

NGSS



Review and Digital Navigation Guide

Welcome to STEMscopes NGSS 3D!

STEMscopes NGSS 3D shifts the paradigm of traditional science instruction to student-centered, phenomena-based STEM learning. Based on the 5E instructional model and designed for the Next Generation Science Standards, STEMscopes NGSS 3D supports diverse learners. Embedded language supports, dedicated interventions and acceleration modules, and in-depth breakdowns in each lesson meet the needs of all students. Be more than a science teacher: be a STEM teacher.

Don't miss out! Log in to explore everything you need to teach STEMscopes NGSS 3D, including our Teacher Toolbox, program instructions, standards alignment, and more.

Visit <https://www.acceleratelearning.com/science/> and request a preview!

The image shows a laptop screen displaying the STEMscopes NGSS 3D website. The website has a blue navigation bar with the following menu items: Home, Planner, Bundles, Scopes, Streaming, Coding, Standards, Students, More, and a search icon with the text 'ngsteacher'. Below the navigation bar, there are tabs for 'All', 'Recently Viewed', 'Bookmarks', and 'My Notes'. The main content area is titled 'Seventh Grade - 3D' and features a 'FILTER' sidebar on the left with options for 'None', 'Save filter', a search bar, and dropdown menus for 'Grades', 'Domains', and 'Bundles'. The main content area displays three featured items: 1) 'STEMscopes NGSS 3D K-12 SCIENCE Teacher Resources and Planning Guide' with a 'Seventh Grade: Teacher Resources and Planning Guide' link and 'Teacher Toolbox' label. 2) '7th Grade Bundle 1: Organisms and Nonliving Things are Made of Atoms' with a circular progress indicator and '7th Grade: Bundle 1: Organisms and Nonliving Things are Made of Atoms' link. 3) 'Competition in Ecosystems' with a photo of two kangaroos and 'Competition in Ecosystems' link. Below these items is a 'STEMscopes Streaming' section with a video player and 'Access STEMscopes Streaming' link. The laptop is overlaid with a blue molecular model on the left and two hot air balloons (one yellow and orange, one orange and yellow) in the foreground. The background of the entire image is a landscape with a sunset sky and a horizon line.



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MEET STEMSCOPES NGSS 3D

WHO WE ARE

Accelerate Learning, Inc. produces STEMscopes™, a comprehensive suite of results-oriented STEM curriculum and professional development solutions used by more than **9 million students** and **600,000 teachers** across all **50 states**. Created by educators for educators, STEMscopes is highly adaptable and affordable, and supports instruction in any kind of learning environment.

MORE THAN DIGITAL

The Accelerate Learning, Inc. team created STEMscopes NGSS 3D to serve teachers and students regardless of their classroom setup or access to technology.

STEMscopes NGSS 3D is a phenomena-driven, comprehensive STEM solution, fully aligned to the Next Generation Science Standards (NGSS). We provide educators with blended, adaptable resources that empower hands-on science learning around meaningful, real-world phenomena. Built by teachers for teachers, our research-based curriculum evolved out of an initiative at Rice University, a nationally recognized institution, to develop and support STEM initiatives for advanced STEM education.

OUR SOLUTION

- Hands-on, collaborative experiences using the 5E+IA lesson model
- A wealth of applicable real-world phenomena using SEPs, DCIs, and CCCs
- Adaptations for any teaching style, whether you're a new or veteran teacher
- Resources in both English and Spanish to support multilingual learners

ACCOLADES & CONNECTIONS

Accelerate Learning's STEM solutions earned awards in three categories of the 2022 Educators Pick Best of STEM Awards. The Educators Pick Best of STEM Awards is the only program created for educators and judged by a qualified panel of STEM educators.

The 21st annual American Business Awards honored Accelerate Learning, Inc. with two Stevie Awards in the Education category group. STEMscopes Science captured the top prize, the Gold Stevie Award, in the Science Instructional Solution category. Judges in ABA's Science Instructional Solution category stated,

“STEMscopes Science shows a commitment to effective learning and continuous improvement and has amazing efficacy results and improvement in passing rates.”

6TH GRADE STORYLINES

	BUNDLES & EST. TIME	ANCHORING PHENOMENA	STORYLINE	SCOPES	PEs
BUNDLE 1	SYSTEMS AND SUBSYSTEMS IN EARTH AND LIFE SCIENCE 8 WEEKS	How can models of systems help determine similarities and differences between Earth systems and living systems?	Students learn that a system is a group of component parts that interact in predictable ways, such as the parts of cells, tissues, organs, and organ systems that interact with one another to keep an organism alive. Students then contrast the human body's systems with Earth's systems, revealing that all systems involve the flow of energy and cycling of matter.	Cells Anatomy of a Cell Bodies & Systems The Water Cycle Influences of Weather & Climate	MS-LS1-1 MS-LS1-2 MS-LS1-3 MS-ESS2-4 MS-ESS2-6
BUNDLE 2	EARTH SYSTEM INTERACTIONS CAUSE WEATHER 8 WEEKS	How can models of thermal energy transfer help us understand the different kinds of weather in California?	Students study the movement of water and flow of energy between Earth's subsystems, and how these interactions determine weather patterns and climate conditions. Students learn about kinetic energy and thermodynamics, developing their understanding of how temperature changes (caused by energy transfer) affect matter at the molecular level.	Ocean Currents Thermal Energy Transfer Kinetic Energy Energy Transfer & Temperature	MS-ESS2-4 MS-ESS2-6 MS-PS3-1 MS-PS3-3 MS-PS3-4
BUNDLE 3	CAUSES AND EFFECTS OF REGIONAL CLIMATES 9 WEEKS	Why is the climate different in different regions of the planet, and how do the differences in climate affect organisms?	Students learn about human reproduction, development, and genetic inheritance, and explore the physiological systems that allow humans to sense and respond to their environment. Students learn that climate is a key factor in determining an organism's environment, the systemic interactions between evolution and the environment, and human activity's effect on these interactions.	Reproduction in Plants & Animals Growth of Organisms Sensory Receptors Inheritance & Genetic Variation Predicting Weather	MS-LS1-4 MS-LS1-5 MS-LS1-8 MS-LS3-2 MS-ESS2-5 MS-ESS2-6 MS-PS3-3 MS-PS3-4
BUNDLE 4	EFFECTS OF GLOBAL WARMING ON LIVING SYSTEMS 4 WEEKS	Has global climate change impacted the water supply in Canada?	Students study human impact on the environment with an exploration of the causes of global climate change, and predict the potential long-term impacts that these disruptions will have on human health and wellbeing.	Human Impact on the Environment Human Activities & Global Climate Change	MS-ESS3-3 MS-ESS3-4 MS-ESS3-5 MS-LS1-4 MS-LS1-5

7TH GRADE STORYLINES

	BUNDLES & EST. TIME	ANCHORING PHENOMENA	STORYLINE	SCOPES	PEs
BUNDLE 1	ORGANISMS AND NONLIVING THINGS ARE MADE OF ATOMS 9 WEEKS	Do soil samples taken from a newly discovered planet provide enough evidence of life and natural resources to support future explorations of this planet?	Students learn about finite resources through studying ecology and competition among organisms, which opens up a discussion of finite natural resources that humans depend upon. Students explore why resources are finite, what matter is made of, conservation of matter and mass, energy conversion, and the role energy plays in the transformation of matter.	Competition in Ecosystems Organism Interactions in Ecosystems Human Dependence on Natural Resources Structure of Matter Changes in Energy on the Molecular Level Heat & Matter	MS-LS2-1 MS-ESS3-1 MS-PS1-1 MS-PS1-4
BUNDLE 2	MATTER CYCLES AND ENERGY FLOWS THROUGH ORGANISMS AND ROCKS 11 WEEKS	How can humans successfully colonize Mars?	Students develop a more complex understanding of matter and the principles of chemistry. They apply new learning to the biochemical pathways of photosynthesis and cellular respiration, which leads them to compare the flow of energy and matter in living organisms to that of Earth's systems.	Characteristics of Chemical Reactions Physical & Chemical Properties Modeling Conservation of Mass Thermal Energy in Chemical Reactions Introduction to Photosynthesis Energy Flow in Organisms Earth Materials	MS-PS1-2 MS-PS1-5 MS-PS1-6 MS-LS1-6 MS-LS1-7 MS-ESS2-1
BUNDLE 3	NATURAL PROCESSES AND HUMAN ACTIVITIES SHAPE EARTH'S RESOURCES AND ECOSYSTEMS 6 WEEKS	How will the movement of continents affect the matter and energy flow within the new ecosystems?	Students revisit the idea of finite resources to further explore conservation of mass and ecological consequences through complex system models that address relationships among organisms and flow of energy in ecosystems. Students explore how macro processes, such as plate tectonics, affect Earth's systems, change Earth's landscape, and affect the climate in ways that alter the planet's ecosystems over time.	Relationship in Ecosystems Flow of Energy in Ecosystems Plate Tectonics Seafloor Spreading	MS-LS2-1 MS-LS2-2 MS-LS2-3 MS-ESS2-3 MS-ESS3-1 MS-PS1-2 MS-PS1-5
BUNDLE 4	SUSTAINING BIODIVERSITY AND ECOSYSTEM SERVICES IN A CHANGING WORLD 10 WEEKS	How will geoscience processes affect biodiversity in Sunnyville, California, 40 years from now?	Students explore the dynamic nature of ecosystems and varied biodiversity as a result of the geoscience processes that define them. They study weathering, erosion, and how geoscience processes cause natural disasters, as well as how natural disasters affect ecosystems and people. Students learn about synthetic materials made from natural resources, circling back to human dependency on natural resources and the consequences of overconsumption.	Dynamic Nature of Ecosystems Ecosystem Biodiversity Geoscience Processes Weathering & Erosion Natural Hazard Predictions Synthetic Materials	MS-LS2-4 MS-LS2-5 MS-ESS2-2 MS-ESS3-2 MS-PS1-3

