Accelerate LEARNING
THE LEADER in STEM EDUCATION

STEMscopes NGSS 3D
K-12 SCIENCE

GUIDED PREVIEW

Explore and Navigate STEMscopes Science NGSS 3D

TABLE OF CONTENTS

This guide is fully hyperlinked for seamless navigation. Click any **blue** text to jump to specific sections and to access linked files directly from this guide.

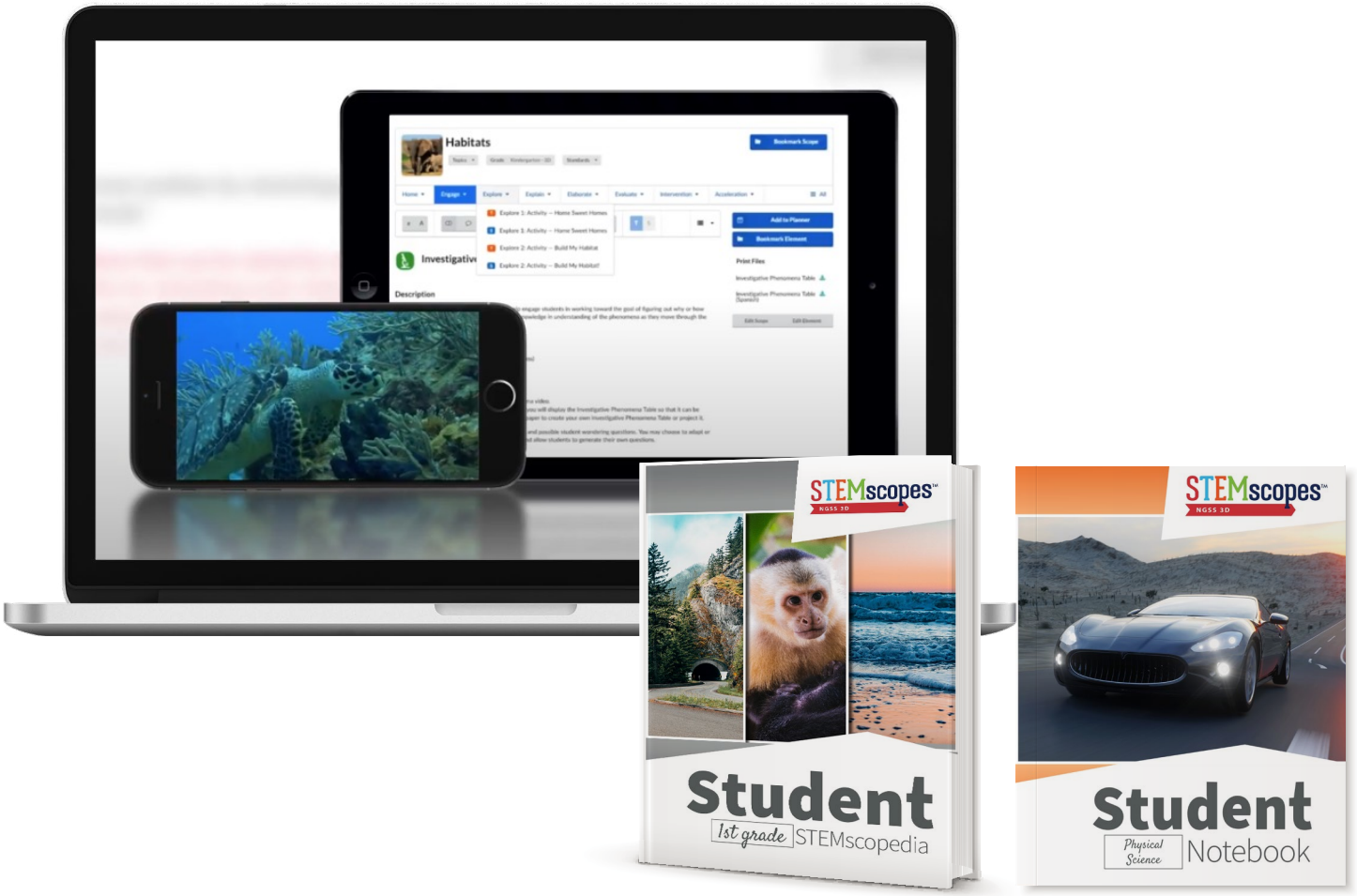
Welcome to STEMscopes Science NGSS 3D

STEMscopes Science NGSS 3D is an award-winning science curriculum crafted to provide the flexibility needed to address the unique needs of every student and teacher. Whether implemented online, using our printed materials, or applied with a blended approach, our program adapts seamlessly to any classroom environment.

This guide will assist you in navigating the STEMscopes Science platform and exploring the essential learning resources available within the curriculum.

Learning resources can be assigned to students in various formats, including:

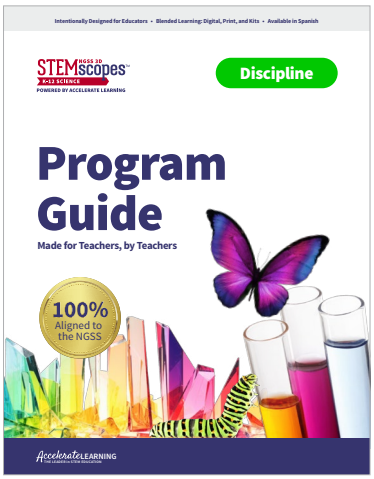
- Directly within the STEMscopes digital interface
- Digital assignments via Google Classroom or other LMS platforms
- Downloadable PDFs to print
- Editable Google files
- From the printed student workbook



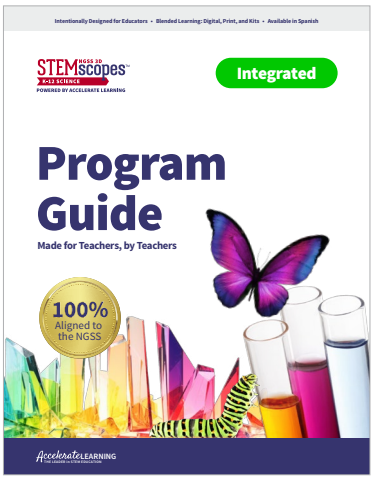
Eager to Explore More than Platform Navigation?

We offer a wealth of additional resources, including detailed information on alignment, key NGSS elements, and instructional supports designed to foster success for all students. Explore course storylines, pacing, lesson design, print materials, and more with our other guides.

PROGRAM GUIDES

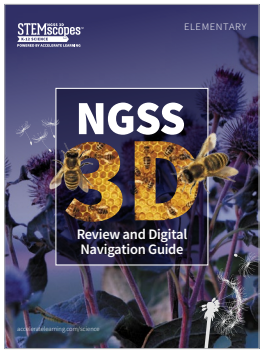


K-12 DISCIPLINE

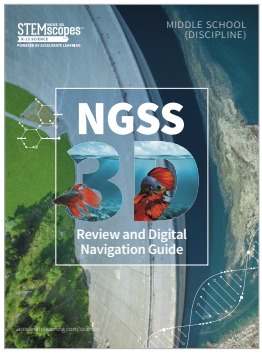


K-12 INTEGRATED

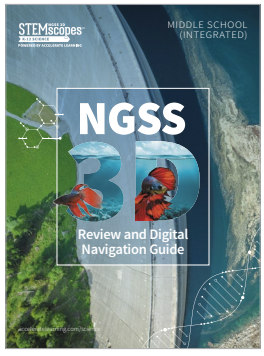
REVIEW & NAVIGATION GUIDES



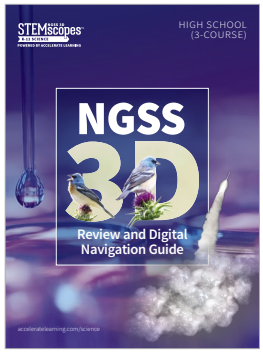
K-5 ELEMENTARY



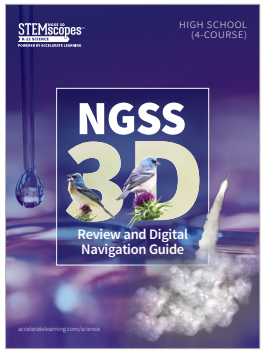
6-8 MIDDLE SCHOOL (DISCIPLINE)



6-8 MIDDLE SCHOOL (INTEGRATED)



9-12 HIGH SCHOOL (3-COURSE)

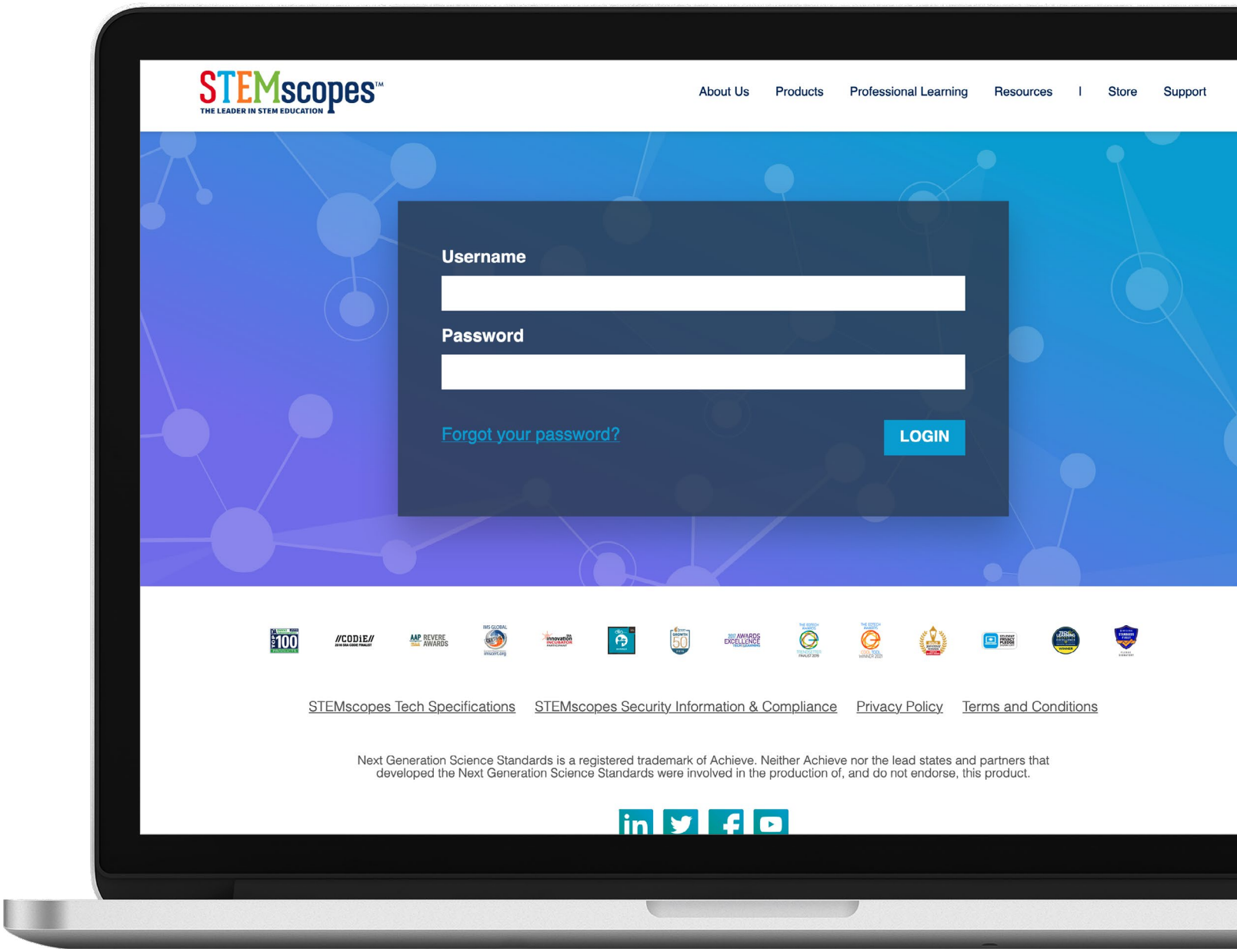


9-12 HIGH SCHOOL (4-COURSE)

Log In

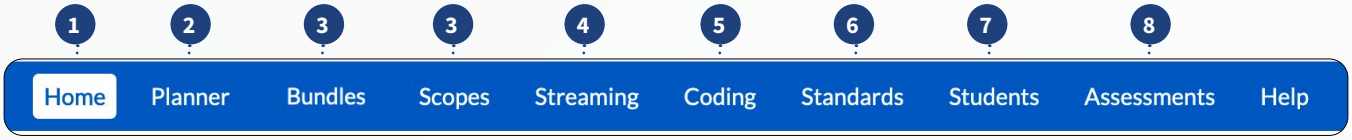
Access our full curriculum online in two easy ways:

