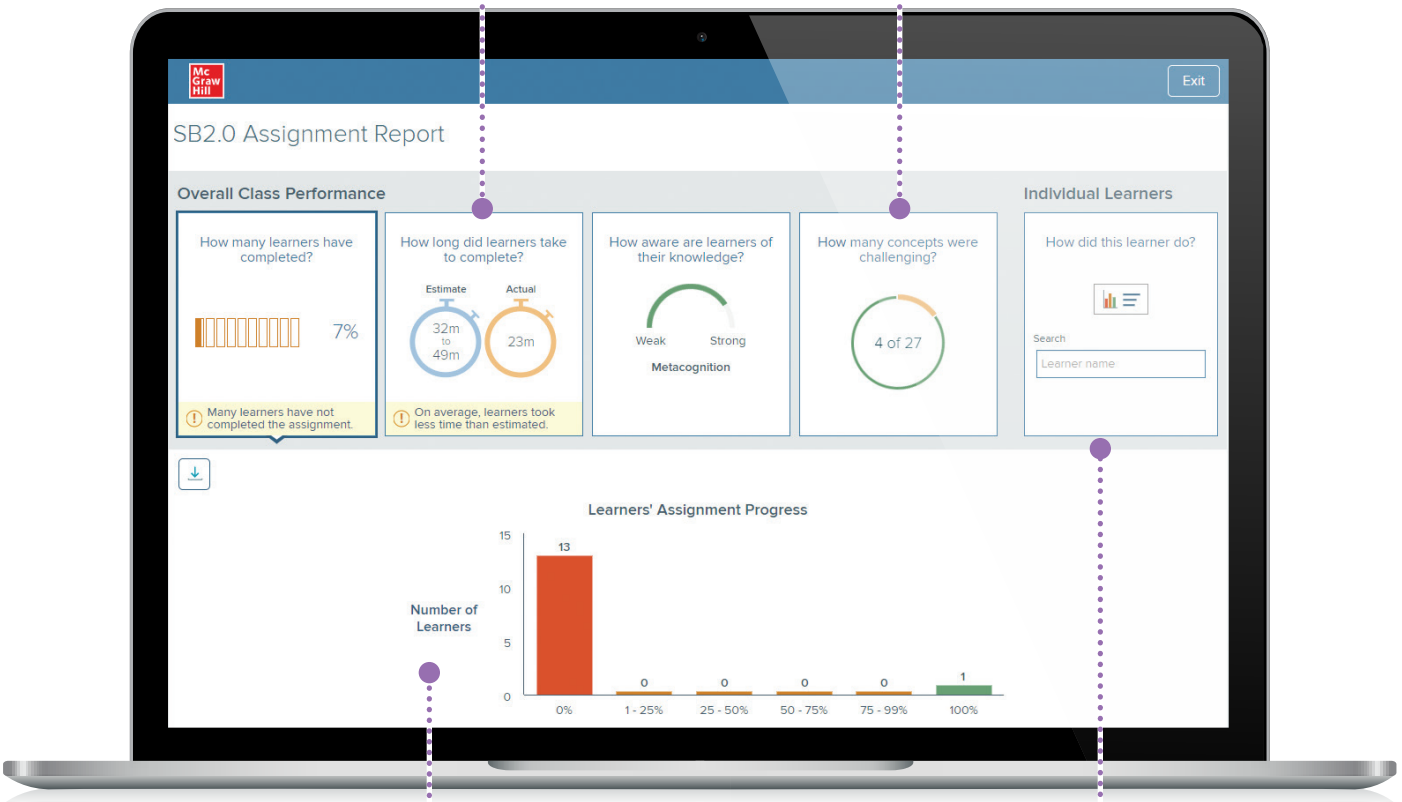


Real-Time Reporting Tools

Find efficiencies by managing and tracking individual student progress and the progress of the whole class. Teachers can focus on what students don't understand or still need to learn, rather than what they've already mastered.

See the duration students take to complete the assignment compared to the estimate.

Challenging concepts are revealed as students wrap up assignments, giving teachers the chance to reinforce topics before the next lesson.



Track progress on the assignment as students work through the questions.

Break down reporting to the individual student level.