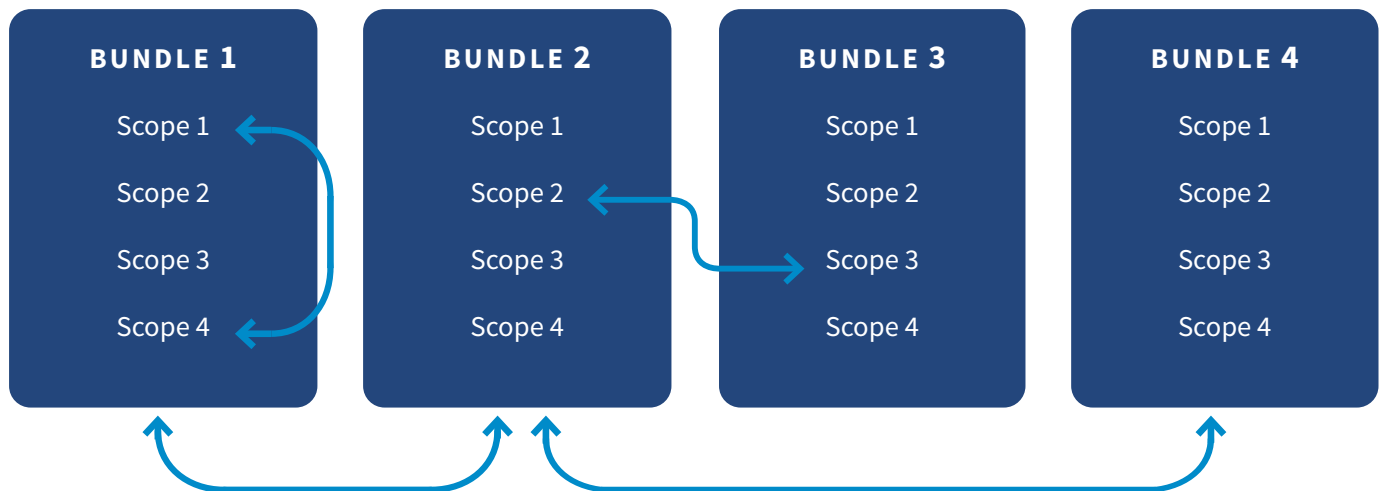
8TH GRADE STORYLINES

	BUNDLES & EST. TIME	ANCHORING PHENOMENA	STORYLINE	SCOPES	PEs
BUNDLE 1	OBJECTS MOVE AND COLLIDE 9 WEEKS	How do unbalanced forces cause sports injuries?	Students explore the basic principles of force and motion, Newton’s laws, gravitational force, and kinetic energy. Students learn that these laws have been in effect since the dawn of time and continue to govern the motion of objects today.	Newton’s Third Law of Motion Changes in Force & Motion Gravitational Forces Kinetic Energy	MS-PS2-1 MS-PS2-2 MS-PS2-4 MS-PS2-5 MS-PS3-1
BUNDLE 2	NONCONTACT FORCES INFLUENCE PHENOMENA 11 WEEKS	How can an object influence the motion of another object without touching it?	Students study potential energy and the motion of the Sun, Earth, and Moon, delving deeper into the relationship between energy, motion, and gravity. They learn how Earth’s orientation and motion affect the distribution of the sun’s energy, then observe gravity’s effects in various contexts. Through studying Earth’s gravitational field and electromagnetic forces, students learn that the same forces that formed the universe billions of years ago continue to shape the universe today.	Potential Energy Earth, Sun, & Moon System Formation & Motion of Galaxies The Solar System Electric & Magnetic Forces	MS-PS3-2 MS-ESS1-1 MS-ESS1-2 MS-PS2-4 MS-PS2-5
BUNDLE 3	EVOLUTION EXPLAINS LIFE’S UNITY AND DIVERSITY 6 WEEKS	How does the history of Earth and evidence of evolution give us clues about how Earth evolved and how species are similar and diverse?	Students observe how force and motion have affected Earth’s geological systems, as well as their effect on Earth’s biological systems. Students study fossils and other evidence that support our understanding of the geological timescale, which leads into evolution, natural selection, and how these factors have affected the fate of all species. Students then move into molecular biology, learning about genes, proteins and mutations, exploring how humans have learned to manipulate genetics and evolution through technology like artificial selection.	Geologic History of Earth Fossil Record Embryonic Similarities Evolutionary History & Relationships Natural Selection Gene & Proteins Mutations Artificial Selection	MS-ESS1-4 MS-LS3-1 MS-LS4-1 MS-LS4-2 MS-LS4-3 MS-LS4-4 MS-LS4-5 MS-LS4-6
BUNDLE 4	SUSTAINING LOCAL AND GLOBAL BIODIVERSITY 10 WEEKS	How can interpreting waves be used to measure biodiversity?	Students expand their understanding of human technology and its impact on Earth’s environment. They develop a deeper understanding of force, motion, and energy by studying various types of complex waves (geologic, sound, and the electromagnetic spectrum). Students explore digital information technology, how humans have used it to manipulate their environment in positive and negative ways, and the fact that all advances have been and will likely always be constrained by the laws of physics.	Human Impact on the Environment Introduction to Properties of Waves Modeling Waves Through Various Mediums Properties of Visible Light Modeling Light Waves Digital vs Analog Signals	MS-ESS1-1 MS-ESS3-3 MS-ESS3-4 MS-PS4-1 MS-PS4-2 MS-PS4-3 MS-LS4-4 MS-LS4-5 MS-LS4-6

Flexibility to Differentiate Instruction

STEMscopes' modular nature allows teachers the flexibility to tailor their instruction to fit the needs of individual students. Teachers have the option of rearranging the curriculum's scopes and bundles as desired, however, we recommend following the preset sequence of bundles and scopes for a truly integrated experience.

The graphic below shows how you can rearrange scopes within a bundle, swap scopes from another bundle, or reorganize lesson sequences to align more closely with your pacing guide.

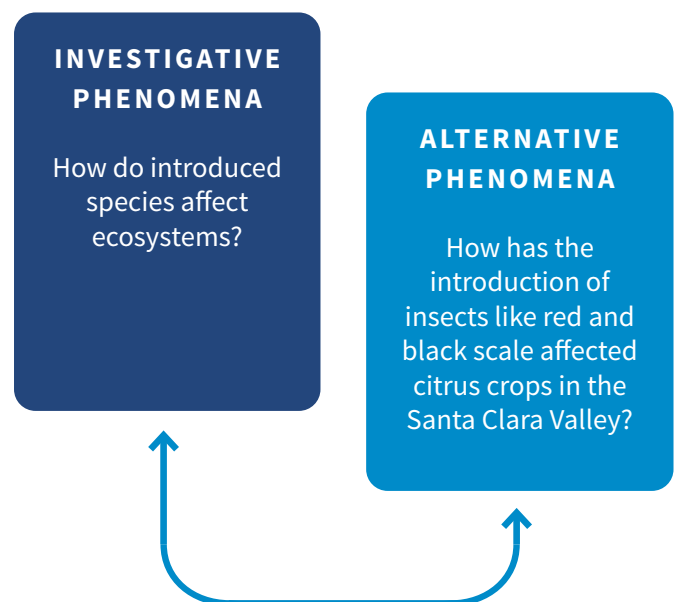


In addition, the *Human Impact on the Environment* scope can be taught either in 6th or 8th grade, as it fits equally well into both storylines. Schools can determine when to include this scope in their instructional pacing. This flexibility enables K-6 schools to reduce the amount of content in the 6th grade curriculum, if needed.