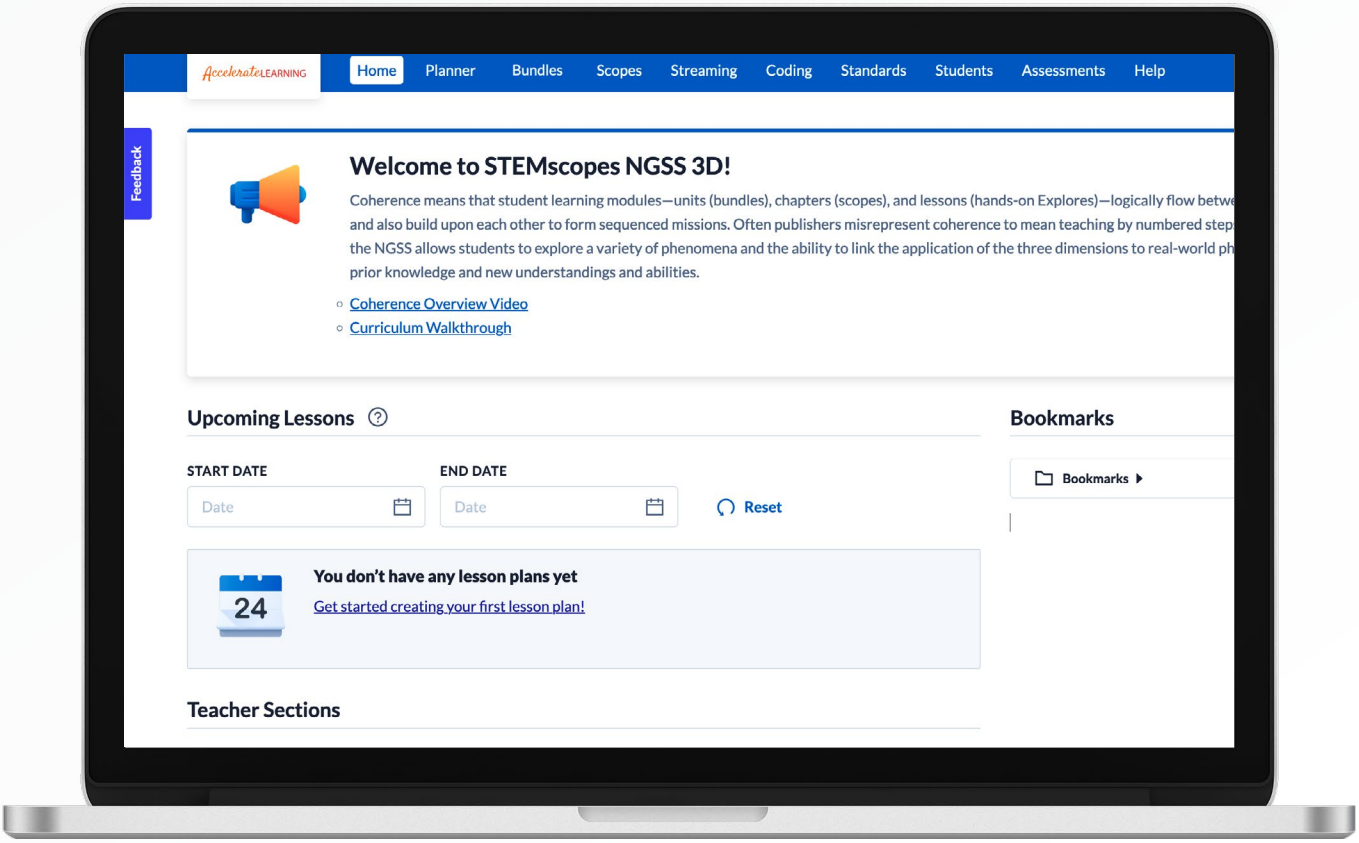
1. Log in using your district's unique review URL and credentials.
2. Request digital access at **acceleratelearning.com/science/ngss**.



Main Navigation Bar

1. Access your Dashboard and quick links to bookmarked curriculum resources.
2. Add lessons directly to your calendar.
3. Navigate the curriculum by bundle (units) or scopes (lessons).
4. Enhance instruction with premium BBC videos (add-on feature).
5. Integrate coding into your STEM lessons (add-on feature).
6. Search the curriculum by the NGSS standards.
7. View class sections and grade student work.
8. Build custom assessments with the STEMscopes Science test bank.

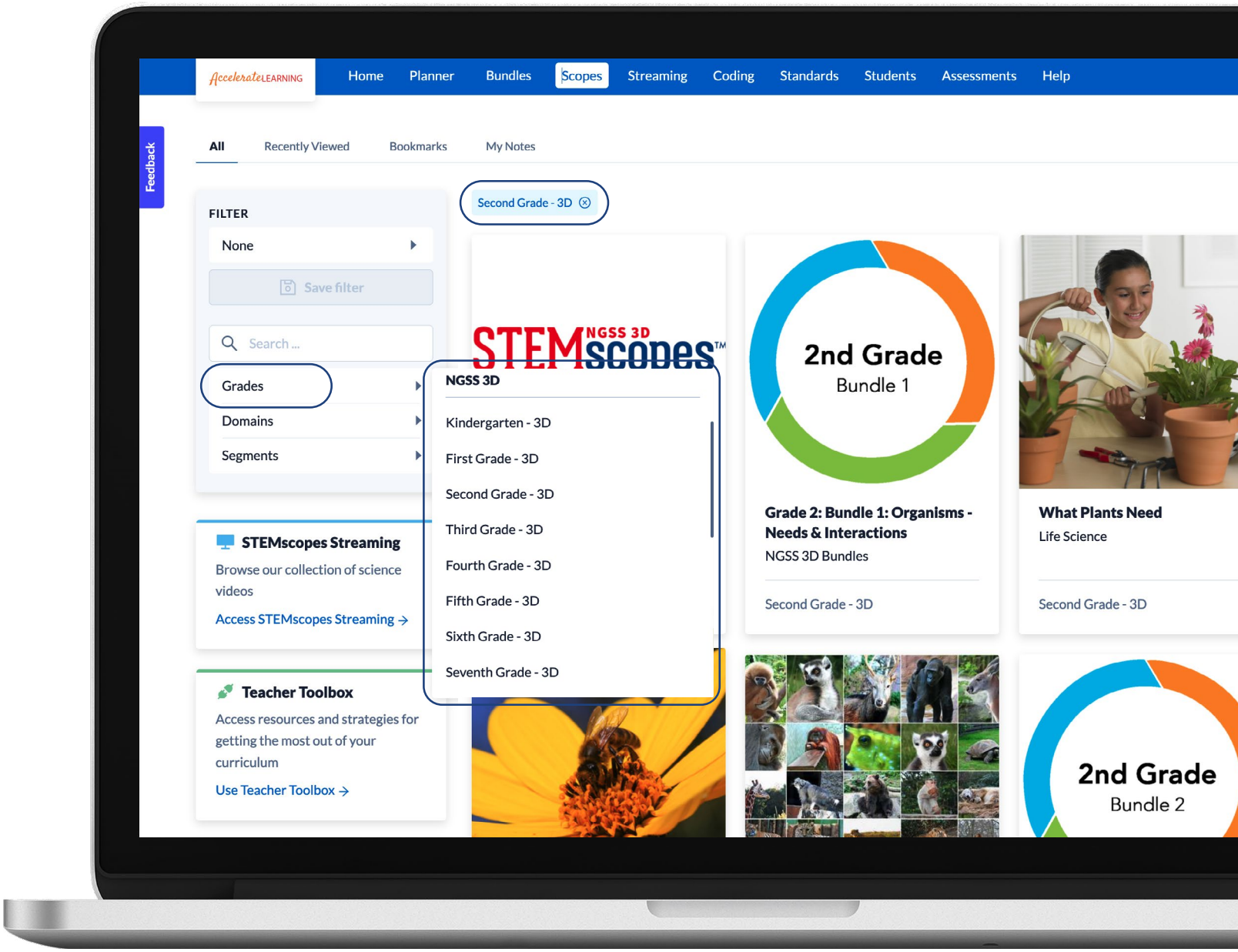




Navigate to a Grade Level

1. Click on **Scopes** in the blue navigation bar.

2. Select your **grade or course** from the drop-down menu. To switch to a different grade, click the "x" above the tiles to close the current grade, then choose a new grade from the drop-down menu.



Planning Resources

ACCESS YEAR-LONG RESOURCES

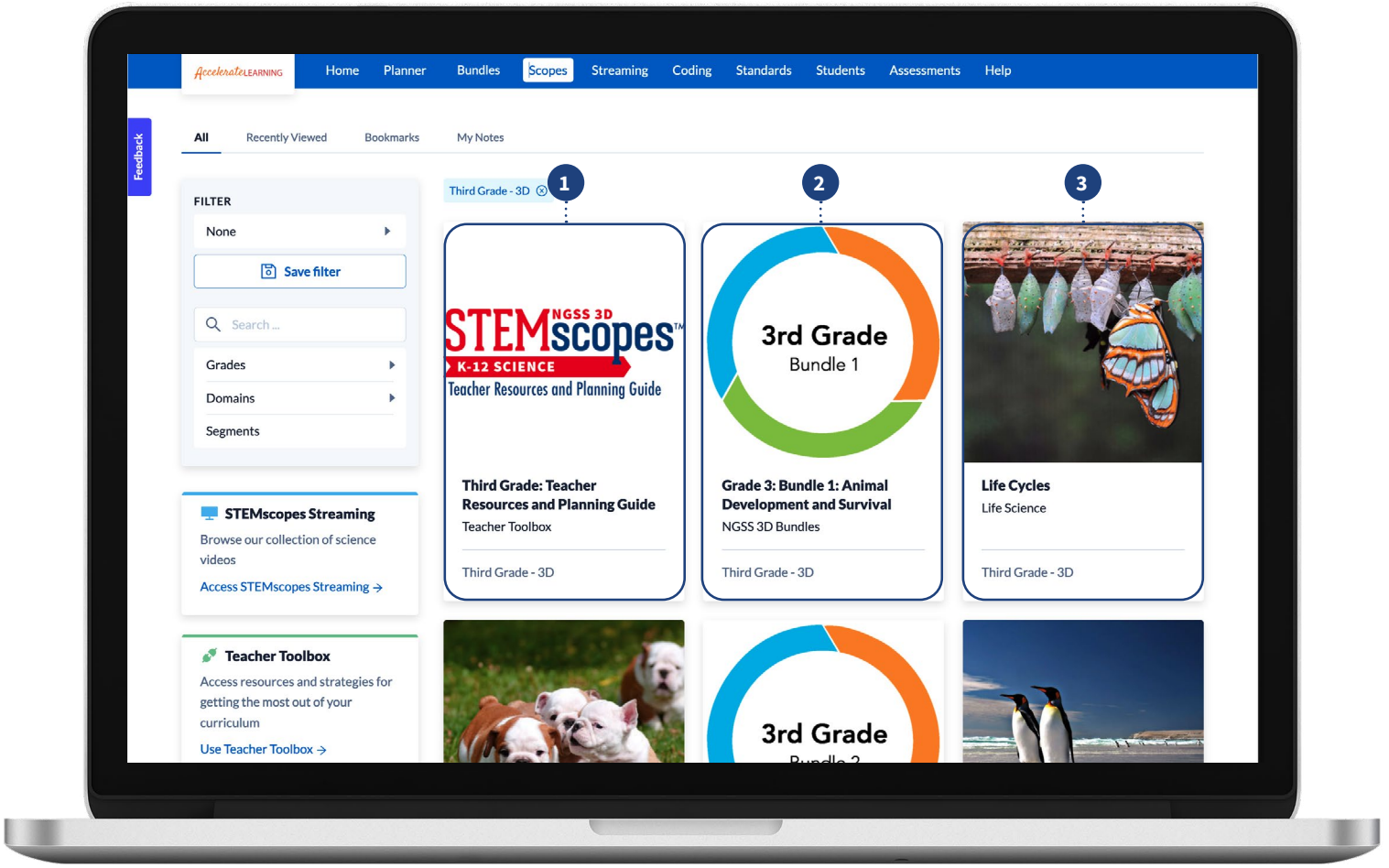
1. Available for Grades K-8. For high school planning resources, please refer to the printed teacher guide.

ACCESS UNIT RESOURCES

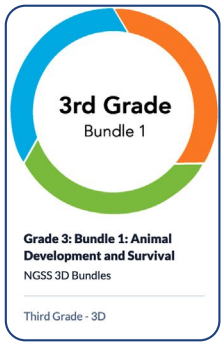
2. The curriculum is organized into units called bundles, with each unit starting at a marked bundle tile.

ACCESS LESSON RESOURCES

3. Each bundle (unit) consists of one or more scopes, similar to chapters. Click on a scope to access all the resources needed for teaching individual lessons.