Support Every Learner

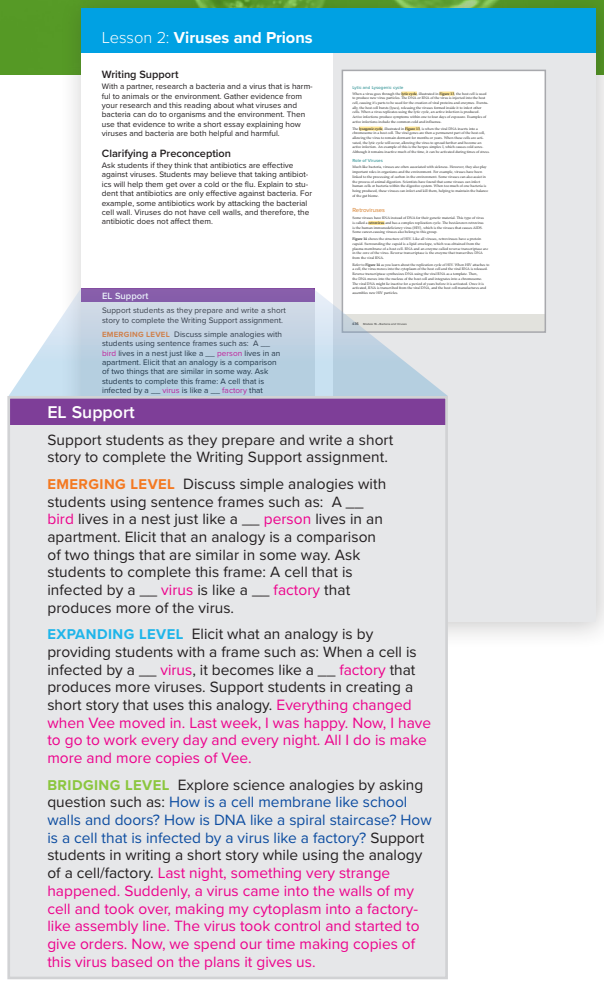
Virginia Inspire Science incorporates the research-based Universal Design For Learning Principles to ensure that all students have access to a rigorous curriculum. Support with practical strategies is found at the module and lesson level at multiple points.

Differentiated Instruction

Robust differentiation support, including guiding questions for different student levels, as well as differentiation guidance, is found in the Teacher's Edition. Module and lesson level practice strategies are also found at multiple points.

Supporting All Language Learners

Incorporating proven instructional practices for teaching English Learners (ELs), *Virginia Inspire Science* embeds scaffolded activities into every module and lesson.


Lesson 2: **Viruses and Prions**

Writing Support
With a partner, research a bacteria and a virus that is harmful to animals or the environment. Gather evidence from your research and this reading about what viruses and bacteria can do to organisms and the environment. Then use that evidence to write a short essay explaining how viruses and bacteria are both helpful and harmful.

Clarifying a Preconception
Ask students if they think that antibiotics are effective against viruses. Students may believe that taking antibiotics will help them get over a cold or the flu. Explain to student that antibiotics are only effective against bacteria. For example, some antibiotics work by attacking the bacterial cell wall. Viruses do not have cell walls, and therefore, the antibiotic does not affect them.

EL Support

Support students as they prepare and write a short story to complete the Writing Support assignment.

EMERGING LEVEL Discuss simple analogies with students using sentence frames such as: A __ bird lives in a nest just like a __ person lives in an apartment. Elicit that an analogy is a comparison of two things that are similar in some way. Ask students to complete this frame: A cell that is infected by a __ virus is like a __ factory that produces more of the virus.

EXPANDING LEVEL Elicit what an analogy is by providing students with a frame such as: When a cell is infected by a __ virus, it becomes like a __ factory that produces more viruses. Support students in creating a short story that uses this analogy. Everything changed when Vee moved in. Last week, I was happy. Now, I have to go to work every day and every night. All I do is make more and more copies of Vee.

BRIDGING LEVEL Explore science analogies by asking question such as: How is a cell membrane like school walls and doors? How is DNA like a spiral staircase? How is a cell that is infected by a virus like a factory? Support students in writing a short story while using the analogy of a cell/factory. Last night, something very strange happened. Suddenly, a virus came into the walls of my cell and took over, making my cytoplasm into a factory-like assembly line. The virus took control and started to give orders. Now, we spend our time making copies of this virus based on the plans it gives us.

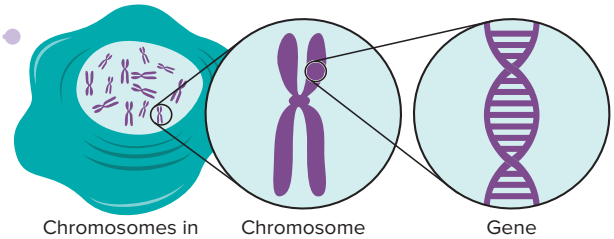
Supporting Reading Comprehension in Science

Inspire Science empowers all students to succeed in science—no matter their starting point. The Science Reading Essentials provide reading and writing support for students in need of extra help, including content written two Lexile levels lower than the on-level content, and teacher tips to provide ample student support.

Tips and questions throughout the margins of the lesson provide support for students at point of use.

Reading Essentials include visual supports to enhance learning for all types of students.