Tailor Phenomena to Your Students

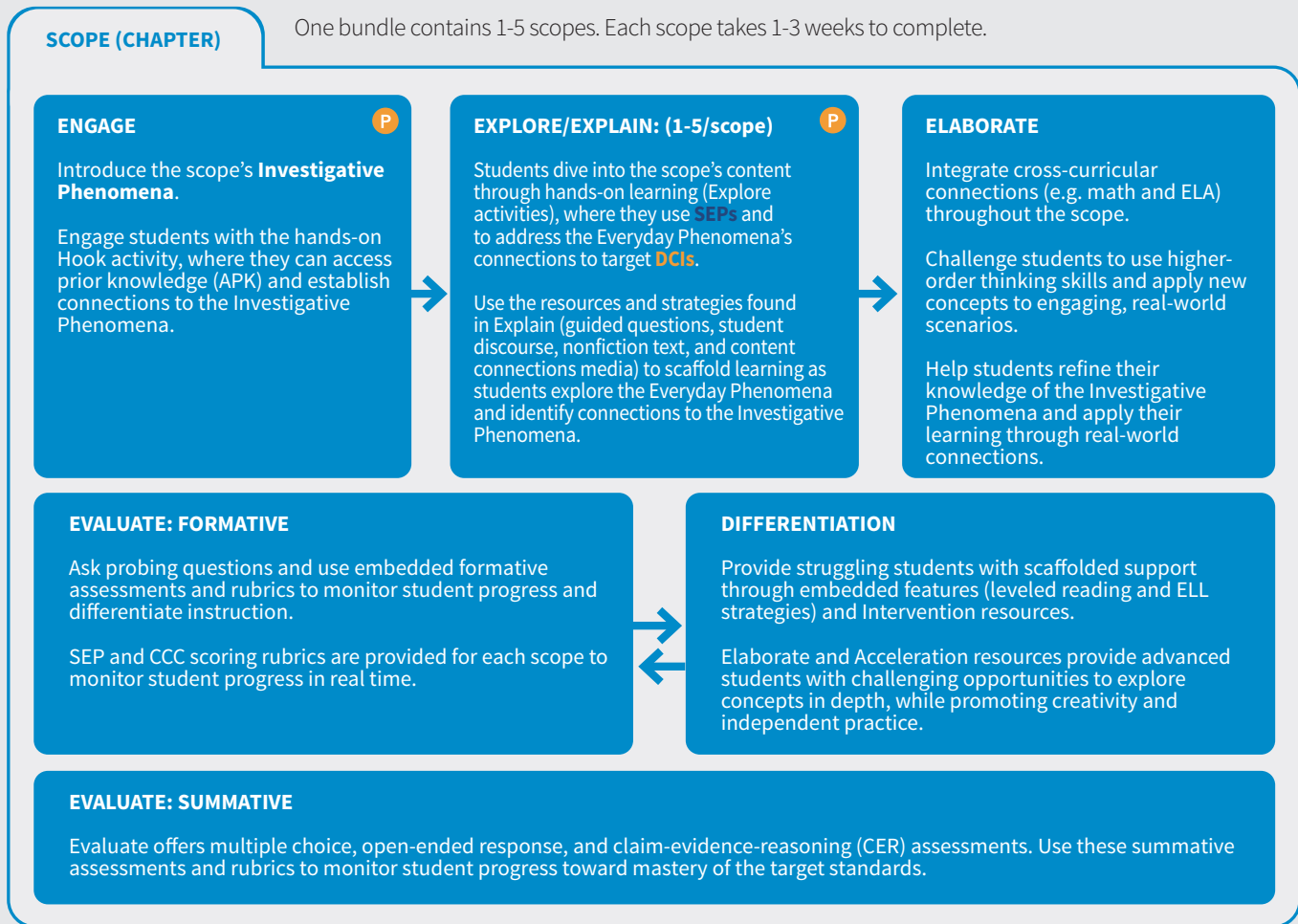
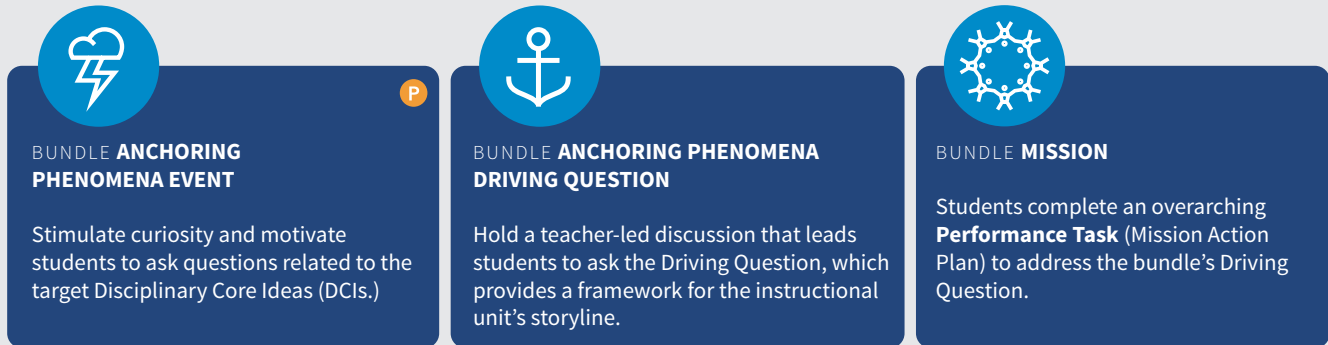
The curriculum is tailored to the NGSS standards and not scripted to specific phenomena. While usable phenomena are provided at the lesson, scope (chapter), and bundle (unit) levels, these can be easily substituted out for local phenomena relevant to your student's and community. STEMscopes provides a rich variety of resources to support three dimensional learning around whichever phenomena teachers choose to use.

Power User Tip: The STEMscopes Streaming option provides an abundance of excellent BBC videos that serves as a fantastic resource for alternative phenomena.



Instructional Bundle (Unit) Overview

Each bundle addresses a bundle of **Performance Expectations** and takes approximately **6-8 weeks** to complete.



Students revisit the bundle mission after each scope to incorporate new learning into the Performance Task.

P = 3 layers of Phenomena



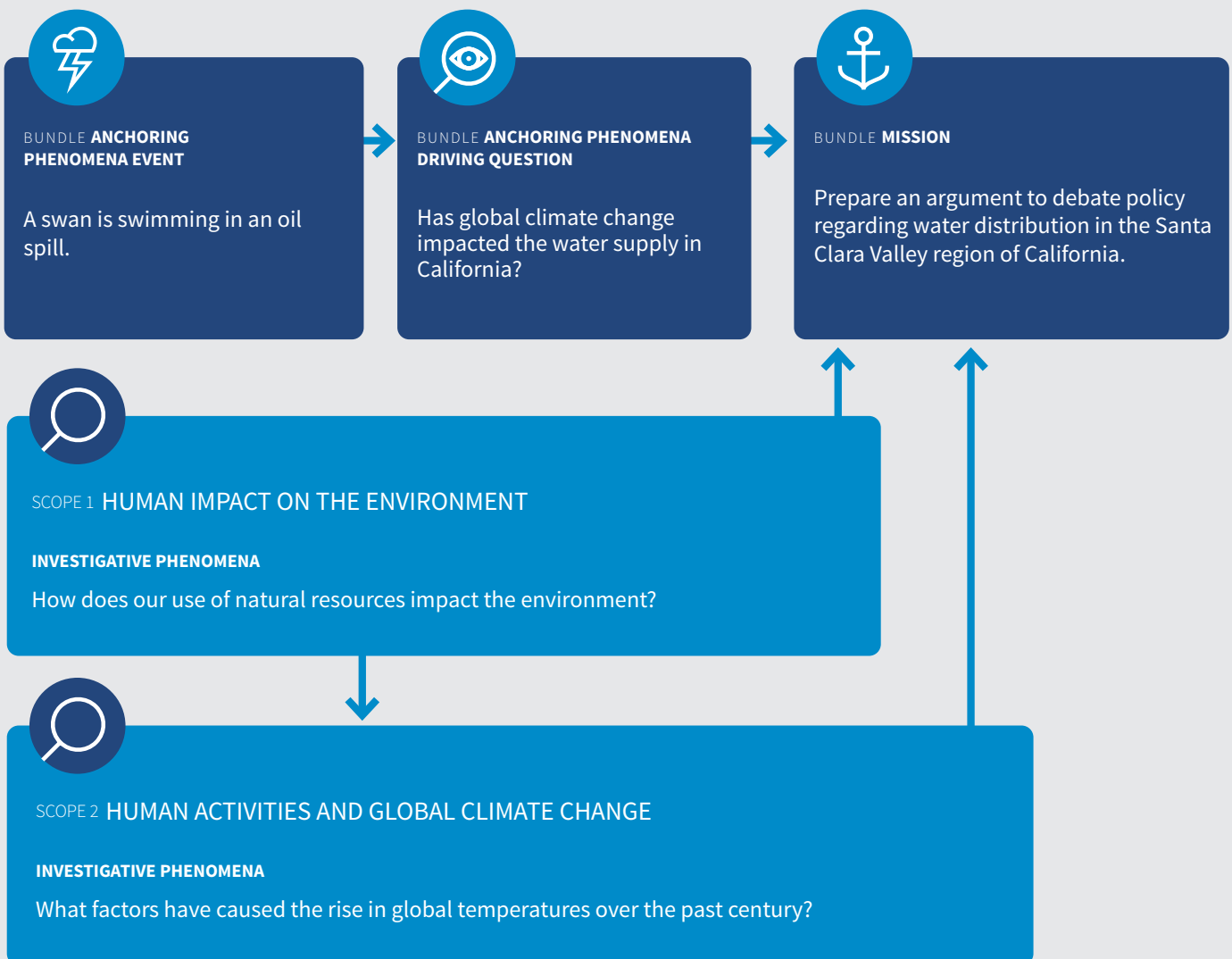
Sample 6th Grade Bundle 4

EFFECTS OF GLOBAL WARMING ON LIVING SYSTEMS

BUNDLE STORYLINE

Students begin by watching a video of a swan swimming in an oil spill, followed by a teacher-led discussion about fossil fuels, their impact on living organisms, and their role in global climate change. The teacher guides students toward the Anchoring Phenomena Driving Question, “Has global climate change impacted the water supply in California?”

Next, the Bundle Mission challenges students to debate the water distribution policy in California’s Santa Clara Valley. The scopes drive students to explore human impact on the environment and global climate change, building upon these concepts throughout the bundle. Students revisit the mission after each 5E lesson sequence to apply their learning to their mission project.



HANDS-ON EXPLORATION

Each scope embodies a 5E lesson sequence in which students build an understanding of the Investigative Phenomena by exploring relevant Everyday Phenomena during the scope's Explore activities. Students are referred back to the Investigative Phenomena after each Explore activity to apply their learning and revise and record their thinking.