Access Unit Resources

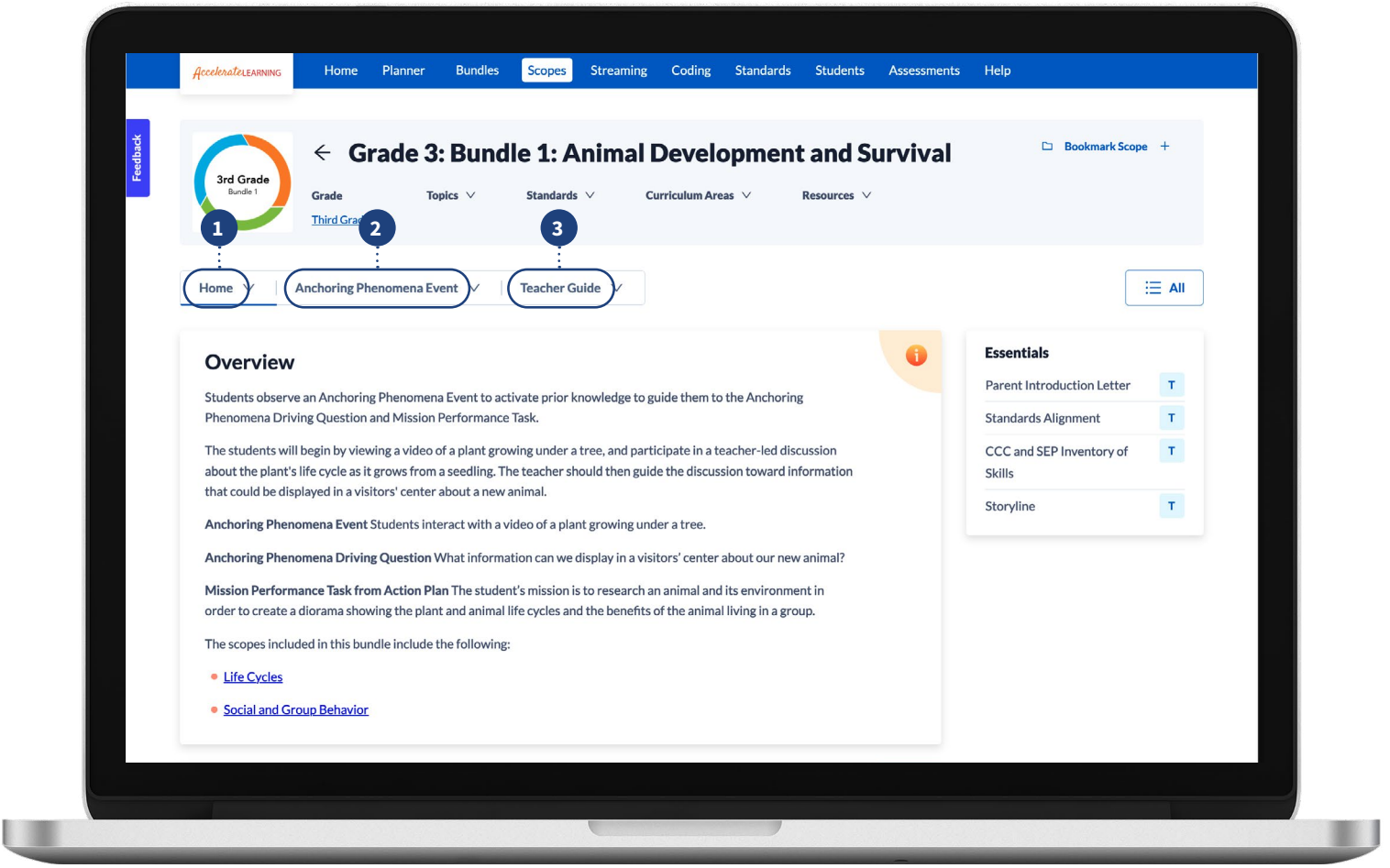


The curriculum is organized into units called bundles, with each unit starting at a marked bundle tile. Click on a bundle tile to open the bundle Toolbox, where you'll find unit-level resources for instruction.

Within each bundle, you can:

1. View the standards addressed and a storyline document to help introduce the unit's anchoring phenomenon and mission project.
2. Access parent and student letters, which introduce the unit.

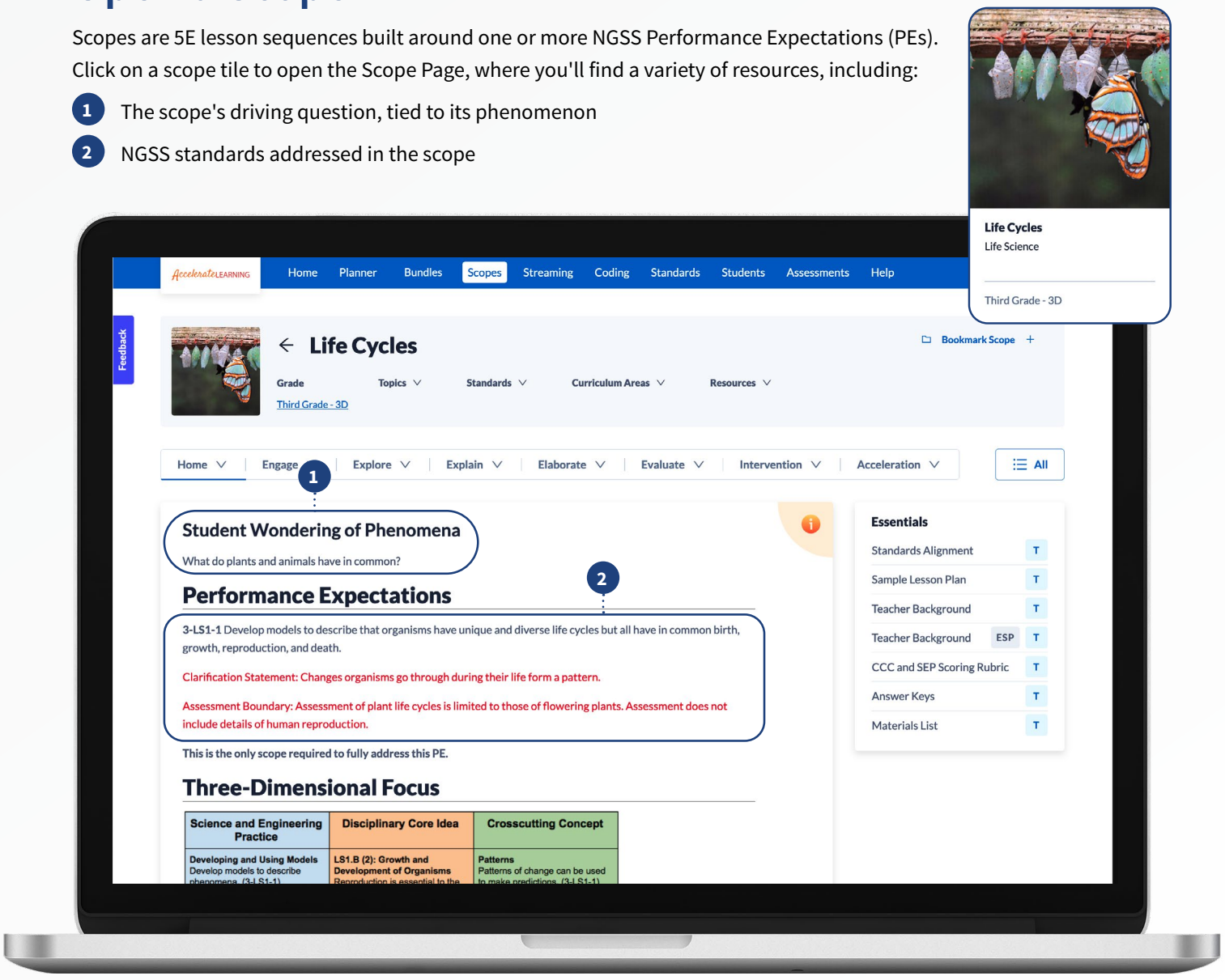
   Explore photos, videos, or scenarios designed to spark student curiosity and lead to a central question or problem.
3. Utilize tools to facilitate a unit-level project, connecting learning across the multiple scopes within the bundle.



Open a Scope

Scopes are 5E lesson sequences built around one or more NGSS Performance Expectations (PEs). Click on a scope tile to open the Scope Page, where you'll find a variety of resources, including:

1. The scope's driving question, tied to its phenomenon
2. NGSS standards addressed in the scope

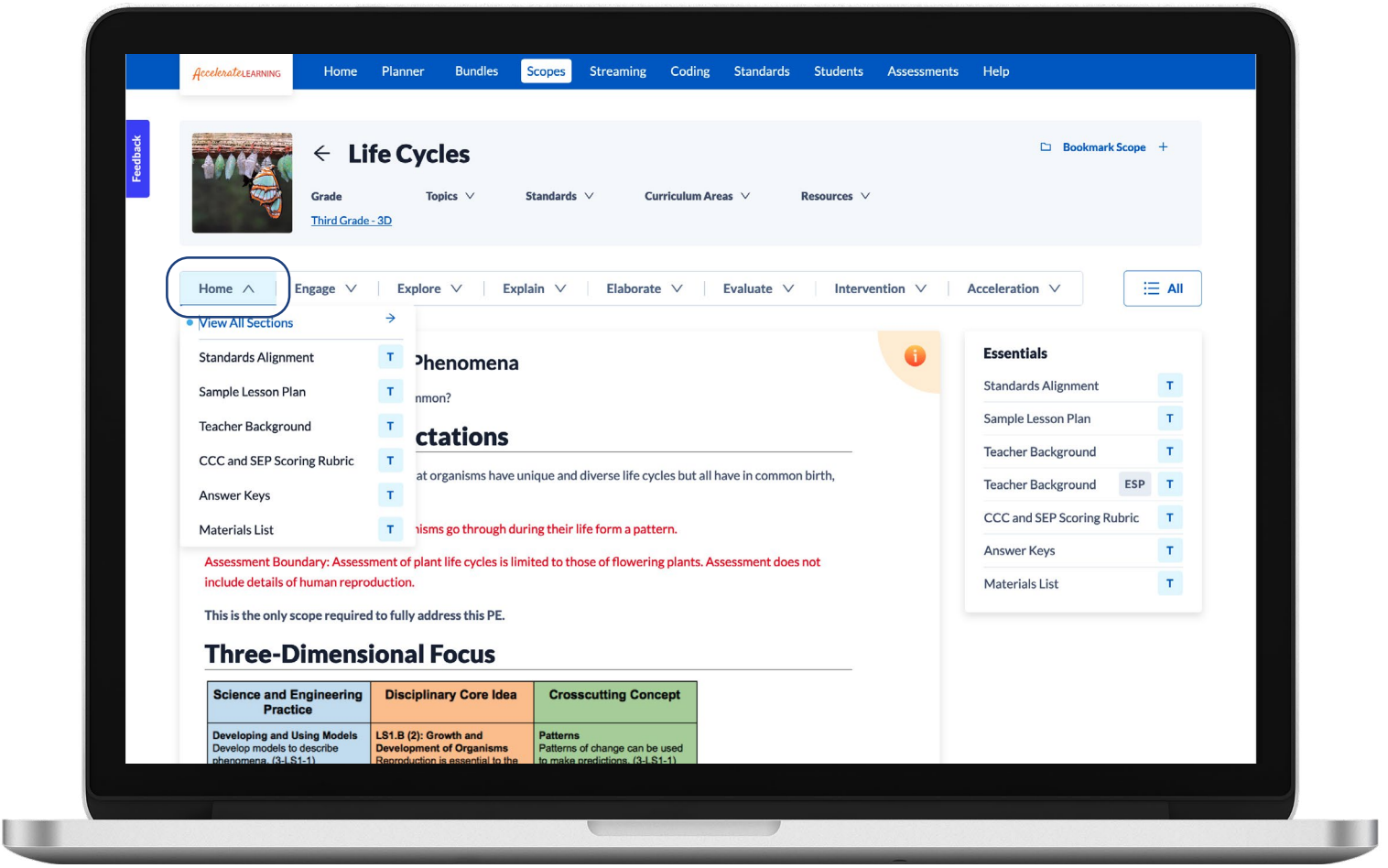


Navigating the White Menu Bar

HOME

Click on the **Home** tab to access teacher support resources for planning instruction within this scope.

- **Standards Alignment** – View the NGSS 3D standards covered in this scope and access resources like evidence statements and a DCI progression table.
- **Sample Lesson Plan** – Follow a suggested day-by-day guide for teaching the 5E lesson sequence using resources in this scope.
- **Teacher Background** – Deepen your understanding of the science concepts covered in this scope.
- **CCC and SEP Scoring Rubric** – Assess students' performance on target SEPs and CCCs during Explore activities.
- **Answer Keys** – Access all answer keys for scope activities in one convenient location.
- **Materials List** – Check the materials needed for each hands-on activity.
- **Teacher Scope Presentation** – (Grades 6-12 only) A Google Slides presentation of the learning resources in this scope.

