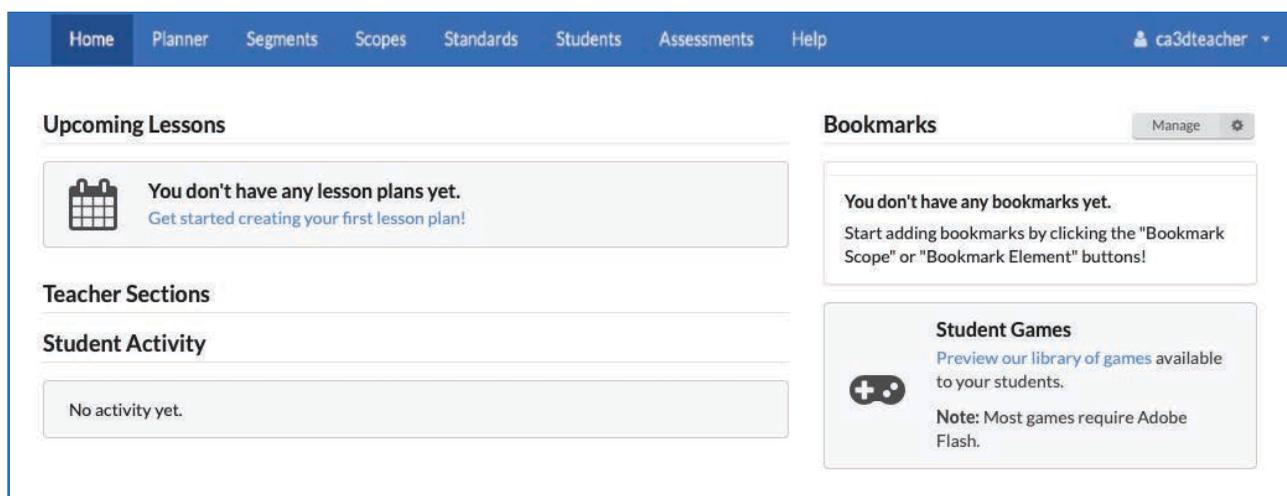


A person in silhouette stands on a dark rock, holding a bright yellow umbrella. The background is a vast, blue, particle-filled space that resembles a nebula or a microscopic view of a liquid, with a bright light source in the upper center creating a lens flare effect.

STEM^{NGSS 3D}
scopes[™]
K-12 SCIENCE

NAVIGATION GUIDE

STEMscopes NGSS 3D shifts the paradigm of traditional science instruction to student-centered, phenomena-based STEM learning. Designed for the Next Generation Science Standards and based on the 5E instructional model, STEMscopes NGSS 3D supports your diverse learners with embedded bilingual support, dedicated intervention and acceleration modules within each lesson, and in-depth breakdowns of the three dimensions through coherent learning bundles. Be more than a science teacher: be a STEM teacher. Let us support you on every step of the journey.



Home & Main Navigation Bar

Find What You Need Fast

Your STEM adventure begins at “Home”. Serving as your one-stop dashboard, this section houses upcoming lesson sequences that you’ve set up through the Planner, bookmarked scopes (lessons), student data (e.g., assessment and annotation notes), and access to our library of student games. Our main navigation page is shown above—explore what’s under each tab below:

Home

- Your dashboard
- Access to student games (library of games)

Scopes

- Tour all scopes (lessons) by grade, key word, topic, and domain
- Access all lesson content available to you

Assessments

- Create custom assessments
- Collaborate with fellow STEMscopes teachers

Planner

- Create lesson plans
- Collaborate with fellow STEMscopes teachers

Standards

- Breakdown of the Next Generation Science Standards
- Jump to aligned lesson elements

Help

- Find additional STEMscopes navigation and usage support guides and videos

Bundles

- Navigate scopes (lessons) by grade level bundles (units)

Students

- Manage student accounts/resources
- Create class groups
- Monitor assignment progress and grades



Creating Coherent Storylines through Bundles

Thematic Units Centered on Anchoring Phenomena

Bundles are what we call a group of scopes (lessons) and tie together investigative phenomena through student missions found in the mission log and action plan. Based on an anchoring phenomena that inspires curiosity and awe, bundles help your students apply the three dimensions to real-world problems. After every completed scope, your students will return to the bundle to record their findings in their mission log and action plan.