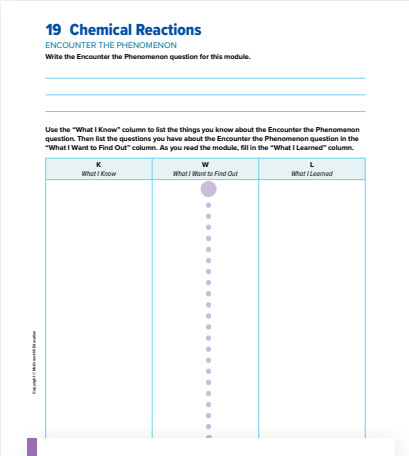
contains chromosomes from both parents. These exist as pairs, one chromosome from each parent.



TIP Note that the lines to the chromosome show that this is one of many chromosomes in the nucleus of a cell. The lines to the gene show that a gene is part of a chromosome.

Science Note-Taking Support

Note-taking is vital to success in the science classroom. The digital Science Notebook ensures they are writing down and keeping track of the important vocabulary, new ideas, and all of the progress along the way.



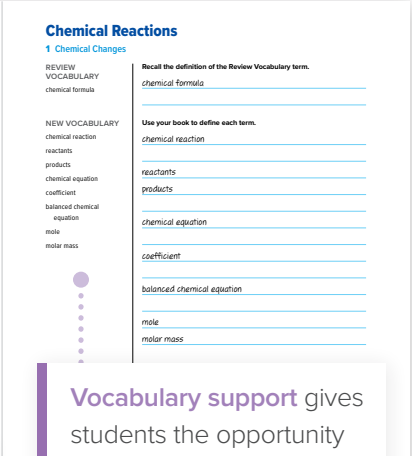
19 Chemical Reactions

ENCOUNTER THE PHENOMENON

Write the Encounter the Phenomenon question for this module.

Use the "What I Know" column to list the things you know about the Encounter the Phenomenon question. Then list the questions you have about the Encounter the Phenomenon question in the "What I Want to Find Out" column. As you read the module, fill in the "What I Learned" column.

K *What I Know*	W *What I Want to Find Out*	L *What I Learned*



Chemical Reactions

1 Chemical Changes

REVIEW VOCABULARY
chemical formula

NEW VOCABULARY
chemical reaction
reactants
products
chemical equation
coefficient
balanced chemical equation
mole
molar mass

Recall the definition of the Review Vocabulary term.

chemical formula

Use your book to define each term.

chemical reaction

reactants

products

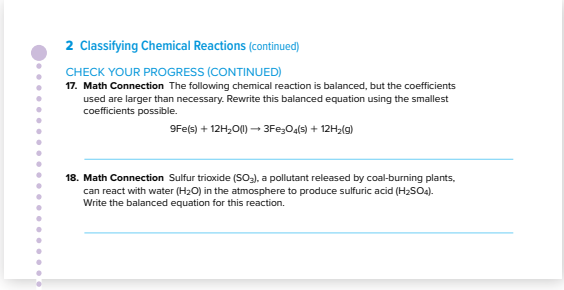
chemical equation

coefficient

balanced chemical equation

mole

molar mass



2 Classifying Chemical Reactions (continued)

CHECK YOUR PROGRESS (CONTINUED)

17. Math Connection The following chemical reaction is balanced, but the coefficients used are larger than necessary. Rewrite this balanced equation using the smallest coefficients possible.

$$9Fe(s) + 12H_2O(l) \rightarrow 3Fe_3O_4(s) + 12H_2(g)$$

18. Math Connection Sulfur trioxide (SO_3), a pollutant released by coal-burning plants, can react with water (H_2O) in the atmosphere to produce sulfuric acid (H_2SO_4). Write the balanced equation for this reaction.

Every module starts out with a **KWL chart** tied to the new module phenomena.

Vocabulary support gives students the opportunity to find the new words in the text and write the definitions themselves.

Check Your Progress asks questions reflecting on the new content covered in the lesson.

Fuel Student Engagement Using the World Around Them

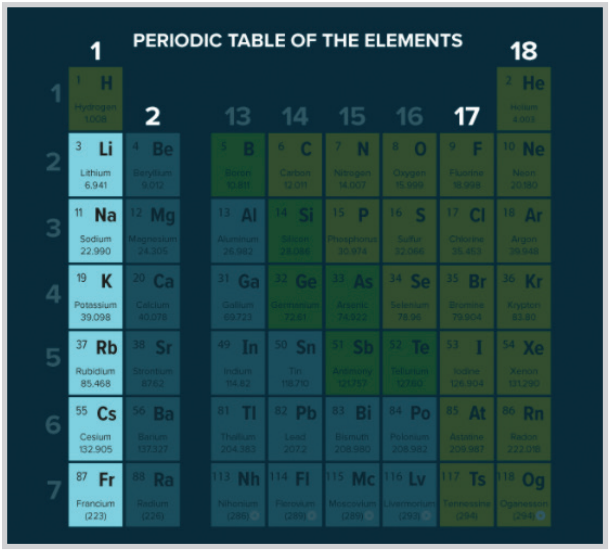
Virginia Inspire Science transports students beyond the walls of the classroom with cutting-edge digital content, including interactives, simulations, videos, and more.