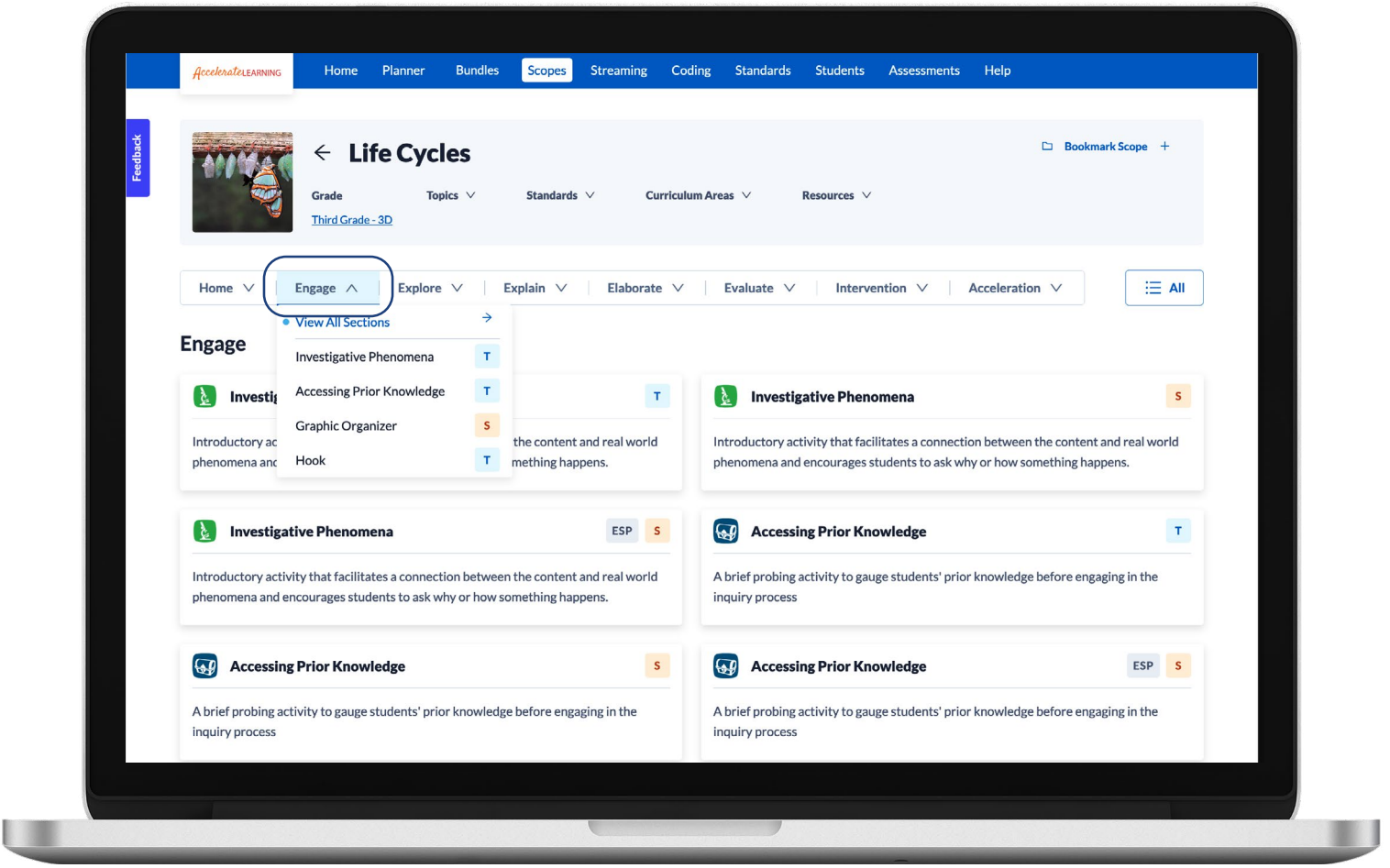


Navigating the White Menu Bar

ENGAGE

Access activities and resources in the **Engage** drop-down menu to introduce phenomena, assess prior knowledge, and spark student curiosity:

- **Investigative Phenomena** – A photo or video that presents a central question or problem for students to explore throughout the scope.
- **Accessing Prior Knowledge** – A formative pre-assessment probe to gauge student background knowledge and uncover preconceptions.
- **Graphic Organizer** – A tool to help students organize information about key concepts as they progress through the scope.
- **Hook** – A hands-on activity designed to excite students about the topic and link introductory concepts to their prior knowledge.



Navigating the White Menu Bar

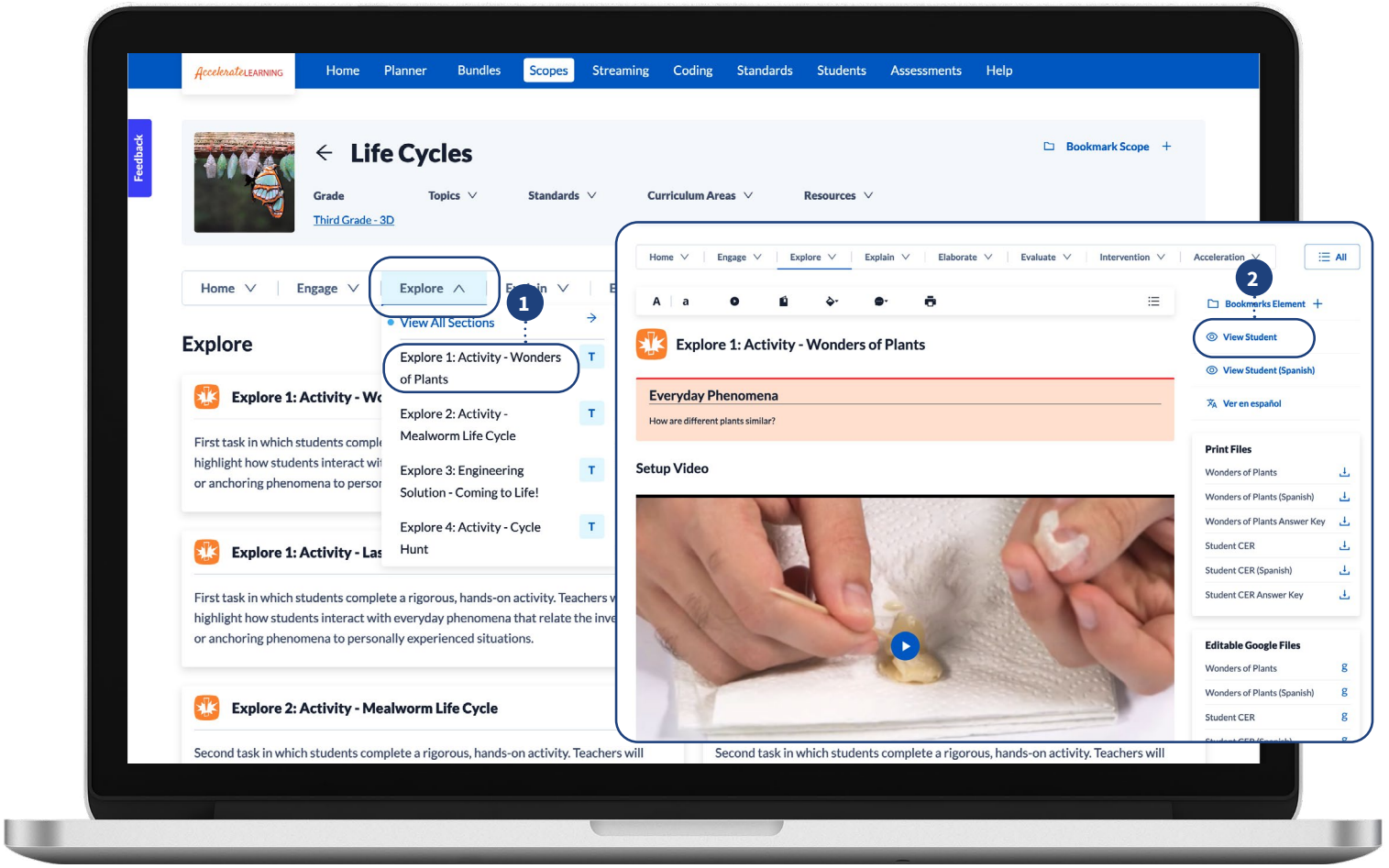
EXPLORE

Access a variety of hands-on inquiry activities in the **Explore** drop-down menu. These activities engage students in science and engineering practices (SEPs) and crosscutting concepts (CCCs) to explore real-world phenomena and develop disciplinary core ideas (DCIs).

The six types of Explore activities are:

- Research
- Inquiry Investigation
- Scientific Investigation
- Engineering Solution
- Tuva (Data Literacy)
- Activity (General)

1. Each activity has a setup video that explains how to prepare and do the activity. These videos can be assigned to students.
2. Click the **View Student** button to see what this resource looks like in the student interface to assign work to students.

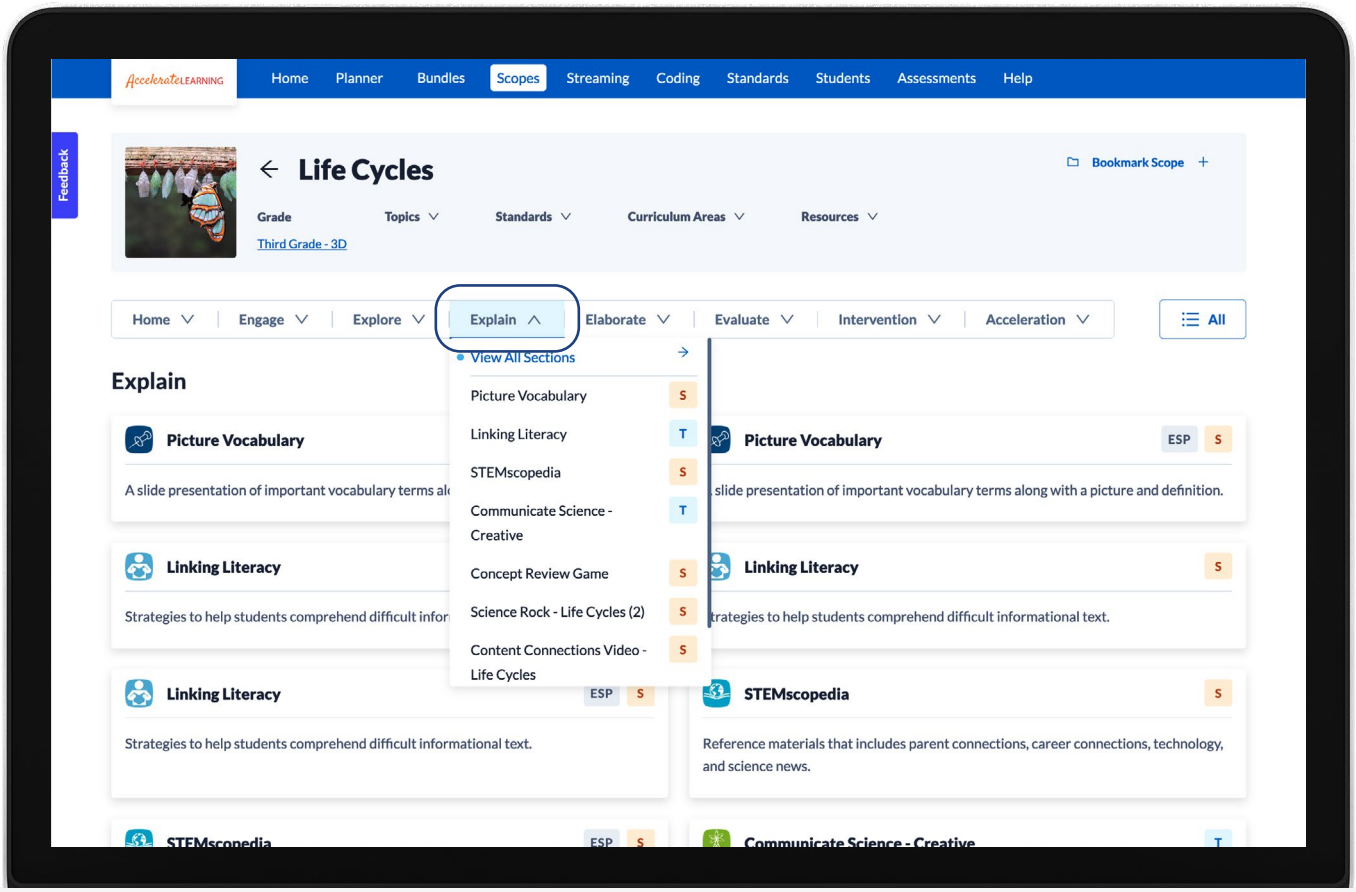


Navigating the White Menu Bar

EXPLAIN

Access resources in the **Explain** drop-down to support student sense-making of the hands-on Explore activities. These resources reinforce key concepts, strengthen nonfiction literacy skills, and deepen understanding of the scope's scientific concepts, linking back to the investigative phenomena.

- **Picture Vocabulary** – Slides and strategies to reinforce key terms introduced in this scope.
- **Linking Literacy** – Graphic organizers and activities for use before, during, and after reading STEMscopedia, building nonfiction literacy skills.
- **STEMscopedia** – Nonfiction text explaining key science concepts in this scope.
- **Communicate Science** – Verbal or written assignments that encourage critical thinking (e.g., speeches, debates, dialogues).
- **Concept Review Game** – A quiz-style game for reviewing vocabulary and key concepts.
- **Science Rock** (available in some K-8 scopes) – Engaging music videos with lyrics that reinforce key science concepts.
- **Content Connections Videos** – Documentary-style videos explaining the key science concepts addressed in this scope.