SCOPE 1 HUMAN IMPACT ON THE ENVIRONMENT How does our use of natural resources impact the environment?

PERFORMANCE EXPECTATIONS

MS-ESS3-3: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

MS-ESS3-4: Construct an argument supported by evidence for how increases in human population and per capita consumption of natural resources impact Earth's systems.

MS-EST1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

MS-ETS1-4: Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

HOOK ACTIVITY

EVERYDAY PHENOMENA How do human activities affect current and subsequent populations?

Students play musical chairs to model the effects of human-caused environmental changes on living organisms. Each time the music stops, the teacher describes a human activity that impacts the environment, and students who are unable to find a seat represent organisms that are unable to adapt to the environmental change. Students discuss how these types of changes impact populations and species on a larger scale.

EXPLORE LESSON 1 Tuva – Air Pollution and Human Population

EVERYDAY PHENOMENA What is the relationship between the human population and air pollution?

Students investigate the relationship between human population growth and air pollution by using a computer simulation to analyze real-world data about the change in Earth's atmosphere over time. Students then discuss how pollution impacts the environment and living organisms.

EXPLORE LESSON 2 Scientific Investigation – Ocean Acidification

EVERYDAY PHENOMENA How does carbon dioxide affect the organisms in the ocean?

Students observe carbon dioxide's effect on the pH of a fluid by breathing into a solution of bromothymol blue, then discussing how atmospheric carbon dioxide causes a similar increase in the ocean's pH. Next, students explore the effects that an acidic pH in the ocean would have on calcium carbonate (the makeup of marine organism shells). Students discuss humans' impact on the ocean and marine organisms, then predict what will happen if oceanic acidification continues.

EXPLORE LESSON 3 Engineering Solution – Protect and Monitor

EVERYDAY PHENOMENA How can we design a system to monitor human effects on a natural habitat?

Students work in groups to plan, build, test, and refine a system that monitors how human behavior affects a local ecosystem's biotic and abiotic factors. Students must take into account how humans interact with the ecosystem and affect its biodiversity, and provide a method to measure and monitor the impact of these interactions within the ecosystem.



SCOPE 2 HUMAN ACTIVITIES AND GLOBAL CLIMATE CHANGE What factors have caused global temperatures to rise over the past century?

PERFORMANCE EXPECTATIONS

MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

HOOK ACTIVITY

EVERYDAY PHENOMENA How has the sea ice changed in the Arctic region since 1979?

Students use a computer simulation to analyze how the Arctic region's sea ice coverage has changed since 1979, then discuss how melting ice causes the sea level to rise. Students use their data to predict changes in sea ice over the next 30 years and discuss the impact on ecosystems and living organisms, including people.

EXPLORE 1 Climate Science

EVERYDAY PHENOMENA What is the greenhouse effect?

Students investigate the greenhouse effect through three model systems, which all begin with students placing a cup of dirt (Earth) under a heat lamp (heating effects of the Sun). In one model, an inverted glass jar (Earth's atmosphere) is placed over the cup of dirt. In the second, students place a jar sprayed with water vapor over the cup of dirt. Students compare each system's temperature change, explore how the models represent the insulation of Earth's atmosphere, and discuss how different factors affect Earth's temperature. Next, the teacher demonstrates that a water-filled balloon takes longer to pop than an air-filled balloon, showing that water absorbs heat. Students discuss how oceans help Earth maintain a stable temperature by absorbing and storing heat, and how increasing temperatures of the atmosphere and oceans affect Earth's ecosystems and living organisms.

EXPLORE 2 Tuva – Global Climate Change

EVERYDAY PHENOMENA What are some causes of global warming?

Students use a computer simulation to analyze the relationship between global temperature and various factors such as solar irradiance, sea level rise, carbon dioxide levels, and sulfur dioxide levels in the atmosphere. Students make evidence-supported claims about the main cause of global warming based on correlations found in their analysis.

EXPLORE 3 Research – Human Activity Causes and Solutions

EVERYDAY PHENOMENA How have humans contributed to global warming?

Students research how human activities have influenced climate over the last century, compare the speed of climate change now and in the past, explore climate change's effect on organisms in the past and present, and identify possible solutions. Students research one human activity that impacts global warming—including what steps, if any, their state and city have taken to address the issue—and present their findings.

Digital Teacher Resources

The desktop monitor displays the Accelerate Learning website's 'Scopes' page. The navigation bar includes Home, Planner, Bundles, Scopes, Streaming, Coding, Standards, Students, and More. The page features a filter sidebar on the left with options for None, Save filter, Search..., Grades, Domains, and Bundles. The main content area shows three resource cards, each with a download icon: 'Seventh Grade: Teacher Resources and Planning Guide', '7th Grade Bundle 1: Organisms and Nonliving Things are Made of Atoms', and 'Competition in Ecosystems'. The tablet displays the 'Planner' tool, showing a calendar for September 2023 with lesson plan components being dragged and dropped onto the calendar grid. A list of lesson plans is visible on the left side of the tablet screen.

→ Teacher Resources & Planning Guide

Access year-long pacing guides and bundle lesson planning guides that provide standard alignment, scope resource overviews, and an estimated timeline to complete each unit. Also find access to 3D supports for parent communication and SEP and CCC student progress monitoring, all over the course of the school year.

→ Bundle

Access unit-level resources, including 3D interactive assessments and project-based performance tasks that connect learning across each bundle and form a coherent storyline. You can even build your unit's storyline around a self-selected anchoring phenomena and customize unit-level performance tasks.

→ Scope

Access resources to implement a 5E lesson for each bundle of Performance Expectations, with comprehensive differentiation to meet the needs of every student.

Use the Planner tool to drag and drop lesson components directly onto your instructional calendar. You can easily organize your plans, make notes, and share them with your colleagues.

How to access the Teacher Planner and calendar feature:

- Create your classroom by selecting the Students tab on the blue navigation bar.
- Click "Add Selection" on the right and name your classroom.
- Click "Create this teacher section."
- Click the Planner tab on the blue bar and choose from the list of grades and scopes on the right-hand side of the page.
- Expand each section to drag and drop your selected scope onto the calendar, then save your changes.

5E Instructional Resources

STEMscopes NGSS 3D scopes (lessons) contain over 25 instructional resources per scope that you can use judiciously, based on your students' needs and interests. These resources provide opportunities for differentiation, student choice, and content deep-dives, and encourage students to express understanding while making learning interesting, relevant, and fun.

ENGAGE

Engage students through relevant phenomena, prior knowledge, and a hook activity.

Investigative Phenomena, APK, Hook

EXPLORE

Students gain foundational experience that drives discussion and promotes discovery.

Hands-on Activities, Scientific Investigations, Engineering Design Challenges, Research Projects, Tuva Sets (Analysis of Real-Life Data Sets)

Scopes have varying numbers of Explore activities. Explores are scaffolded and doing all Explores is recommended.

EXPLAIN

Focus on key terms and concepts that connect to experiences in the Explore activities.

Picture Vocabulary, Content Connection Videos, Linking Literacy, STEMscopedia

Linking Literacy provides ELA support for reading science nonfiction text.

ELABORATE

Incorporate optional enrichment activities for differentiated learning (teacher's choice).

Leveled Math, Leveled Reading, Science Today, Scientist Spotlight, Career Connections, Simulations

EVALUATE

Students express their understanding of the essential question and provide evidence that supports their thinking.

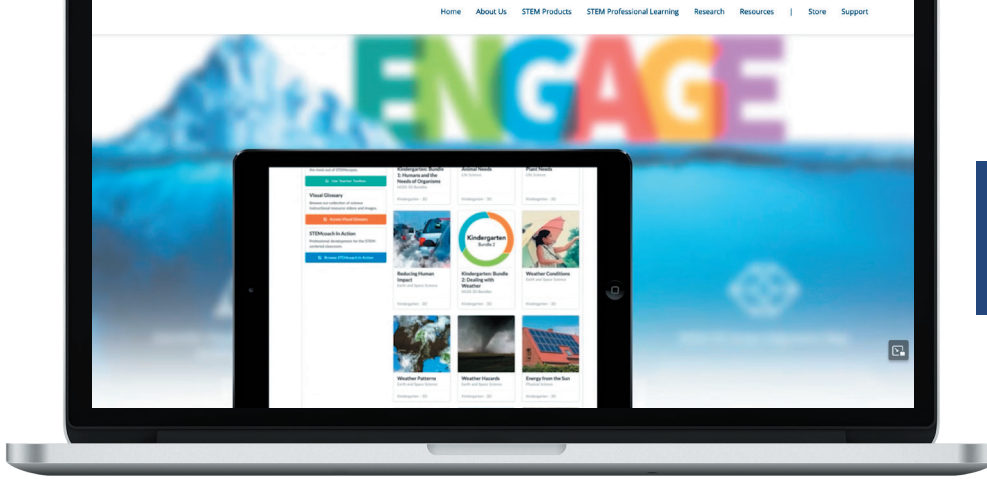
Open-Ended, Multiple Choice, Claim-Evidence-Reasoning (CER)

Leading The Way For A New Learning Experience

Not only do we keep our curricula up to date, but we also ensure a seamless user experience with continuous improvements to the digital platform. Here are just a few helpful features you can utilize within STEMscopes:

- Online/offline mode
- Save-as-you-go processing
- Google Classroom integration
- Responsive design on all devices
- Grade passback with widely used LMSs and SISs
- WCAG A-AA-compliant platforms





Walk through our curriculum with this instructional video.