Student Advantages

Simulations

Simulations offer a chance to experience real-life scenarios that depict true events. These tools improve learning and create safe and engaging learning environments where failure is possible, something that is often missed when students are learning.



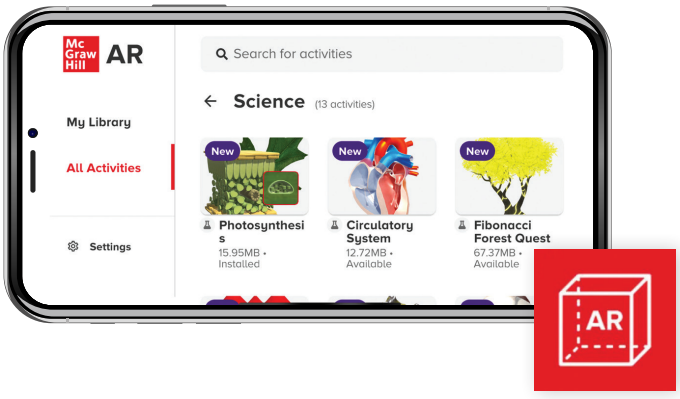


Poptips Plus

Poptips Plus is an interactive tool with a single image or an array of text and images with markers that define clickable hot spots. This engaging resource allows students to interact with images and connect them to related information to support understanding of core content.

McGraw Hill AR App

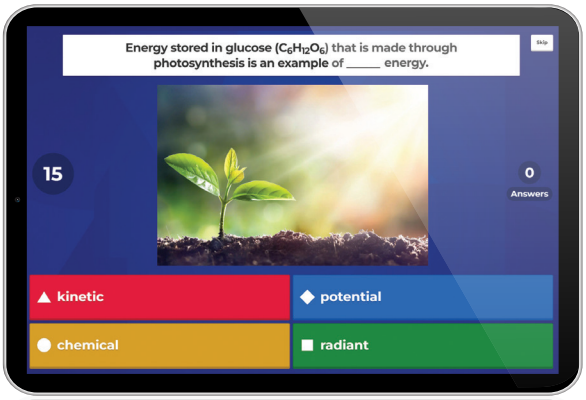
This award-winning app brings learning to life through bite-sized, multisensory activities that promote deep, conceptual learning. The app leverages augmented reality to gamify challenging and abstract concepts, helping students learn through play.





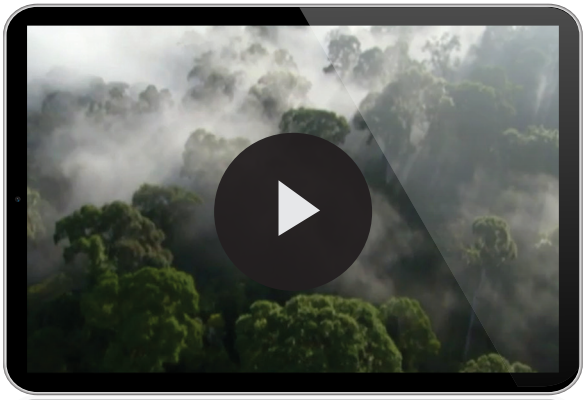
Interactive Text

Engage students in online literacy learning with tools like text to speech, note-taking, and text highlightling. Interacting with learning creates a dynamic experience that's more engaging and will improve student learning and retention.



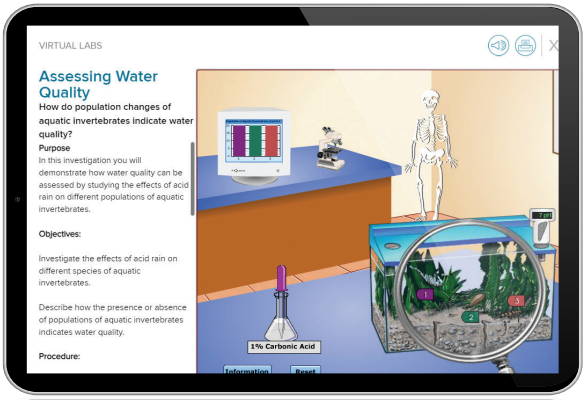
Kahoot!

Help students review important material in an engaging way with fun, game-show-like quizzes using Kahoot!



Videos

Enhance teaching and learning with videos that reinforce concepts and spark discussion. Videos encourage students to hone their analytical skills by analyzing media using the theories and concepts they are studying while experiencing worlds beyond their own.



Virtual Investigations

Extend experiments beyond the classroom setting. With Virtual Lab, students have an engaging, alternative, digital interaction to explore an experiment.

Assessment Strategies

Virginia Inspire Science includes a variety of assessment options aligned and tagged to Virginia's Science SOLs, to use before, during, and after each lesson and module, supporting teachers with differentiation strategies as students progress through their learning journey to mastery of the Virginia's Science SOLs.