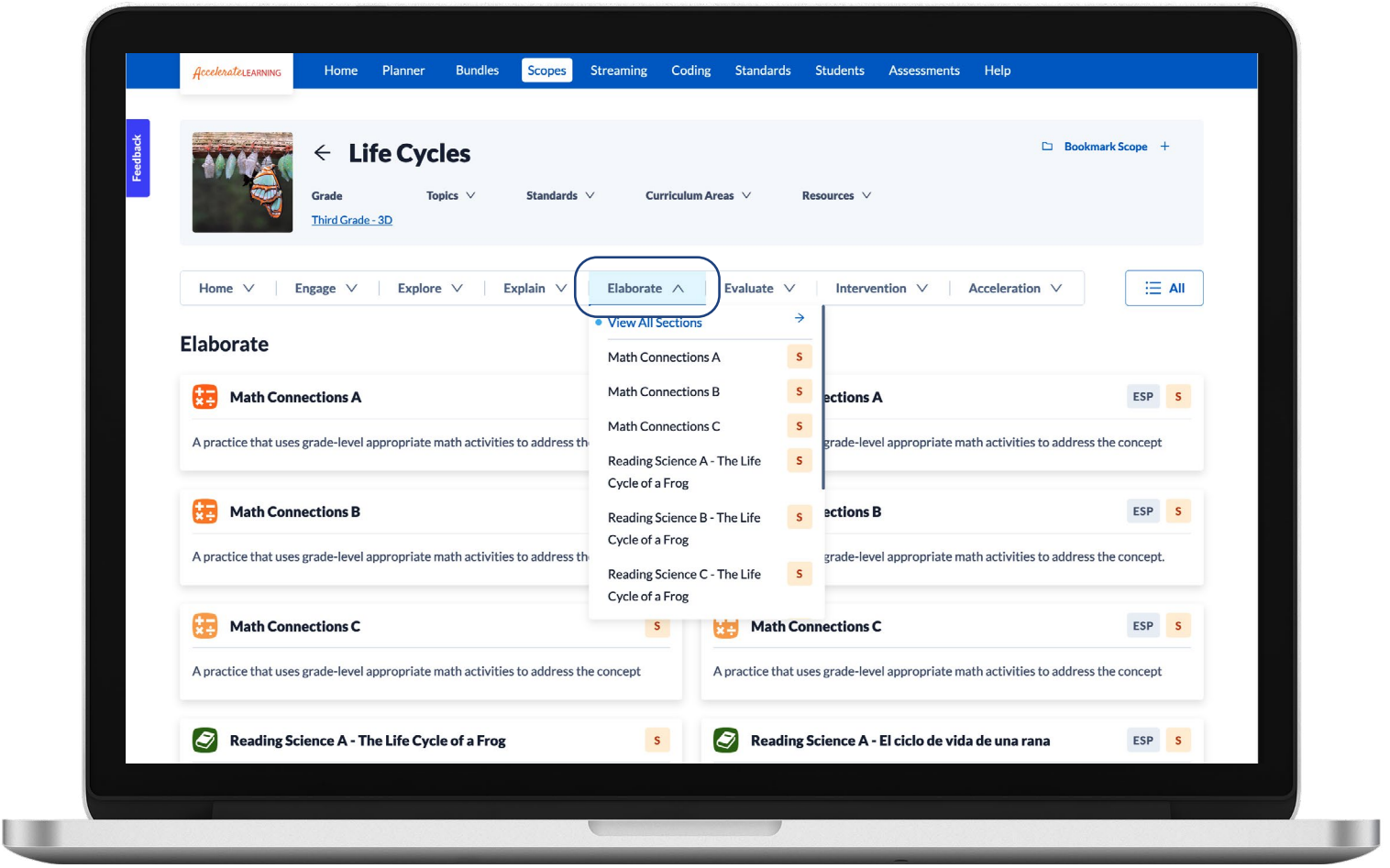


Navigating the White Menu Bar

ELABORATE

Click on the Elaborate tab to access tools that integrate cross-curricular connections, such as math and reading. These resources encourage higher-order thinking, deepen understanding of the Investigative Phenomena, and connect learning to real-world applications.

- **Math Connections** – Students apply math skills within the context of the science topic.
- **Reading Science** – An article introducing additional phenomena related to the science topic.
- **Science Today** – A current event video or article connected to the science topic.
- **Career Connections** – A documentary-style video exploring a career in a field related to the topic.
- **Scientist Spotlight** – A brief biography of a scientist working in a related field.
- **Simulations** – Interactive online simulations that provide further practice.



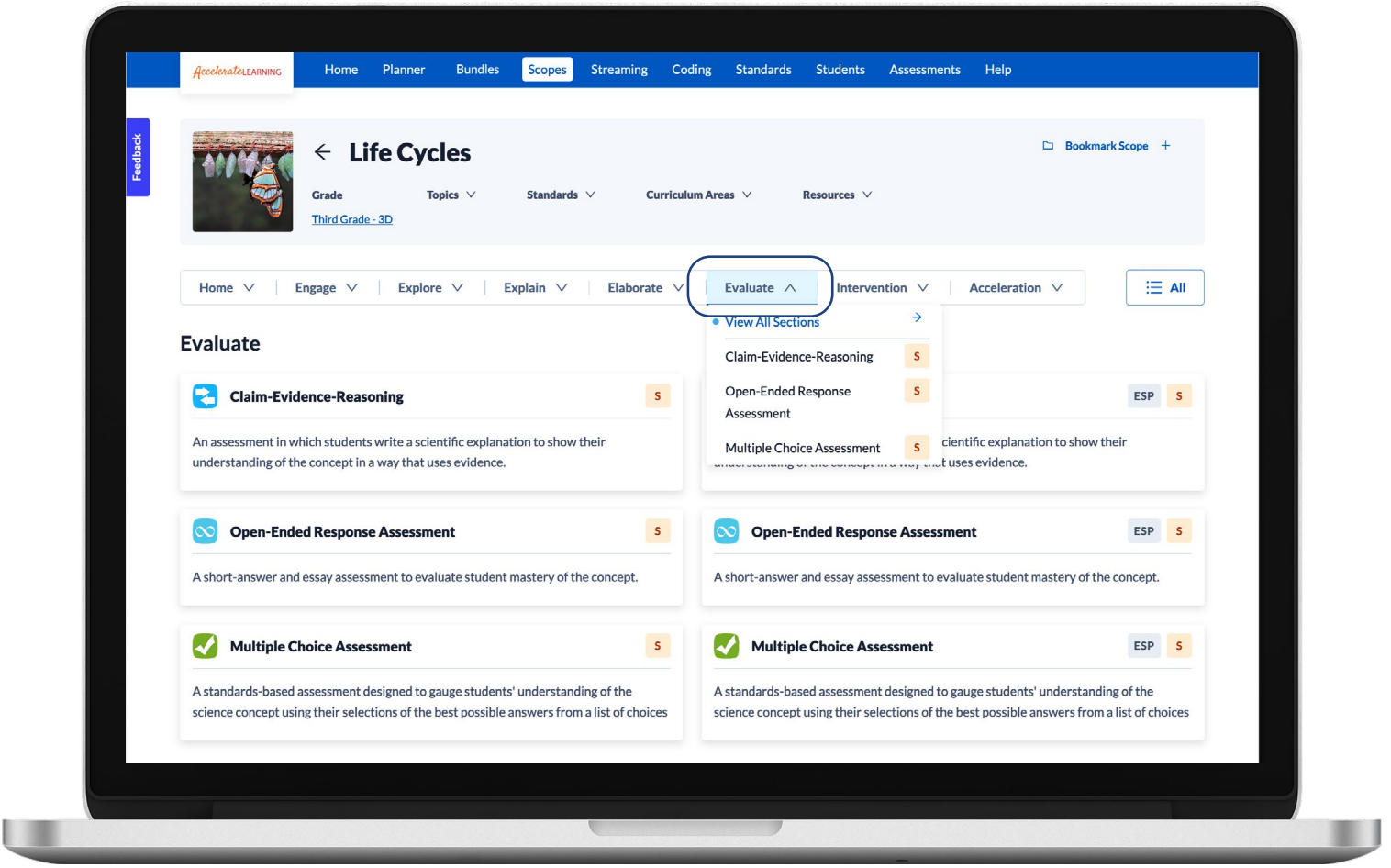
Navigating the White Menu Bar

EVALUATE

Click on the **Evaluate** tab to access three types of summative assessments: Claim-Evidence-Reasoning (CER), Open-Ended Response, and Multiple Choice.

Use these assessments and rubrics to track student progress toward mastering the target standards.

- **Claim-Evidence-Reasoning (CER)** – An assessment where students develop an explanation or argument addressing the investigative phenomena, supported by evidence and reasoning from the lesson sequence.
- **Open-Ended Response** – A fill-in-the-blank short answer assessment to gauge understanding of key vocabulary and concepts.
- **Multiple Choice** – A set of questions to assess basic understanding of key vocabulary and concepts.

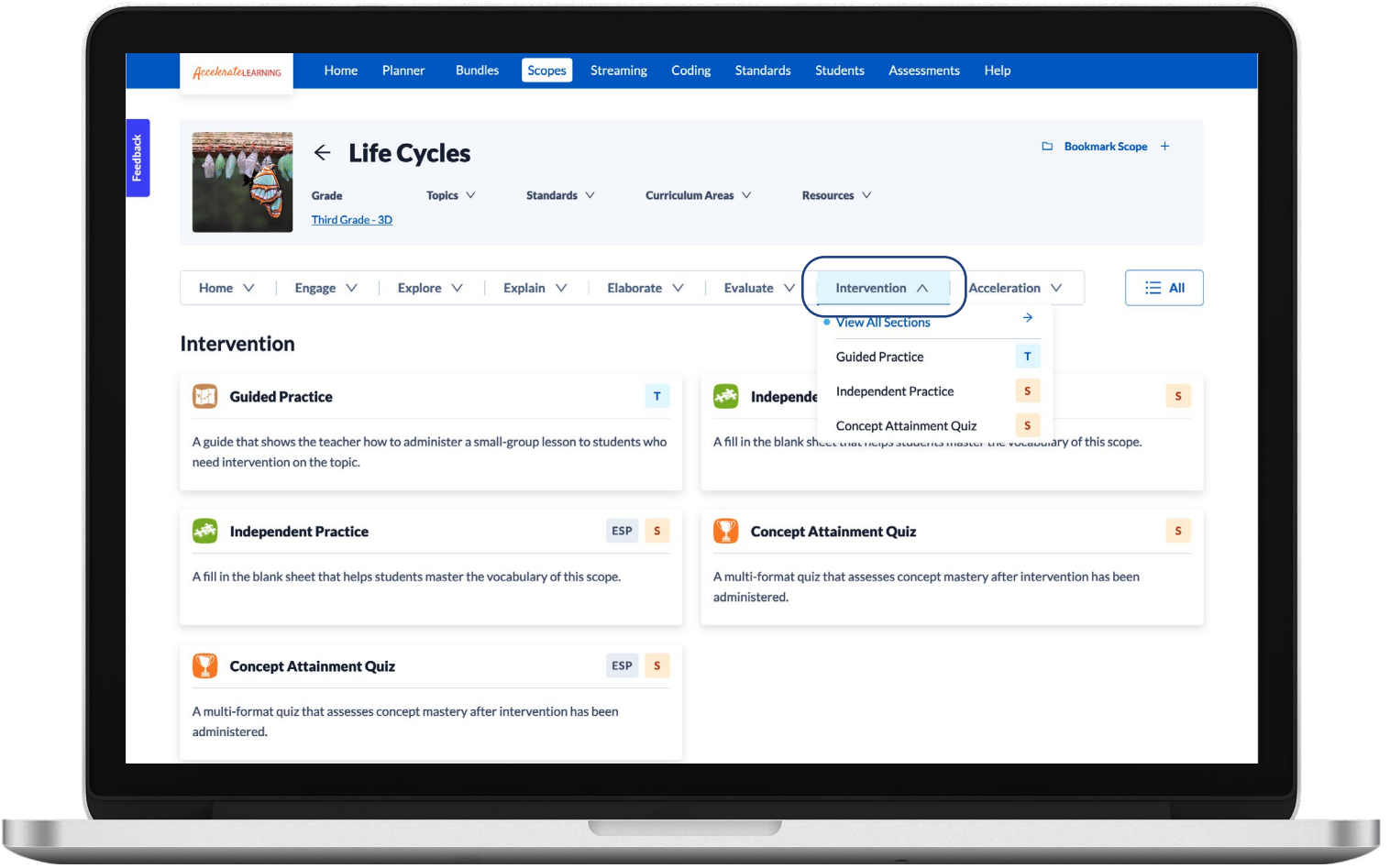


Navigating the White Menu Bar

INTERVENTION

Click on the **Intervention** tab to access tools for providing targeted support to struggling students in one-on-one or small group settings.

- **Guided Practice** – An activity or discussion designed to help students who need extra support with key vocabulary and concepts.
- **Independent Practice** – A worksheet for student practice and reflection on their understanding of key vocabulary and concepts.
- **Concept Attainment Quiz** – A formative assessment quiz for remediation or modification, designed for struggling students.