The Teacher Toolbox: A Hidden Gem

Additional Support Tools and Wraparound Resources

From 3D supports like inventories of SEP skills and the CCC, to interactive STEM games and classroom safety posters, the Teacher Toolbox is a goldmine for instructional support. Make the most of your STEMscopes journey by exploring the toolbox and its resources before you begin using our program in the classroom.

Extras

Visual Glossary

Help students understand new terms with our extensive bilingual vocabulary database featuring both video and images.

STEMcoach In Action

Reach your full, STEM-teaching potential with our self-serve database of professional development strategies.



Feedback

The screenshot shows the STEMscopes interface. At the top, there are navigation tabs: Home, Planner, Bundles, Scopes, Standards, Students, and Assessments. Below these are filter tabs: All Scopes, Recently Viewed, Bookmarks, and My Notes. A 'Filter: None' dropdown is visible with a 'Save filter' button. There is a search bar and three filter categories: Grades, Topics, and Bundles. A 'Teacher Toolbox' section offers resources for STEMscopes, with a 'Use Teacher Toolbox' button. A 'Visual Glossary' section provides science instructional resources, with an 'Access Visual Glossary' button. A 'STEMcoach In Action' section offers professional development, with a 'Browse STEMcoach In Action' button. On the right, there are two bundle cards for 5th Grade. The first is 'Grade 5: Bundle 1: Matter and Energy Flow in an Ecosystem' (NGSS 3D Bundles) with a 'Fifth Grade' label. The second is 'Grade 5: Bundle 2: Observing Our Sky' (NGSS 3D Bundles) with a 'Fifth Grade' label. A 'Feedback' button is on the left side of the interface.

Elements of the 5E + IA

The Research-based Lesson Model for STEM

Engage your students in learning with the BSCS 5E Instructional Model, which was developed by Rodger Bybee in the 1980s. The 5E Model is made up of five phases: engagement, exploration, explanation, elaboration, and evaluation. Here at STEMscopes, we chose to add on an I and A to provide you with additional support for your students in need of extra assistance (intervention) or further enrichment (acceleration).



Acceleration

Acceleration helps students push beyond the boundaries of the lesson material and challenge their thinking through PBLs, art, and more.

Engage

Hook your students, discover their background knowledge, and develop the initial context for your lesson.

Explore

Students build their understanding through extensive hands-on, inquiry-based science investigations.

Intervention

Support students with unique materials designed specifically to target student misconceptions.

Explain

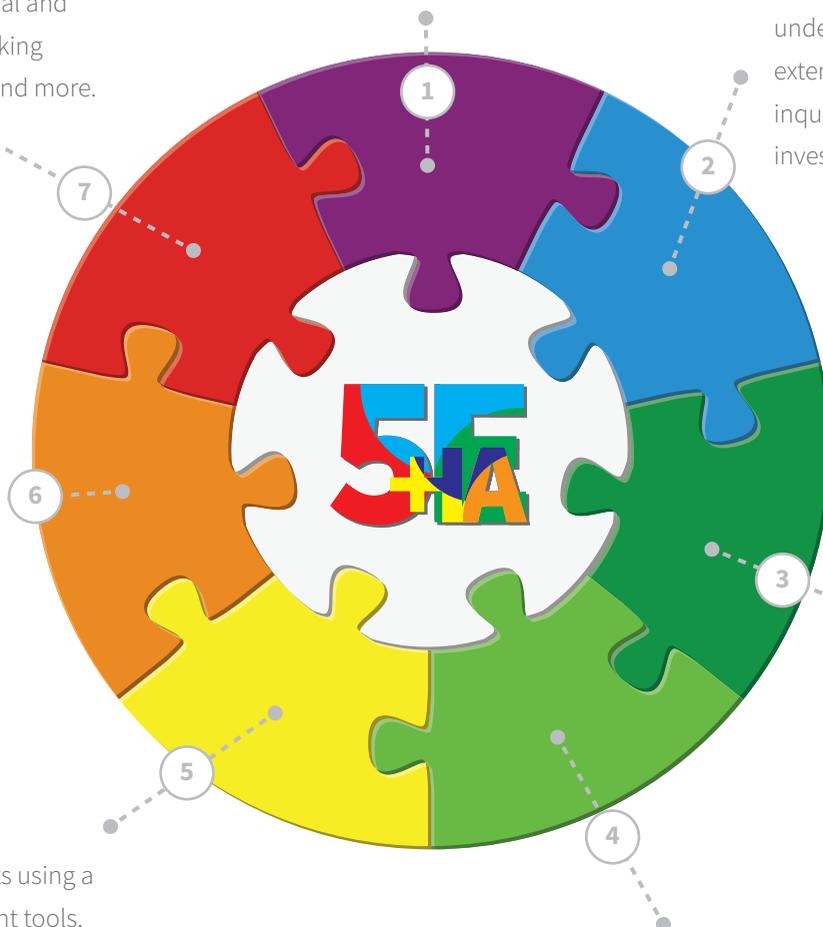
Connect hands-on learning to scientific content through a variety of methods, including direct instruction, STEM videos, games, and expository reading with parent connection activities.