Formative Assessment

Formative assessment—embedded at many points throughout each module and lesson—facilitates student reflection on their thinking (metacognition) and allows teachers to dynamically differentiate instruction. The table shows the types of formative assessment resources in *Virginia Inspire Science* found online and in print.

FEATURE	INSTRUCTIONAL PURPOSE
Science Probes	Found at the beginning of each unit, Science Probes reveal student preconceptionsto guide instruction.
Claim-Evidence-Reasoning	With the CER Framework (Claim, Evidence, Reasoning), found in all lessons, students will make claims and document their reasoning during the Explore phase and add evidence and adjust their claims as needed later in the lesson.
Three-Dimensional Thinking Questions	Students will encounter questions that address at least two of the three dimensions.
Applying Practices	Within each lesson, you will find Applying Practices Projects to help students apply the Scientific and Engineering Practices and build an understanding of the Virginia Science SOLs so that they can complete each STEM Unit Project.

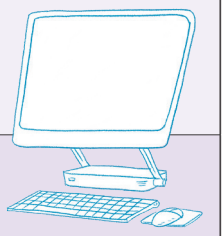


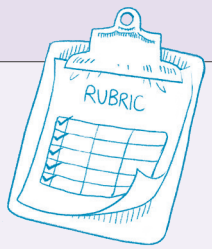
Summative Assessment

Ensure lasting learning and alignment of student skills to the Virginia's Science SOLs with the following summative assessment tools found in *Virginia Inspire Science* in print Student Editions and online.

FEATURE	INSTRUCTIONAL PURPOSE
Module Pretest	The Module Pretests, found at the beginning of each module, assess prerequisite knowledge of Virginia SOLs Ideas from prior grades to evaluate student readiness for the module.
Three-Dimensional Thinking Questions	At the end of the lessons, students will demonstrate their understanding of at least two of the three dimensions to develop three-dimensional thinking skills.
Lesson Check	Found in every lesson online, Lesson Checks determine how students are progressing toward a mastery of Virginia's Science SOLs.
Module Test	Found at the end of each module online, Module Tests evaluate student proficiency against the performance of the module with multiple choice, extended response, constructed response, and performance-task items.
STEM Unit Project	With each STEM Module Project, found at the end of each module, students will complete performance-based rubrics and answer summative questions to demonstrate how they've applied their knowledge and understanding of the Virginia's Science SOLs to their project.
Module Vocabulary Practice	Through online interactives, students practice and check their understanding of scientific language. Immediate feedback from the system provided.

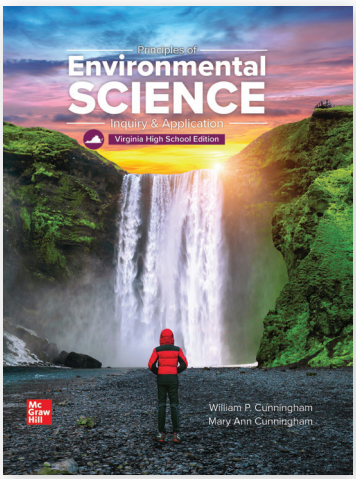






Principles of Environmental Science: Inquiry & Application

Virginia Edition ©2026, 1e, Cunningham



Current and Applied Approach for Virginia High Schools

Crafted specifically for a high school Environmental Science course, *Principles of Environmental Science: Inquiry and Application, Virginia Edition* is true to its title with an up-to-date, introductory view of the essential themes of the course and numerous opportunities for students to practice scientific thinking and active learning. Accessible pedagogical tools lead students to apply science and engineering practices, work with real-world data, and better understand environmental science and all of its complexities.

Presented in a single column format for optimal readability and organized into four logical units, this feature-rich program is thoroughly aligned to Virginia standards and designed to support student success.

Actively Learn™

Actively Learn is a powerful digital platform that engages every student with curated, subject-specific lessons and sources. Teachers have access to a vast catalog of diverse content with embedded student supports to drive deeper critical thinking and peer collaboration. *Actively Learn Science* includes current event science articles, additional interactives, simulations, and videos that cover a wide range of core science topics.

mheducation.com/ActivelyLearnScience

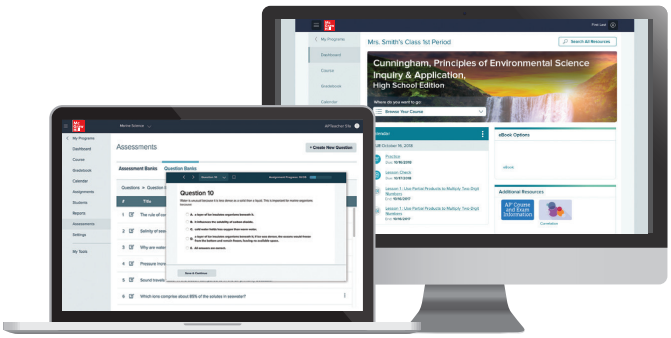
Accessible, Aligned, and Robust Instruction