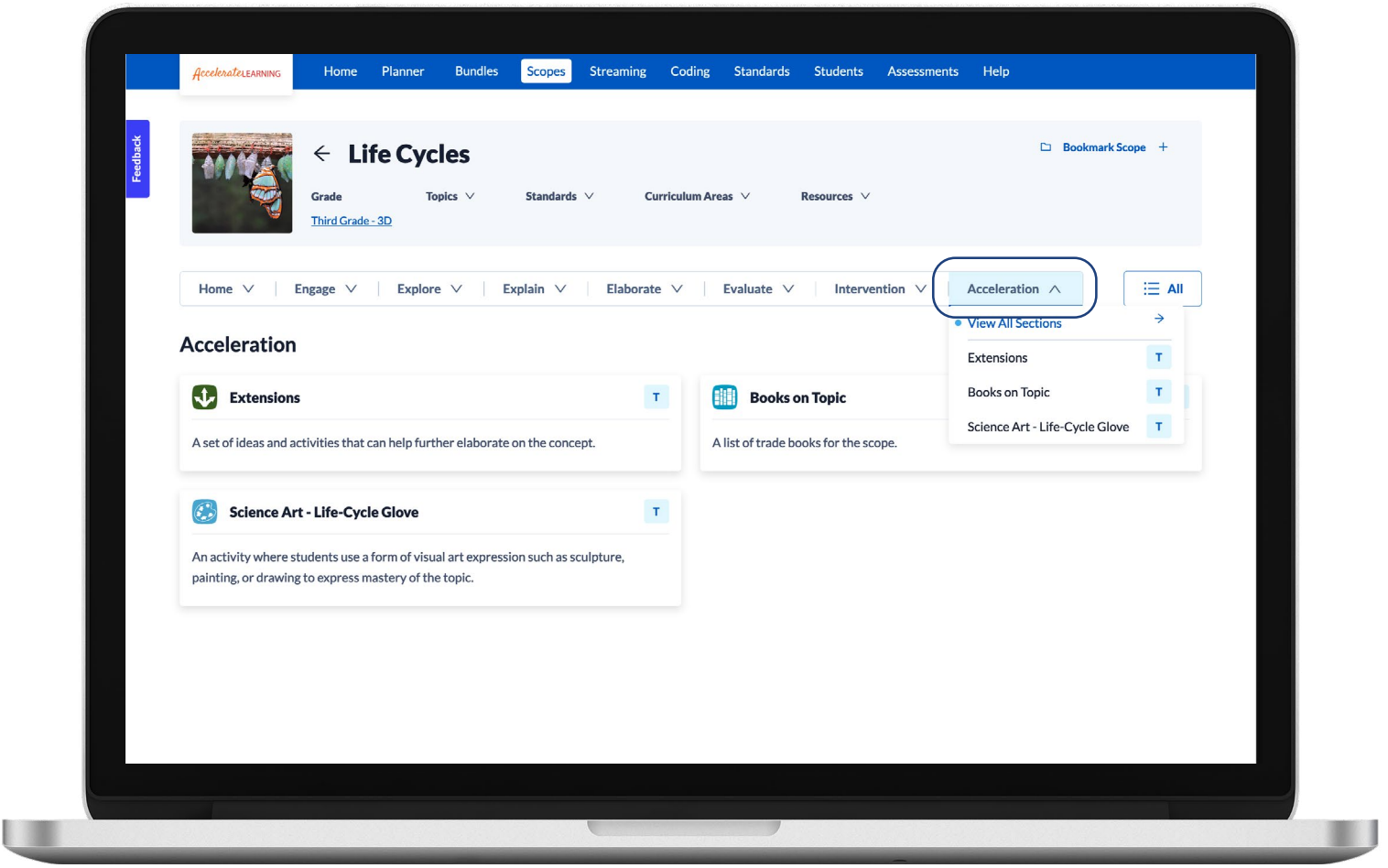


Navigating the White Menu Bar

ACCELERATION

Click on the **Acceleration** tab to access enrichment resources that provide students with opportunities for deeper exploration, creativity, and independent practice.

- **Science Art (available in K-8)** – An art project related to the science topic in the scope.
- **Books on Topic** – A list of fiction and nonfiction literature connected to the science topic being studied.
- **Extensions** – Additional activities related to the scope's scientific concepts.
- **Project-Based Learning** (available in select scopes) – A prompt for a project that encourages higher-level thinking where students can apply key vocabulary and concepts.

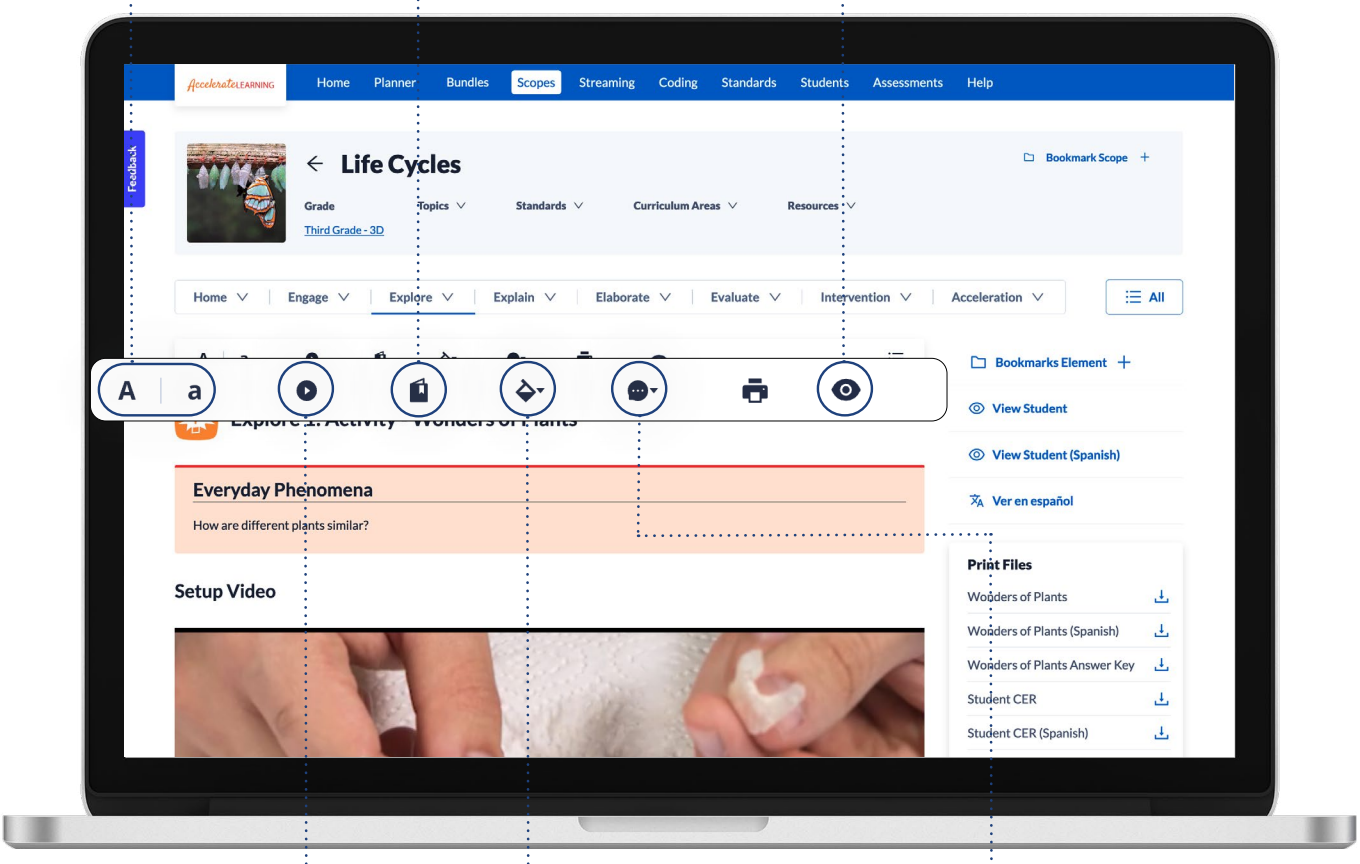


Accessibility and Functionality

Adjustable Text Size
Increase or decrease text size.

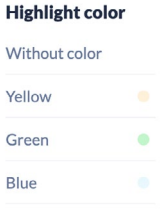
Embedded Dictionary Tool
Define academic terms and vocabulary.

Answer Key
Display or hide answers.

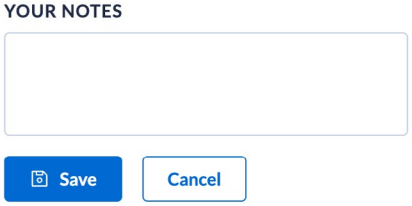


Text-to-Speech
Listen to the written text being read out loud.

Highlight Text
Highlight important text.

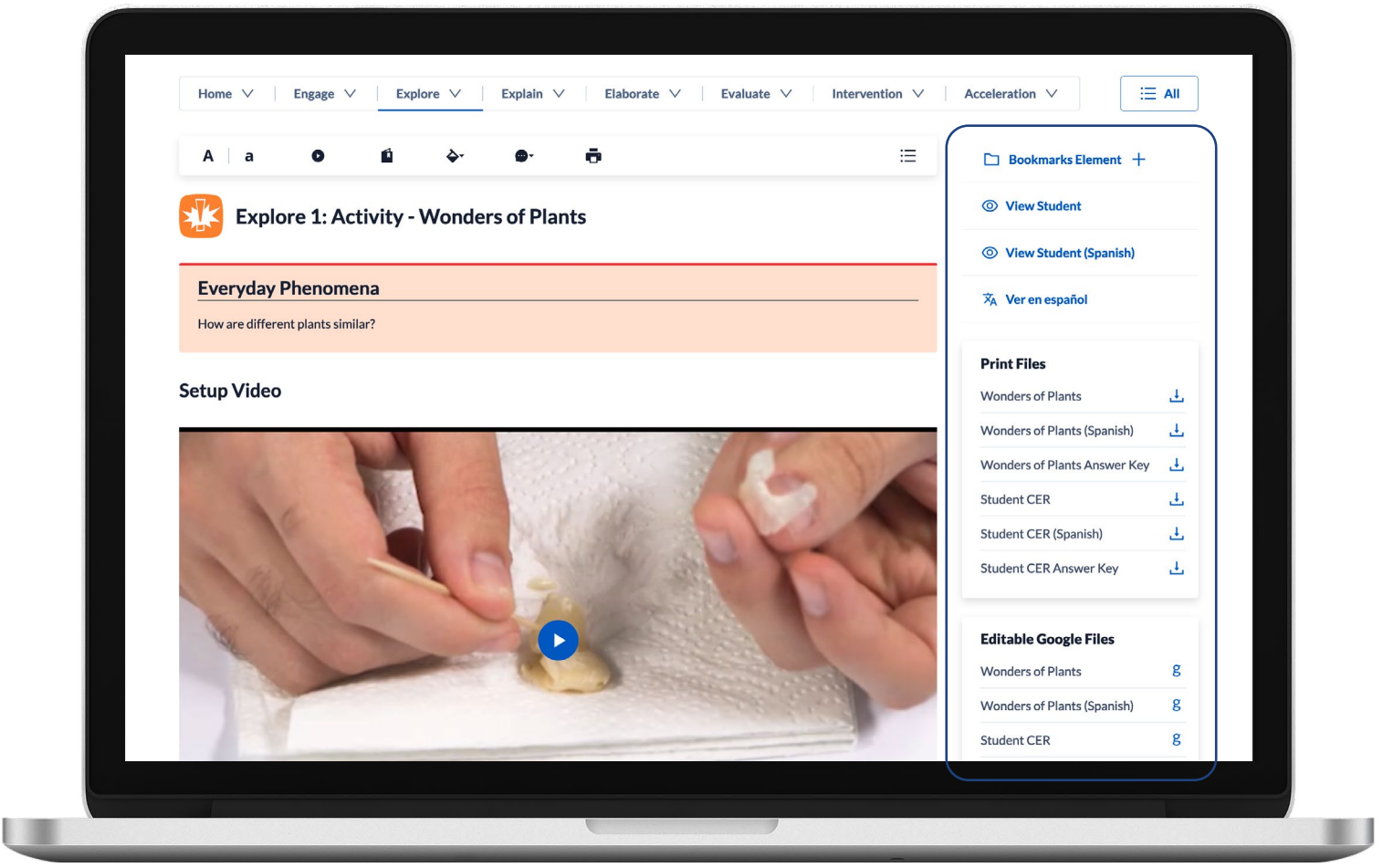


Custom Annotations
Add notes on the platform.