Evaluate

Assess your students using a variety of assessment tools, such as multiple choice, open-ended response, and claim-evidence-reasoning assessments.

Elaborate

Students can dive even deeper through various differentiation opportunities, including cross-curricular connections to reading, math, engineering, and more.



PHENOMENA

Inside a Scope: Ecosystems (5th Grade)

Exploring the 5E + IA Lesson Organization

Engage your students with the 5E + IA, a scaffolded learning model that was specifically designed to promote inquiry-based learning through hands-on exploration of real-world phenomena. Each of our scopes is based on an investigative phenomenon that fuels the 5E+IA lesson activities. You can find all of your teacher essentials like 3D alignment, background information, and materials lists within the “Home” section of our digital curriculum, shown below.

Standards Alignment

Here you can review the 3D focus, assessment boundaries, clarification statements, performance expectations, evidence statements, grade band endpoints, DCI progression, and Next Generation Science Standards Alignment.

Materials List

These self-populating supply lists allow you to quickly find out everything you need to facilitate all hands-on STEMscopes activities. To save you time, we separated list materials into consumable and reusable items.

CCC and SEP Scoring Rubrics

Monitor your students’ development across a grade level (novice, emerging, or proficient) with our scoring rubrics for crosscutting concepts and science and engineering practices.

Home Planner Bundles **Scopes** Standards Students Assessments Help



Matter Is Everywhere

Topics ▾

Grade Fifth Grade - 3D

Standards ▾

Curriculum Area Science

Bookmark Scope

Home ▾

Engage ▾

Explore ▾

Explain ▾

Elaborate ▾

Evaluate ▾

Intervention ▾

Acceleration ▾

≡ All



Student Wondering of Phenomena

How do we know matter exists, even if it cannot be seen?

Performance Expectations

5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen.

Clarification Statement: Examples of evidence could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water.

Assessment Boundary: Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles.

3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Essentials

Standards Alignments **T**

Materials List **T**

Answer Keys **T**

Teacher Background **T**

Teacher Background **ESP** **T**

CCC and SEP Scoring Rubric **T**

Edit Scope

Embedded Digital Features

Tools for 21st-Century STEM Teaching

The STEMscopes digital platform is filled with embedded tools to make your students' learning easier and more interactive. From digital notebooks that allow students to draw on-screen to advanced note-taking tools, our digital features work across any device, on any browser, at any time. Explore a few of our favorite features found in each of our 5E+IA scope modules below:

Annotations and Highlighting

Both you and your students can highlight or add notes to any on-screen text.

Text-to-Speech—Hear it Aloud

Activate read-aloud functions to support ELLs with their language development and reading comprehension.

Embedded Dictionary

Use the integrated dictionary to decipher new academic terms and vocabulary.

Print-Friendly Function

Instantly re-format on-screen text to streamline print, save on paper, and use less ink.

Google Drive Integration and Editable Formats

Download editable versions of student and teacher resources, available in Spanish and English, or push them to your Google Drive account for integration with Google Classroom.