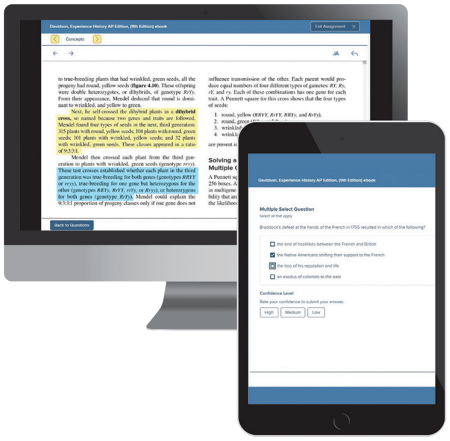
- **Unit Projects, Case Studies, Data Analysis Labs,** and **Use the Practice** activities apply engineering practices to real-world issues related to the field of study, including two Case Studies in Chapters 6 and 7 focusing specifically on Virginia topics.
- Chapter 7 **Key Concepts** and Chapter 13 **What Do You Think** are specific to Virginia standards.
- The **Claim, Evidence, Reasoning** boxes prompt students to develop and research their own claim to enhance investigation and reasoning skills.
- **Math Connection** provides opportunities to practice quantitative and computational thinking skills, while Data Analysis Labs support data literacy.
- Realistic, three-dimensional, and instructional figures provide depth and orientation to complex structures and processes.
- The **Lab Manual** brings environmental science to life through hands-on activities and inquiry-based labs.
- The **High School Teacher Manual,** available in print and online, includes integrated lesson plans aligned with the 5E teaching model and correlated to Virginia state standards and a standards correlation chart demonstrating alignment between course content and the Virginia science and engineering practices.

Personalized, Adaptive, and Dynamic Digital Resources

Principles of Environmental Science: Inquiry and Application Virginia Edition is enriched with multimedia content that enhances the teaching and learning experience both inside and outside of the classroom, including:

- Interactive eBook and adaptive *SmartBook®* assignments
- Google Earth activities
- Graphing and mapping activities
- Customizable, auto-graded test banks
- *Actively Learn*
- Guided, inquiry-based virtual labs





Personalized. Productive. Prepared.

SmartBook® delivers personalized, adaptive learning tailored to each student's individual needs by pinpointing knowledge gaps and focusing instruction on the concepts that require additional study. Teachers can assign a specific chapter, topic, or concept and access advanced reporting features that track individual and class progress with actionable insights to inform in-class instruction.

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UNIT 1: STUDYING THE ENVIRONMENT

Chapter 1 Nature of Science
Chapter 2 Understanding Our Environment

UNIT 2: ECOLOGY AND THE NATURAL WORLD

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Chapter 4 Evolution, Species Interactions, and Biological Communities
Chapter 5 Population Dynamics
Chapter 6 Biomes and Biodiversity

UNIT 3: RESOURCES FROM AIR, WATER, AND LAND

Chapter 7 Climate
Chapter 8 Air Pollution
Chapter 9 Water: Resources and Pollution
Chapter 10 Land Use
Chapter 11 Food and Agriculture
Chapter 12 Environmental Geology and Earth-Resources
Chapter 13 Energy

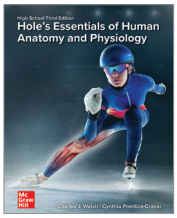
UNIT 4: SUSTAINABILITY AND ENVIRONMENTAL POLICY

Chapter 14 Environmental Health and Toxicology
Chapter 15 Solid and Hazardous Waste
Chapter 16 Economics and Urbanization
Chapter 17 Environmental Policy and Sustainability

Science Electives and Advanced Placement

Stay on Track to College and Career Readiness

Find the right solutions to ensure students develop the academic and real-world skills and knowledge they need to make the successful transition from high school to college and/or into the workforce. Provide meaningful experiences with purposeful lessons, extensive practice, and a variety of opportunities for concept mastery to lead them to success in college and beyond.

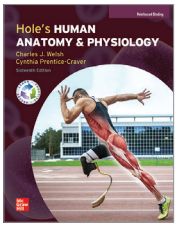


Hole's Essentials of Human Anatomy & Physiology

©2026, 3e, Welsh

An Incisive, Engaging Introduction to Human Anatomy

Hole's Essentials of Human Anatomy and Physiology is widely respected for its engaging visual design, robust array of labs and activities, and real-world career connections. Scaffolded instruction for vocabulary support, streamlined labs, projects, and activities offer flexibility for diverse student populations and instructional schedules. The student-friendly text delivers an approachable learning experience and the vast array of application opportunities bring the content to life.