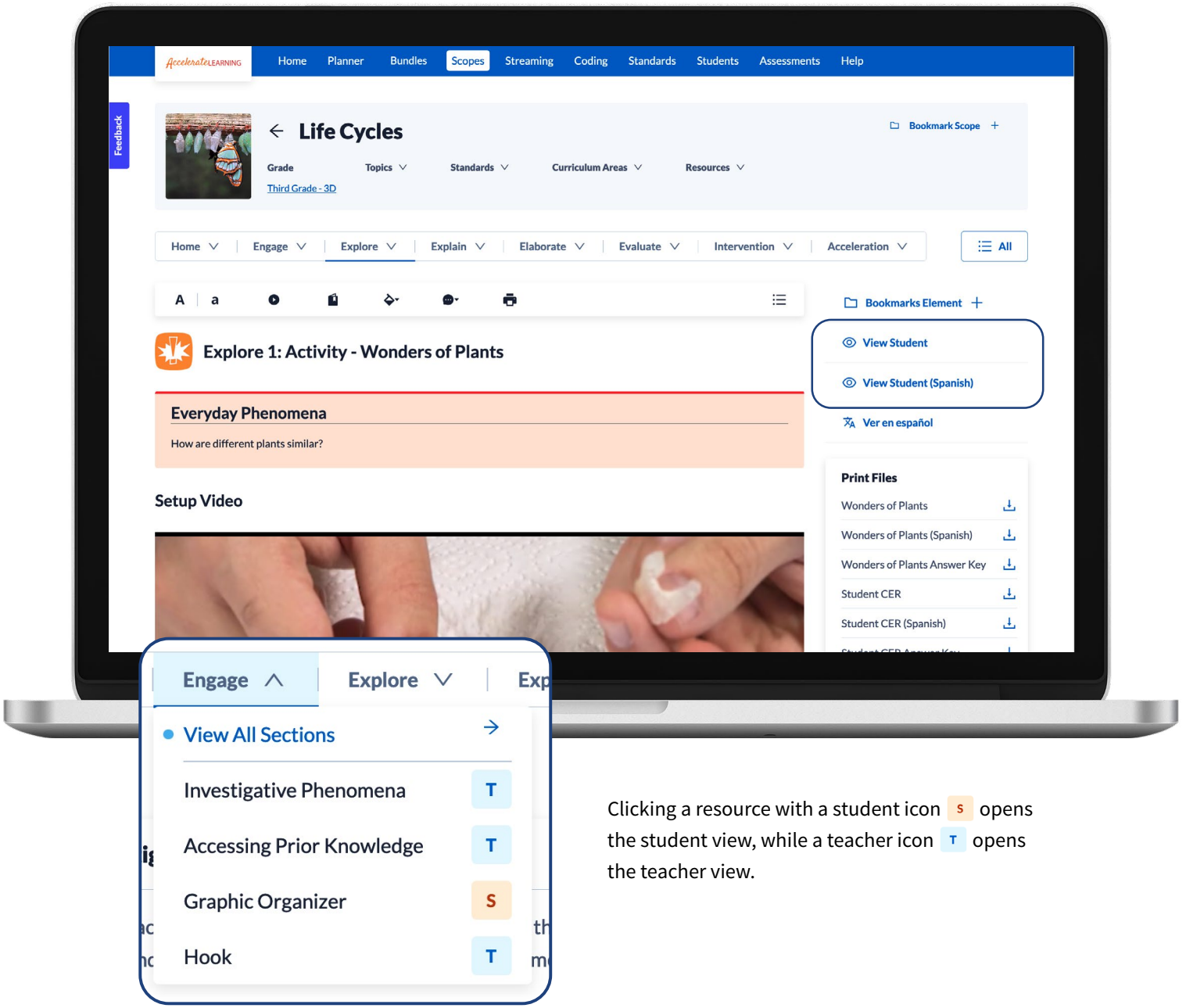
Scope Toolbar

- **Add to Planner** – Add this resource to your lesson planner.
- **Add to Bookmarks** – Save this resource to your bookmarks for easy access on your Dashboard.
- **View Student Interface** – Preview what this resource looks like for students (only for assignable resources). If you're already in student view, the "Assign to Student" button will appear, allowing you to assign this resource to one or more sections.
- **View in Spanish** – View the resource in Spanish.
- **Download as PDF** – Download the resource as a PDF file.
- **Download as Google Slides/Docs** – Download the resource as editable Google Slides or Google Docs. You'll be prompted to save the file to your Google Drive.



Student View

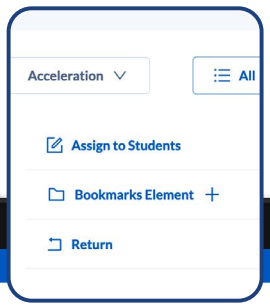
To assign a resource digitally to students, you must be on the **Student View** page. If you are in the teacher view, click the **View Student** button on the right-hand menu to access the student view. If the resource is available in Spanish, you will have the option to open and assign the Spanish version as well.

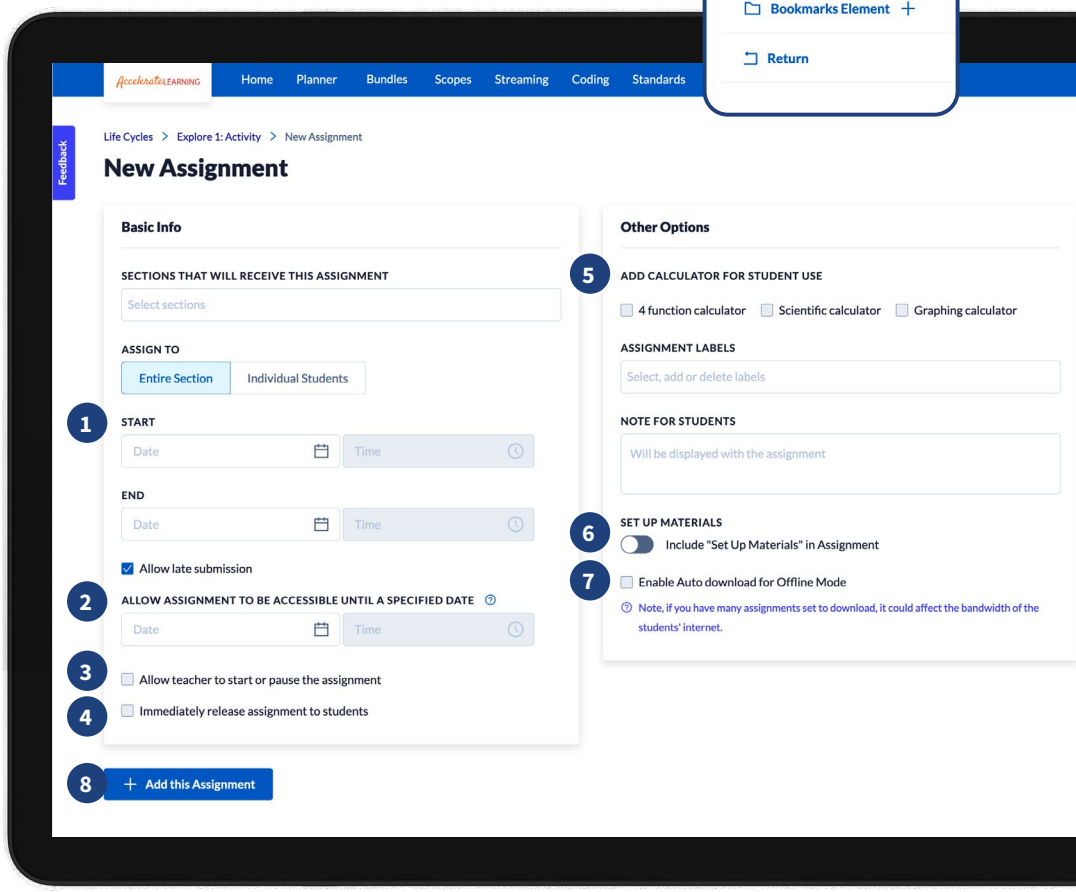


Clicking a resource with a student icon S opens the student view, while a teacher icon T opens the teacher view.

Assign to Students

Once you are on the student view page, click the **Assign to Students** button found in the right-hand menu to open the **New Assignment** window. Here, you can specify which class sections and students to assign the resource to.





1. **Start and End Dates** – The Start Date determines when students can access the resource, and the End Date is the due date.

2. **Allow Late Submission** – Check this option to allow students to continue working on the assignment after the due date. You can also set a specific date after which students can no longer access the assignment.

3. **Temporarily Disable Assignment** – Check this option to prevent students from viewing the assignment. This options is useful for tests spanning multiple days.

4. **Allow Immediate Feedback** – Check this to let students view their performance and the answer key as soon as their work is graded. Uncheck this if you want to control when students receive feedback.

5. **Calculators** – You can provide students with a variety of calculators by clicking here. Use the fields to add labels, notes, and additional instructions to help categorize assignments.

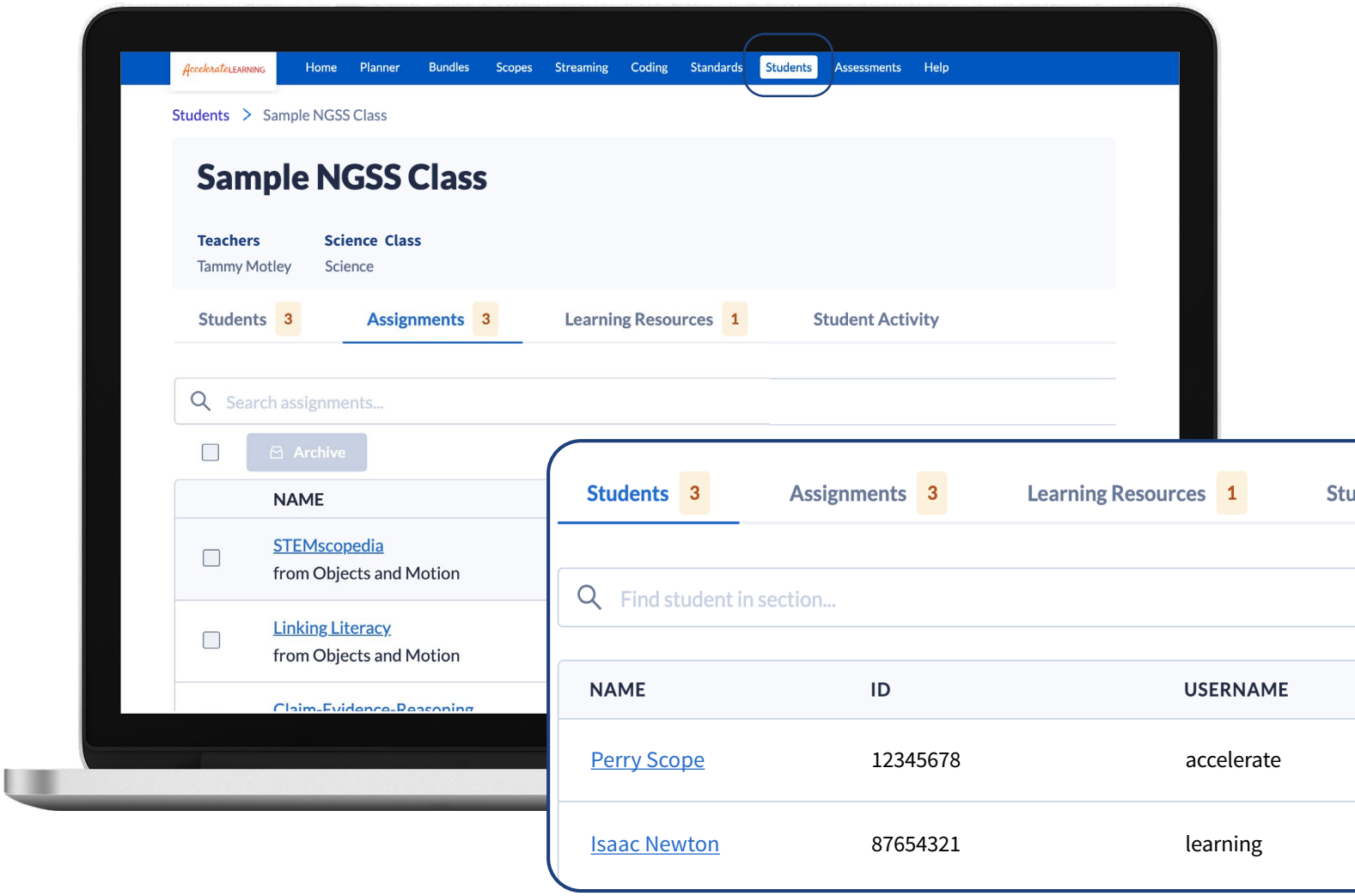
6. **Available for Hook and Explore Activities** – This option is only available for hands-on activities. Toggle it on to allow students to view the setup video for the activity.

7. **Auto Download for Offline Mode** – If enabled, students can download activities for offline completion and submit them once they reconnect to the internet.

8. **Add Assignment** – Click the Add Assignment button when you're ready to assign the activity.