Navigating the Digital Curriculum

Main Navigation Bar

HOME

View upcoming lessons and customized bookmarks on your dashboard.

PLANNER

Create lesson plans and collaborate with fellow STEMscopes teachers.

SCOPES (START HERE!)

Access all lesson content and teacher supports.

STANDARDS

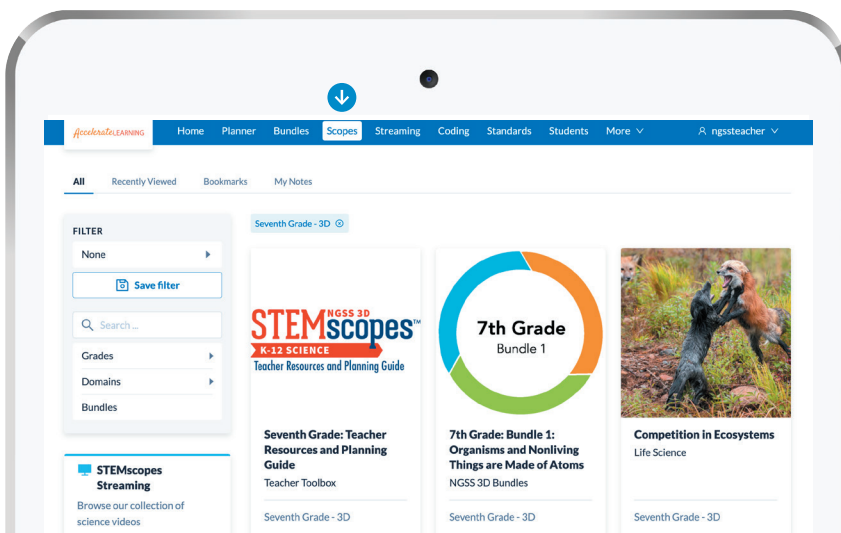
View a breakdown of the NGSS & Skills.

STUDENTS

Manage student accounts, create class groups, and monitor assignment progress and grades.

MORE

Select from a wide variety of assessments, access eBooks, or get help.

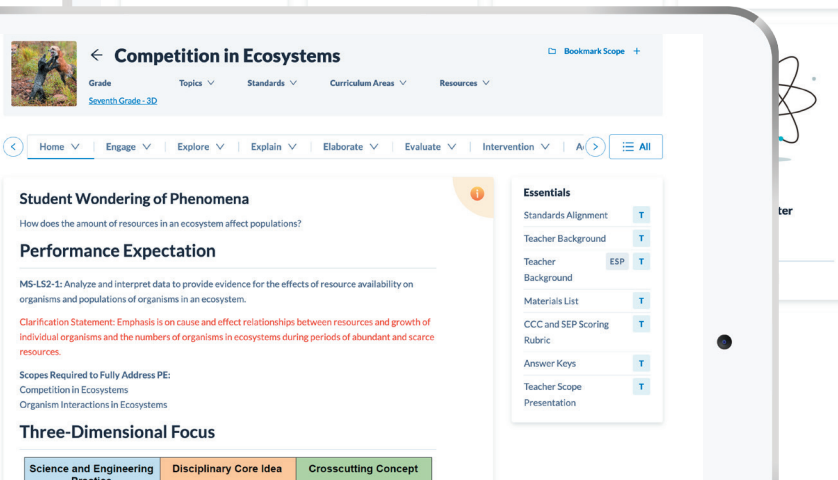


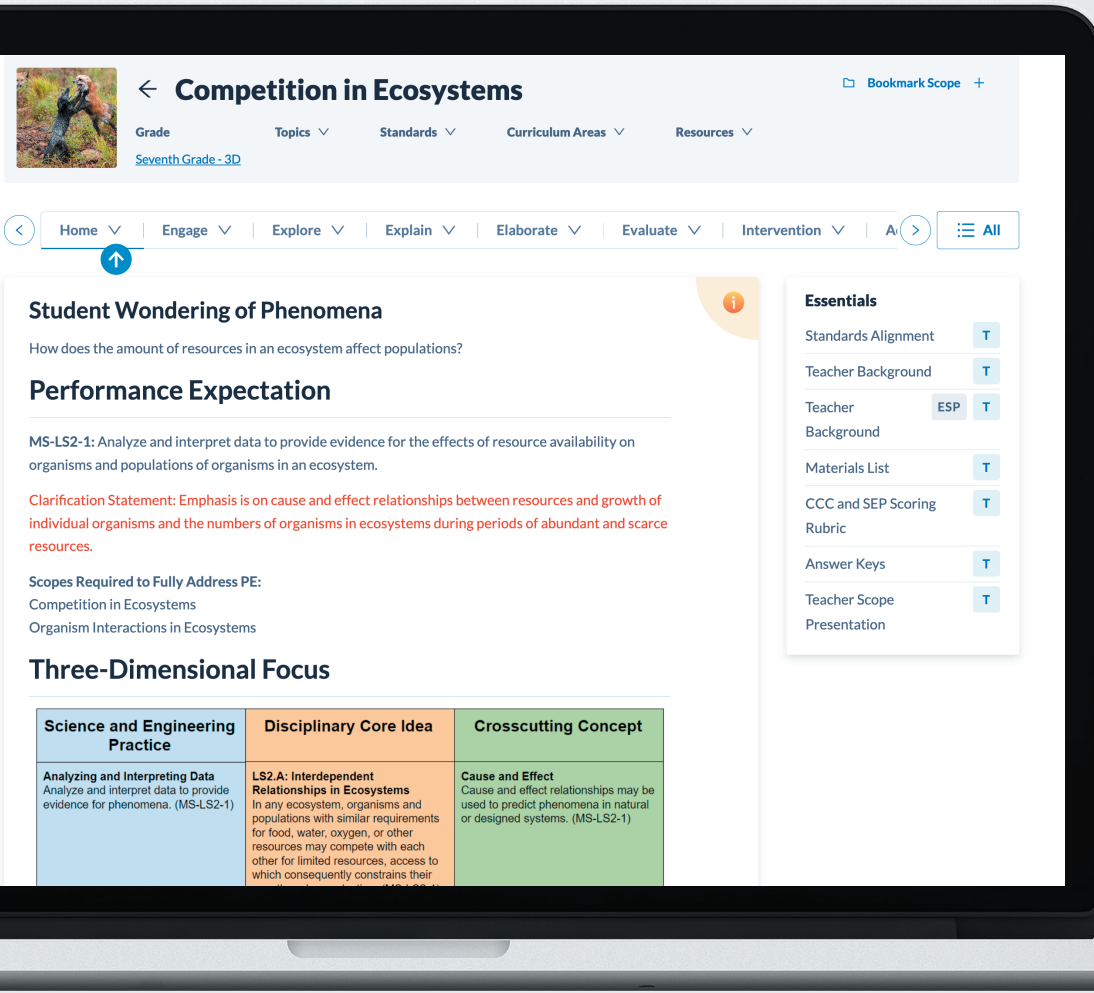
Scopes

STEMscopes NGSS 3D is organized into units (bundles), chapters (scopes), and lessons (hands-on Explores) that build upon each other. Filter by grade, domain, or keyword to find a specific Scope.

A LOOK INSIDE A SCOPE →

After selecting a Scope (chapter), review the planning and instructional resources. The white toolbar at the top can help you access all the features and benefits of STEMscopes NGSS 3D.