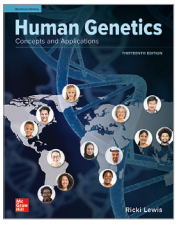


Hole's Human Anatomy & Physiology

©2022, 16e, Welsh

Complete Coverage for Anatomy & Physiology

A market leader for 40 years, *Hole's Human Anatomy & Physiology* delivers a comprehensive, in-depth exploration of anatomy and physiology while placing emphasis on the fundamentals for students with little-to-no prior knowledge. The proven Learn, Practice, Assess learning system ensures student understanding, application, and mastery of complex concepts. This new edition includes APR, the ultimate dissection experience that visually enriches your lectures and labs with 3D interactive models, engaging animations, and real-life images.

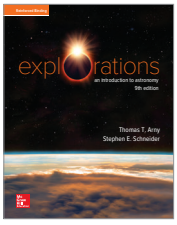


Human Genetics: Concepts and Applications

©2021, 13e, Lewis

Explore the Science of Human Genetics

Illuminate the principles and concepts of the once obscure science of genetics with *Human Genetics: Concepts and Applications*. The 13th edition explores new technologies and the evolution of genetics reflecting the study of genomic variation and heredity in organisms as the basis for medical science.



Explorations: Introduction to Astronomy

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Approachable, Exciting, and Ideal for Introductory Courses

Explorations: An Introduction to Astronomy focuses on the latest results and analysis of the exoplanets based on Kepler. This rapidly expanding subject with exciting new results provides a growing understanding of planetary systems and the many aspects of the solar system.

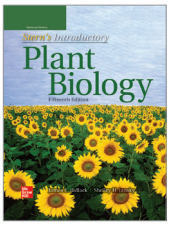


Marine Science

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An Interconnected, Global Perspective of the World Ocean

Marine Science is beloved for its full coverage of oceanography, stunning design, student-friendly learning system, and data analysis labs. Now in its third edition, the program features enhanced readability, dynamic artwork, classroom activities, and an enriched eBook.

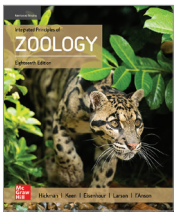


Stern's Introductory Plant Biology

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An Introduction to Plant Biology

Emphasizing current interests while presenting basic botanical principles, *Stern's Introductory Plant Biology* assumes little prior scientific knowledge. Students will be introduced to the new classification of plants and plant-related species. The text also includes an integration of biotechnology into several chapters and boxes addressing ecology, evolution, and molecular biology.

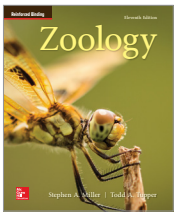


Integrated Principles of Zoology

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The Gold Standard for a Full-Year Course

Emphasizing the central role of evolution, *Integrated Principles of Zoology* describes animal life and the fascinating adaptations that enable animals to inhabit so many ecological niches. This text includes comprehensive coverage of biological and zoological principles, mechanisms of evolution, physiology,and ecology.

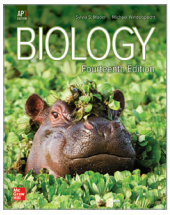


Zoology

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The Perfect Fit for a Half-Year Course

Zoology emphasizes ecological and evolutionary concepts and helps students understand the process of science through elements of chapter organization and boxed readings. Features like Evolutionary Insights and Wildlife Alerts help students truly understand that science is a process, not just a body of facts. The How Do We Know feature highlights research results that provide insight into the process. Students learn how these scientific studies have implications for future discovery.

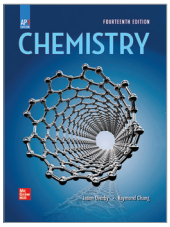


Biology, AP Edition

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Trusted, Accessible Content 100% Aligned for AP Success

Students explore AP Biology through an inquiry-based lens as they discover the unity and interconnected nature of the study of life. *Biology* uses a clear, easy-to-understand writing style to provide students with concise and engaging instruction, practice, and support for AP success. This new edition delivers comprehensive coverage of the AP Biology Curriculum Framework.



Chemistry, AP Edition

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A Traditional Approach with Complete AP Alignment

In lock-step alignment to the AP Chemistry Framework, this program honors the beloved traditional approach as it balances rigorous college-level content with accessible and inspiring instruction designed for today's students. Chang's strong focus on developing problem-solving strategies supports learners at all levels. The AP Teacher Manual includes pacing, activities, test banks, and more. ALEKS for AP Chemistry, available with the digital subscription, gives students more math and chemistry practice with adaptive questioning to personalize the learning.



5 Steps to a 5 | AP Test Prep Guides

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A Tried-and-True System for Students

5 Steps to a 5 helps students build their AP test prep muscle memory all year long through daily engagement with the most up-to-date course content, exam format, subject-specific strategies, and tips for success. More than a guide, the *5 Steps to a 5* system has prepared thousands of students to walk into exam day feeling confident.