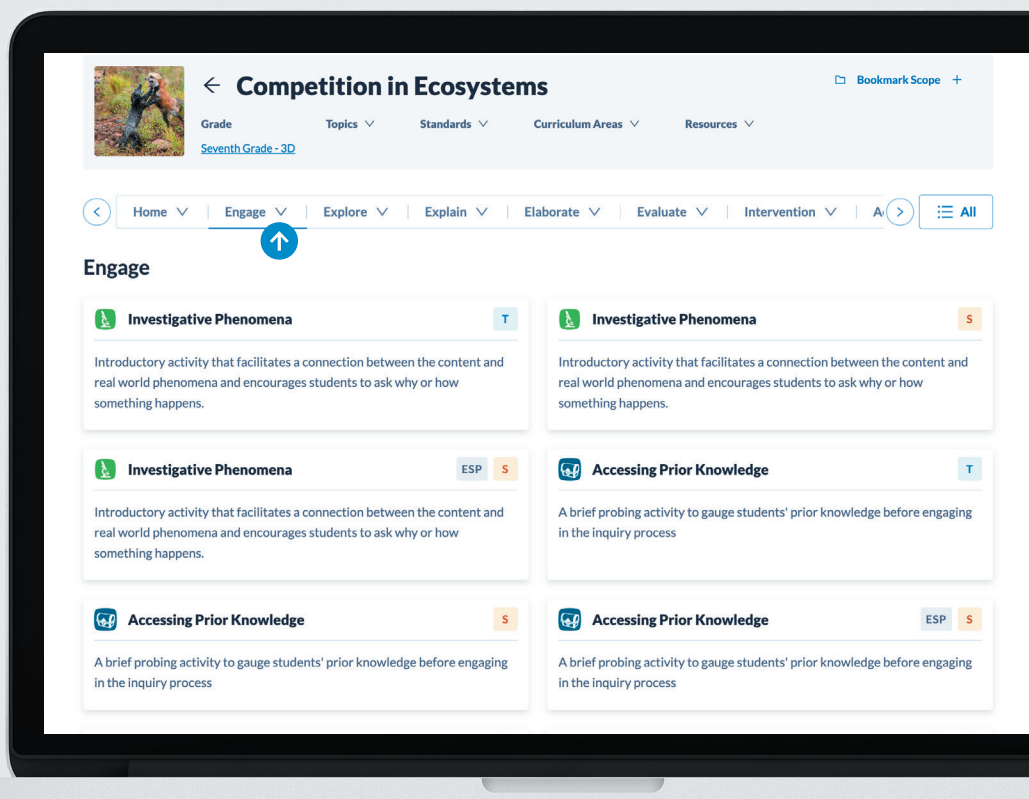


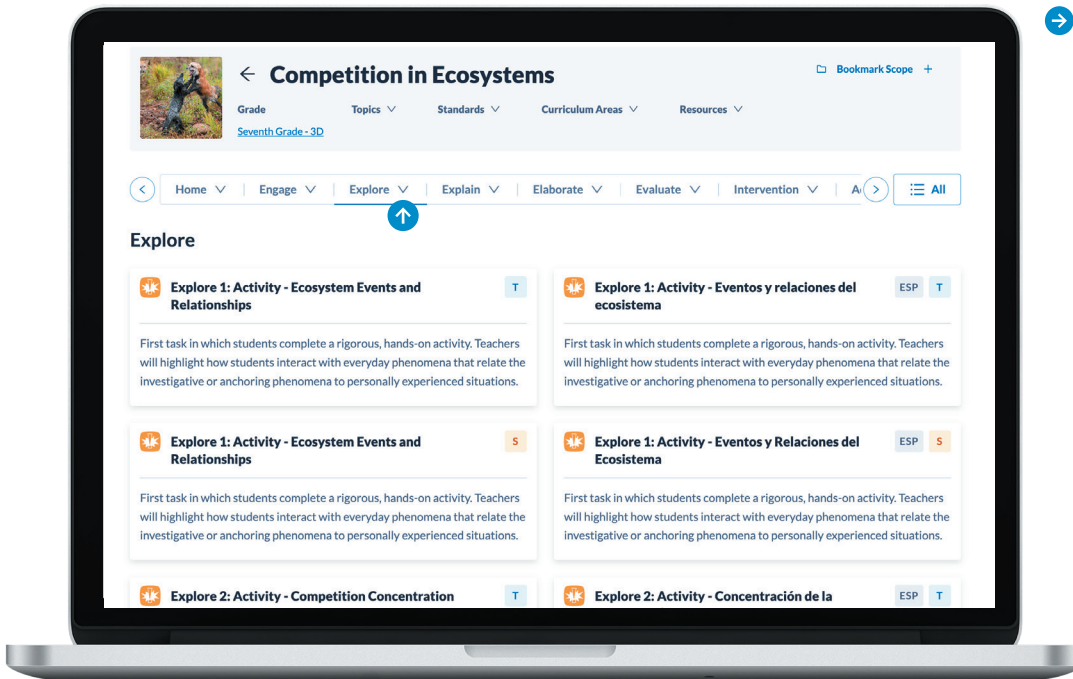
HOME

Click the **Home** button to access key materials that will help you prepare for the scope activities. These include standards and materials lists, a background explanation for new science teachers or teachers in need of a refresher, and CCC and SEP rubrics that track student progress.

ENGAGE

Engage marks the start of 5E learning. First, introduce your students to the Investigative Phenomena, which guides student learning and gives students the opportunity to question what they don't yet understand. Your students revisit the Investigative Phenomena throughout the scope to record ideas and revise their thinking. Next, allow your students to reflect on what they already know using the Accessing Prior Knowledge activity. This will help you identify students' background knowledge. Finally, "hook" student interest with relevant everyday phenomena and a fun, hands-on activity.





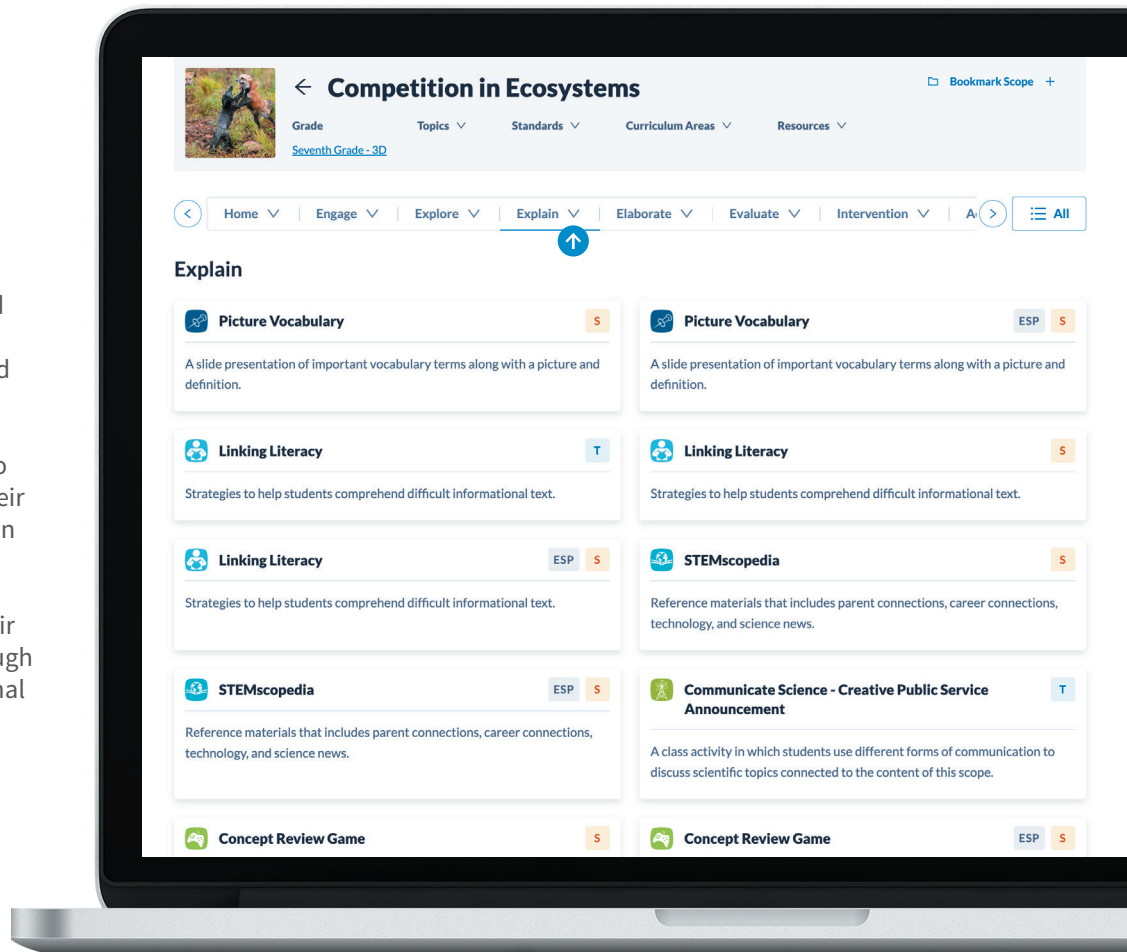
➔ **EXPLORE**

Explore is where you continue hands-on learning with exciting activities. Your students unpack a problem and determine the solution themselves. Whether they're designing a model, conducting an investigation, or gathering data, your students are now in control of their own learning, and that's where real science takes place.

Typically, a teacher will begin with an Explore activity and use Explain's resources to support students in making sense of their hands-on investigation. It is ideal to repeat this cycle, alternating between Explore and Explain.

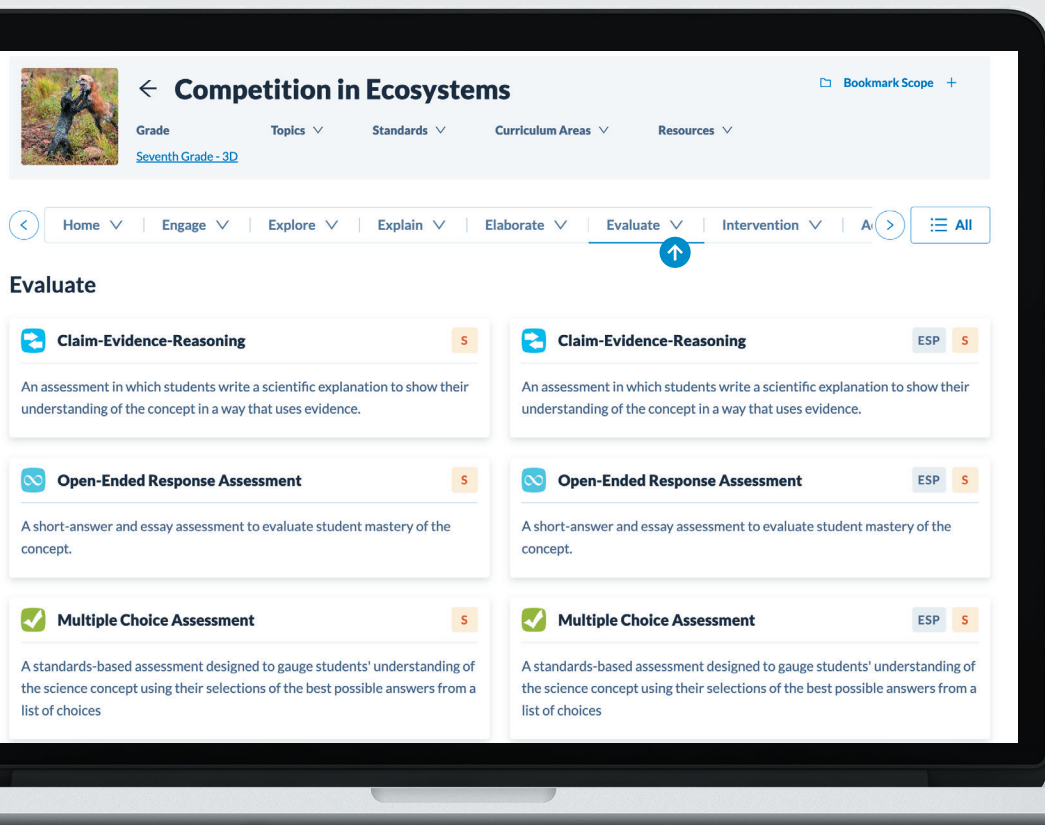
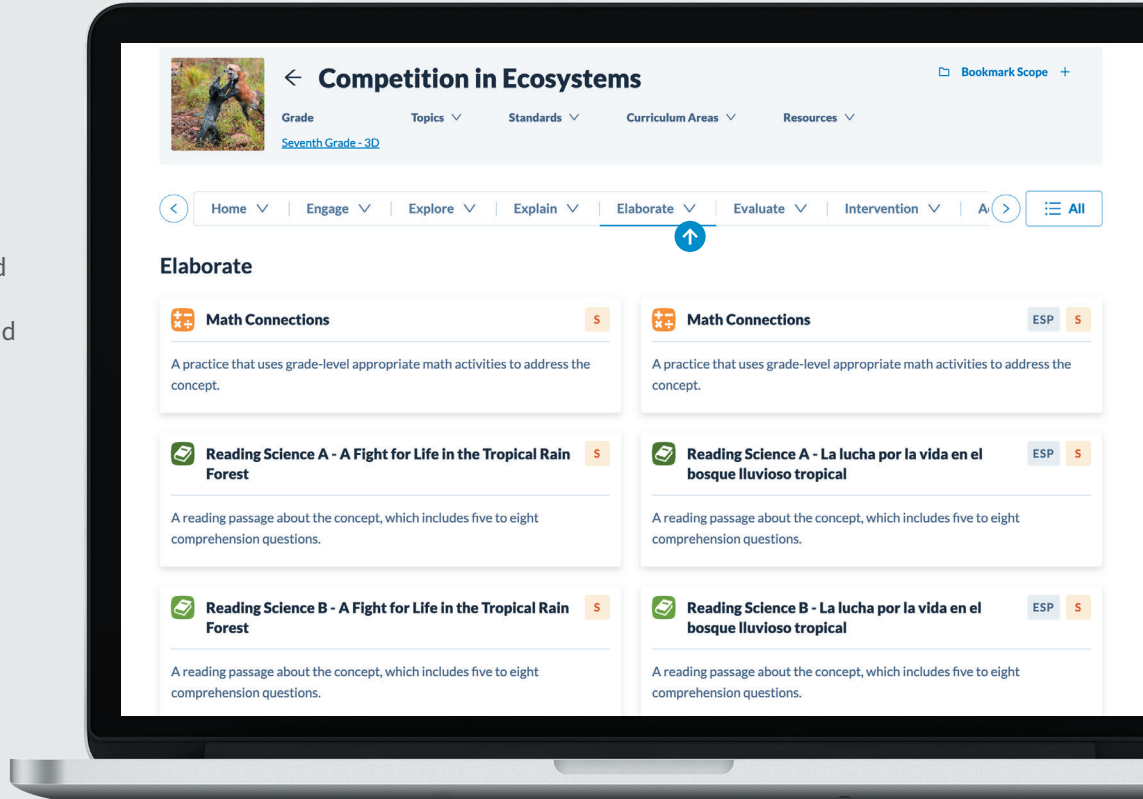
➔ **EXPLAIN**

With **Explain**, your students dive even deeper into the scope's scientific concepts and phenomena, reinforcing what they've learned and discovered during their hands-on Explore activities. Students discover additional, detailed answers to their questions and expand their learning through differentiation based on their individual needs. Also during **Explain**, your students can connect their experiences with literacy through the STEMscopedia informational text and Picture Vocabulary.



→ ELABORATE

Elaborate is designed for enrichment, application, and cross-curricular connection. This is where students further build upon their previous learning, connecting learned concepts to themselves and the world around them through math, reading, simulations, scientific careers, and other valuable activities. These resources help students tie both the investigative and everyday phenomena together with real-world scenarios and events.

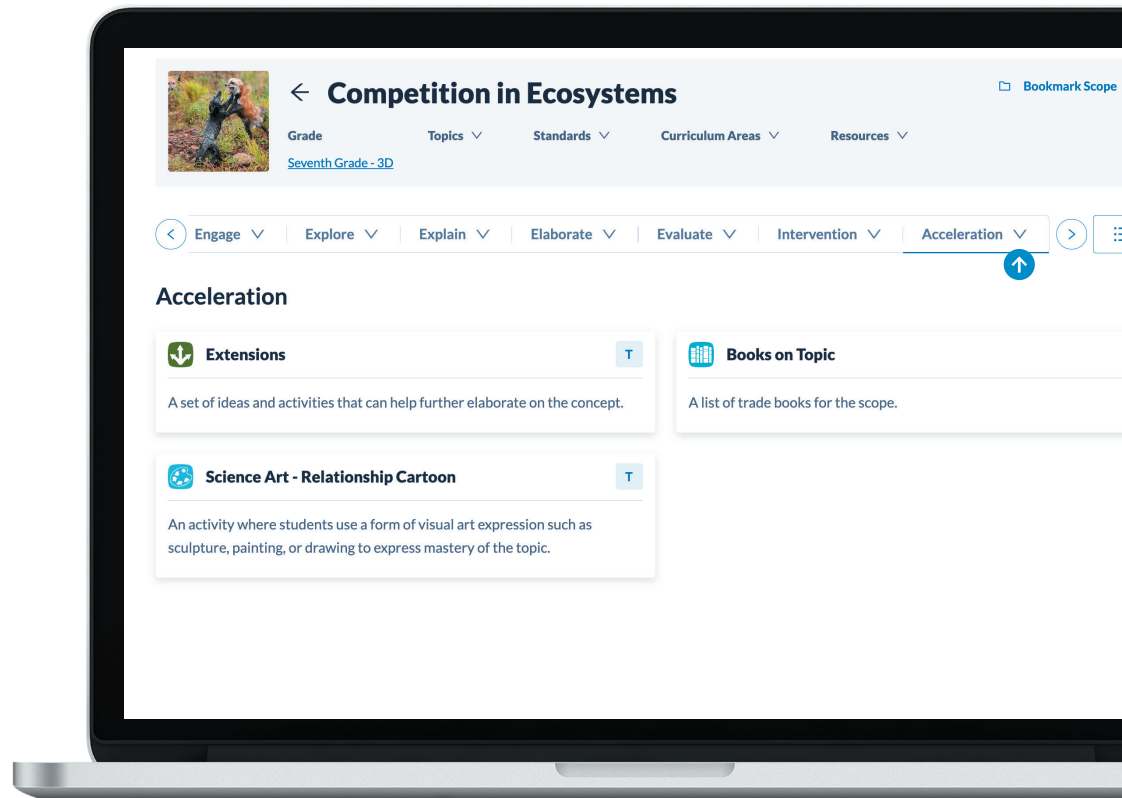
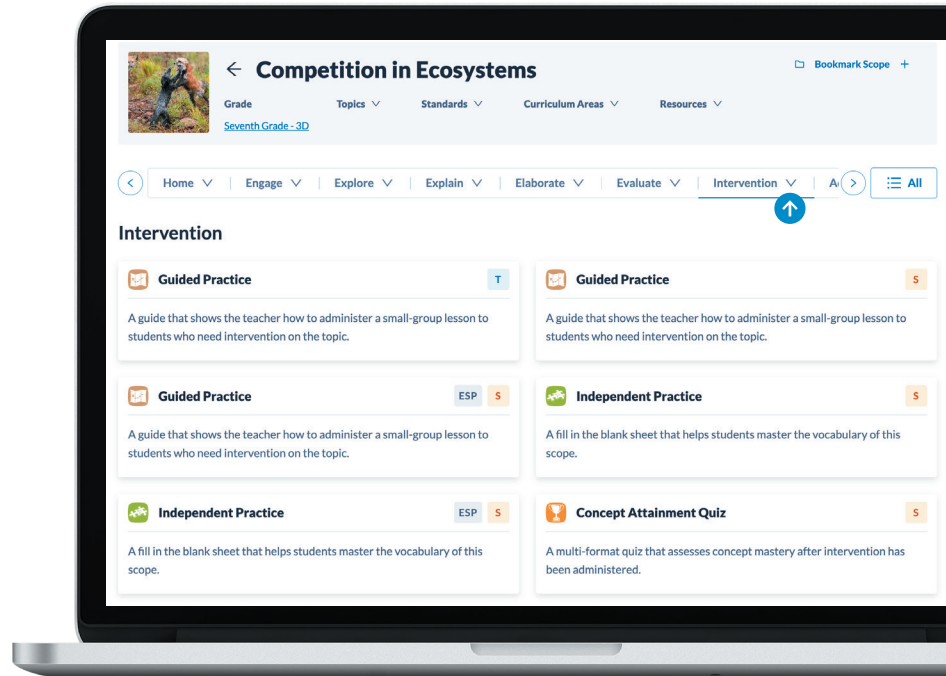


→ EVALUATE

Evaluate allows you to summatively assess student learning. We provide several tools for you to assess learning as students critically reflect on the scope's phenomena, including Claim-Evidence-Reasoning, open-ended response, and auto-graded multiple choice assessments.