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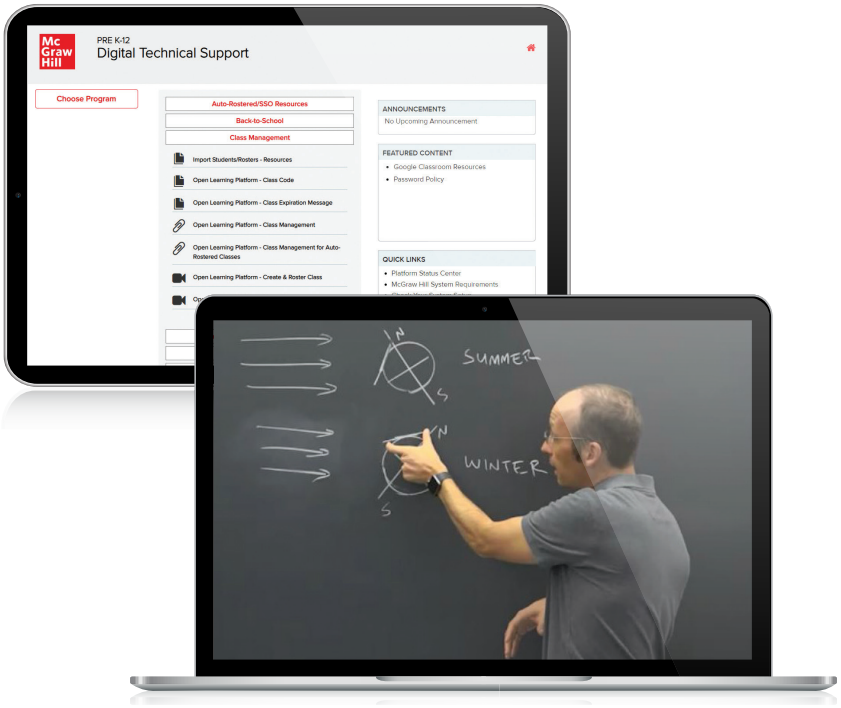
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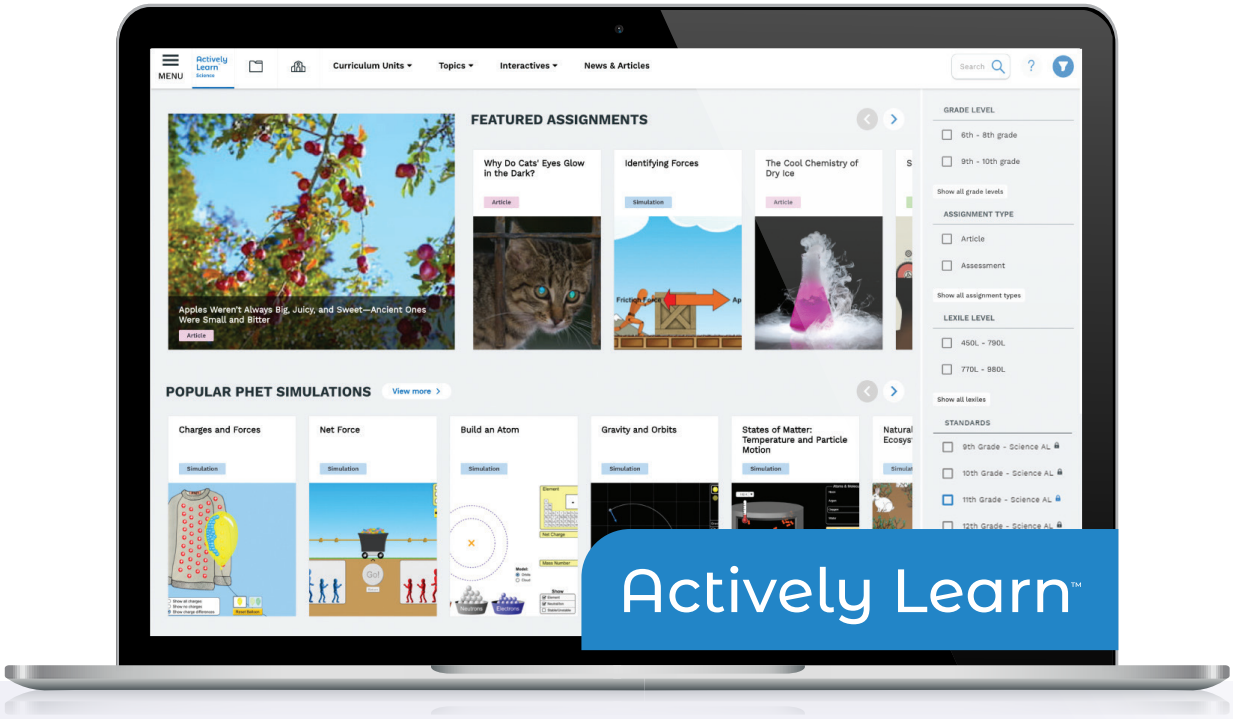
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