➔ INTERVENTION & ACCELERATION

We believe **Intervention** and **Acceleration** are critical to the modern classroom. In addition to providing everything you need to complete a 5E lesson sequence, STEMscopes provides even more options for differentiated instruction. Whether a student requires guided instruction, or is ready to take learning to the next level, we make sure every student has the supports they need.



Hands-on Kits and Prints

STEMscopes NGSS 3D digital curriculum includes everything educators need to plan and deliver comprehensive science instruction. Students can access all of the curriculum features digitally, or teachers can print the resources and modify them to meet specific student needs. Optional full-color consumable Student Notebooks and reusable STEMscopias are available for purchase in order to save on the cost of printing and distributing large numbers of colored handouts. Whether teachers prefer a fully digital curriculum, a paper-based curriculum, or a blended approach, STEMscopes NGSS 3D meets their needs.

Hands-On Materials

Kit images are for example purposes only, and items shown may or may not be included in each specific edition of the kits. For more details on what is included in your edition, please contact your STEMscopes account manager.

HANDS-ON KITS*

- Reusable and consumable items for hands-on activities
- Packaged for each scope
- Serves 24 students (grades K-4) or 32 students (grades 5-8)

*Does not contain common school supplies (e.g., paper, glue, scissors) or basic equipment.

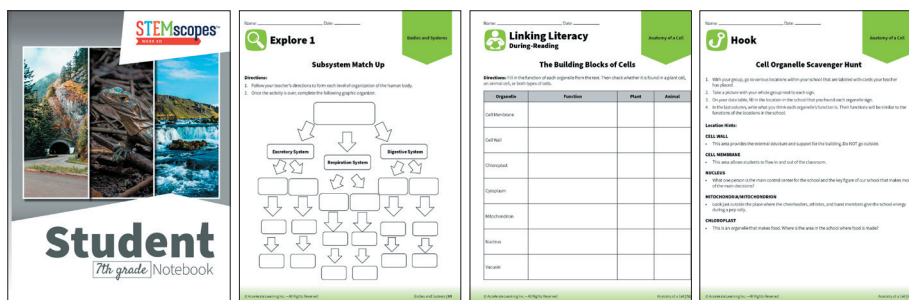
CONSUMABLE KITS

- Consumable items
- Refillable for extended use across multiple classroom sections
- Serves 24 students (grades K-4) or 32 students (grades 5-8)
- Recommended: one consumable kit per each additional section

Print

STUDENT NOTEBOOK A consumable lab notebook containing full-color versions of the Explore labs and other student activities, such as the Graphic Organizer, Reading Science, and Claim-Evidence-Reasoning assessment. The Student Journal pages use a 45-lb paper weight and are perforated for ease of use. Each includes a table of contents and activity handouts. (One per student is recommended).

7TH GRADE PRINT SAMPLE, STUDENT NOTEBOOK



STUDENT STEMSCOPEDIA A hardback version of the curriculum's digital textbook to help students figure out the everyday and investigative phenomena within each scope. Each section includes probing questions for formative assessment, as well as parent connection resources. (Recommended as a shared classroom set.)

7TH GRADE PRINT SAMPLE, STEMSCOPEDIA



TEACHER GUIDE An overview of the curriculum for each segment (unit) of instruction, including suggested pacing guides, teacher facilitation points, and a summary of science content background knowledge.



Step Up Your STEM Instruction



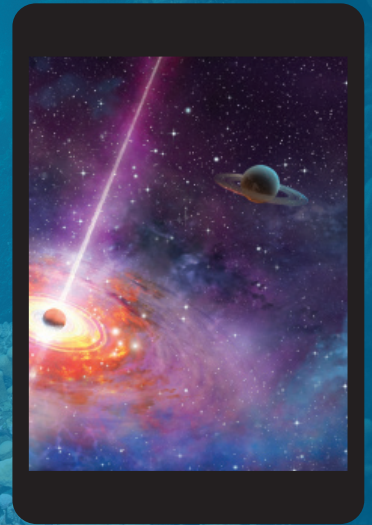
STEMscopes™
K-12 SCIENCE

Stream media that reveals the wonder of STEM

Explore the world of phenomena in a whole new way! STEMscopes and BBC Learning have partnered to offer you a full library of world-class, dynamic videos, current events, behind-the-scenes photography, and integrated activities for the classroom.

Igniting Inquiry with World-Class STEM Content

- + An exciting new way to explore phenomena
- + Integrated discussion questions, writing prompts, and hands-on extensions
- + Supported communication, literacy, and lab investigations



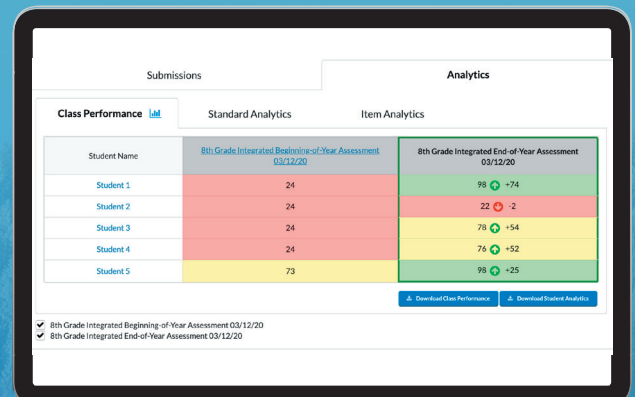
STEMscopes™
ASSESSMENT PACKAGE
K-12 SCIENCE

Identify and address student learning gaps

The Assessment Package expands the assessment tools and resources available in STEMscopes. Save time designing equitable test questions while accessing data analytics to quickly determine how to reteach, accelerate, and flexibly group your students.

What's included:

- + Beginning-of-Year and End-of-Year benchmark assessments that address all three dimensions of the NGSS
- + Expanded bank of assessment questions for use in building custom assessments
- + Integrated data analytics that indicate student mastery of each domain within each dimension of the NGSS, including all eight science and engineering practices and all seven crosscutting concepts



Professional Learning

Bite-sized morsels of professional learning are embedded and free throughout the STEMscopes curriculum. These teacher-friendly learning opportunities are within every Explore (lesson) and reinforce helpful strategies to promote the instructional fidelity of the NGSS and student achievement.

In-Lesson Facilitation Points, 3D Callouts, Instructional Strategies, Math Moments, and STEM Best Practices

The image displays a collage of digital devices showcasing educational content from the STEMscopes platform. The devices are arranged to show different parts of a lesson and associated professional learning resources.

Laptop Screen (Top): Displays the "Competition in Ecosystems" lesson page. The navigation bar includes Home, Planner, Bundles, Scopes, Streaming, Coding, Standards, Students, and More. The main content area shows "Explore 1: Activity - Ecosystem Events and Relationships" with a "Setup Video" player. A sidebar on the right offers options like "Add to Planner", "View Student", and "Print Files".

Tablet (Middle): Shows the "Description" and "Materials" section for the activity. The "Description" states: "Students plant a variety of seeds in clear cups to observe their growth and development over time. You grow each seed type in a plastic bag without soil. Each student individually dissects a lima bean seed to observe the inside." The "Materials" section lists items such as "1 Wonders of Plants (per student)", "1 Student CER (per student)", "1 Permanent marker (per teacher)", "4 Small, clear plastic cups (per group)", "4 Sandwich-size zip baggies (per class)", "1 Large bag of potting soil (per class)", "4 Craft sticks (per group)", "5 Pinto beans (per group)", "5 Black beans (per group)", "1 Pinch of rye grass seeds (per group)", "5 Small lima beans (per group)", "4 Paper towels (per teacher)", and "1 Large lima bean (per student)". An "ESTIMATED" timer icon shows "30 min - 45 min".

Tablet (Bottom Left): Displays "Procedure and Facilitation Points" for Part I. It features an "ESTIMATED DAYS" callout of "30+" and lists 11 numbered steps for the activity, including distributing cups, planting seeds, and observing growth.

Tablet (Bottom Right): Shows the "Connection to the Investigative Phenomena" section. It includes a "Math Moment" connecting to math standard 3.NF, "Language Acquisition Strategies" (Think, Pair, Share), and "Intervention Strategies" (Roadblock: Difficulty Reading Text on a Screen).

Quality Instruction Matters

STEMscopes believes the most important strategy schools can use to significantly increase student learning is the quality of instruction. Students flourish when teachers deeply understand the content and make use of all available instructional resources.

We provide professional learning services that focus on evidence-based instructional strategies that strengthen student learning while simultaneously nurturing the attitudes and skills fundamental to implementing a successful STEM program.

Training Methods to Suit Every Teacher



On-site



Online Portfolios



Virtual



Individual and
Small Group
Coaching



Blended

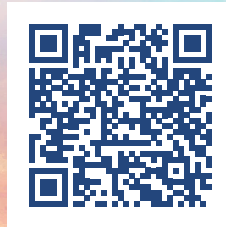


Group Workshops



Online Courses

Click or scan the QR code to create your own custom-tailored plan for STEM excellence
or visit acceleratelearning.com/professional-learning/





NGSS 3D
STEMscopes™
K-12 SCIENCE
POWERED BY ACCELERATE LEARNING