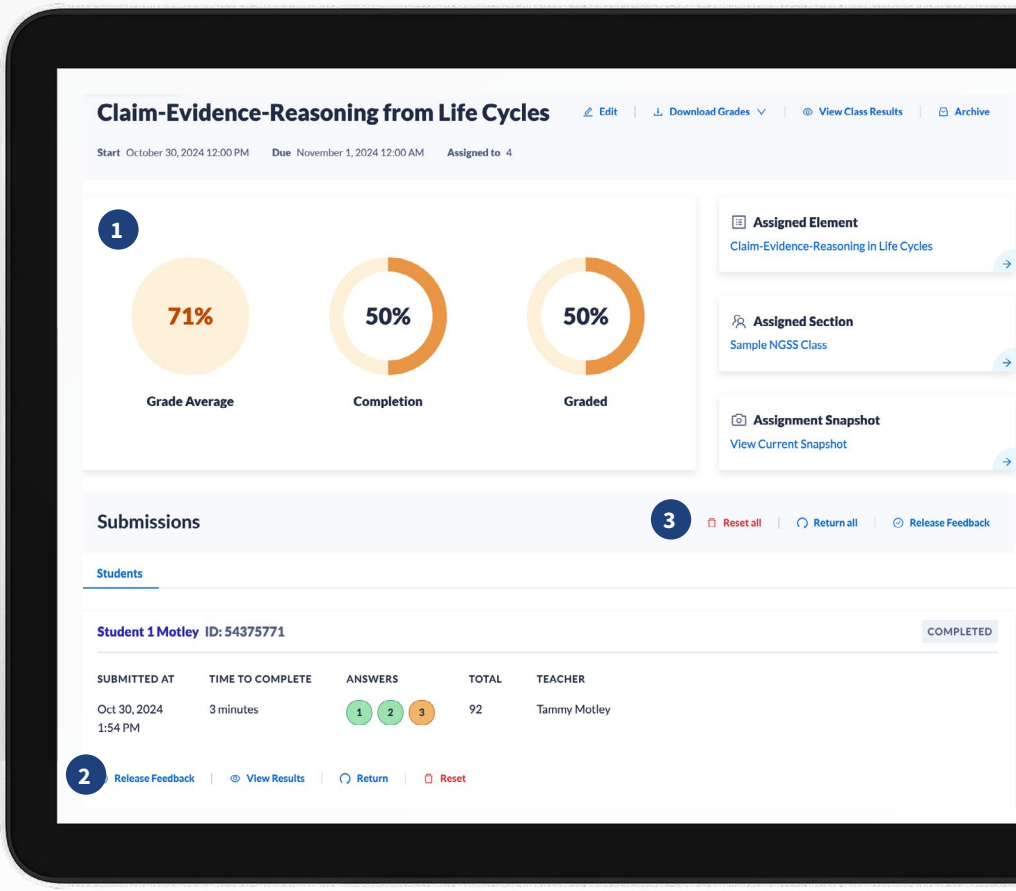
Grade Student Work

Select **Students** from the blue navigation bar. Click on the assignment you want to grade. Alternatively, you can view and grade assignments for a specific student by selecting their name.



Grade Student Work

When you click on an assignment, the **Analytics** page will display.



1. **Assignment Overview** – View the percentage of students who have turned in the assignment, the percentage of assignments graded, and the average grade for all graded assignments.

2. **INDIVIDUAL STUDENT RESULTS**

   Release Feedback – Makes the student's results visible as soon as the assignment is graded, including their score and the answer key. For auto-graded assignments, this happens immediately after submission.

   Return – Returns the assignment ungraded to the student, allowing them to continue working.

   Reset – Resets the assignment for this student, removing all their answers so they can start over.

3. **ALL STUDENT RESULTS**

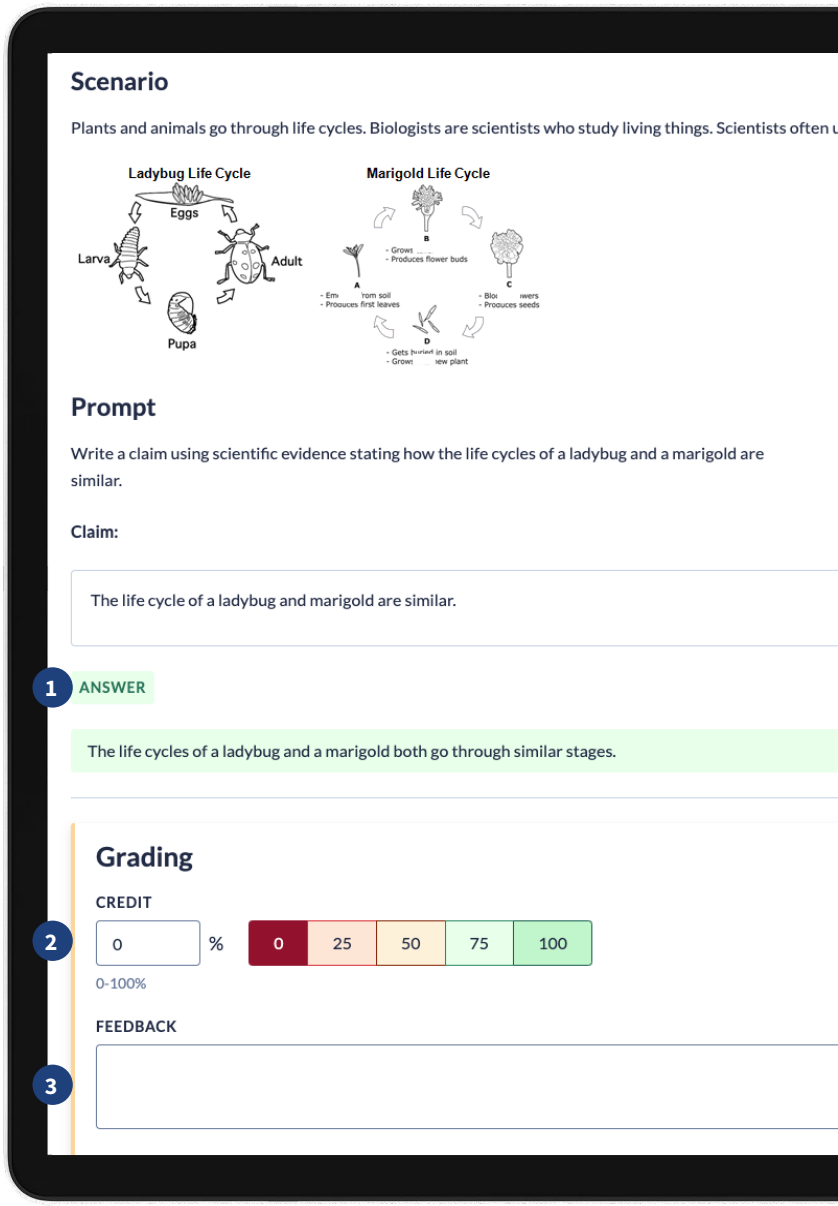
   Reset All– Resets the assignment for all students in the section, allowing everyone to start over.

   Return All – Returns the assignment ungraded to all students in the section, allowing them to continue working.

   Release Feedback – Makes the results visible to all students in the section once the assignment is graded, including their scores and the answer key. For auto-graded assignments, this happens immediately after submission.

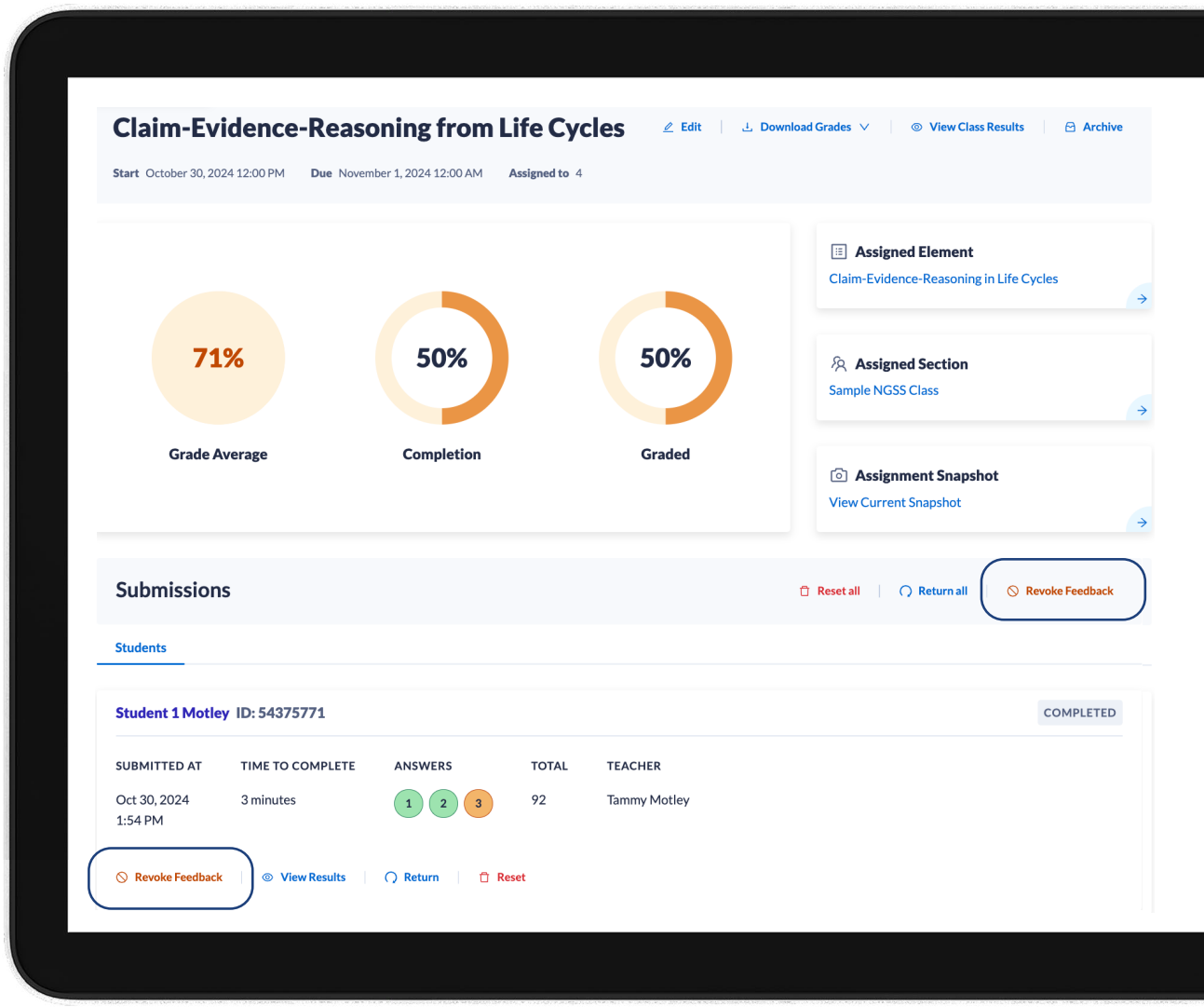
Grade Student Work

1. While grading, you will have access to the answer key and options for providing feedback. The answer key is shown for each question.
2. You can select a quick score or input a custom score for each question.
3. You can leave comments for each individual question.



Revoke Feedback

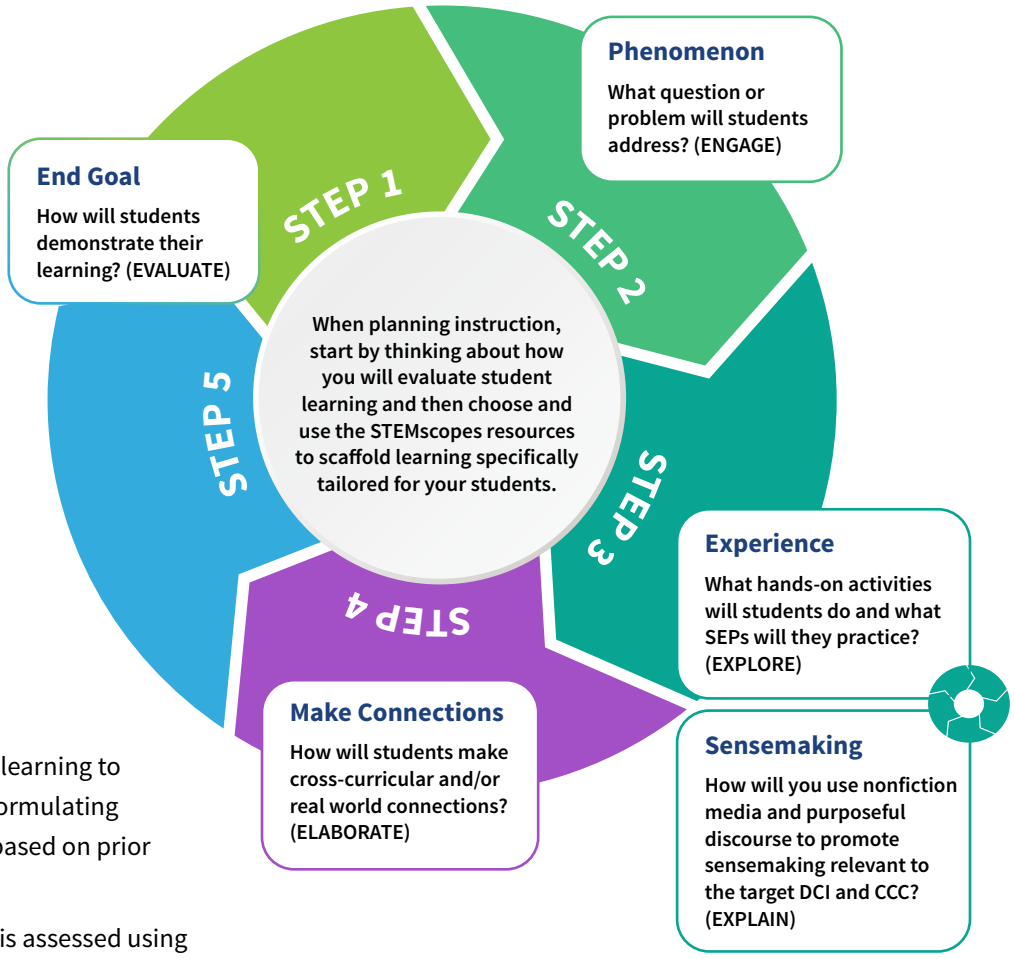
Once you release feedback for an assignment, the **Revoke Feedback** option will appear. This hides student results, making scores and answers no longer viewable to the student. It also prevents student results from being automatically returned when the assignment is graded.



The 5E Instructional Model

STEMscopes follows the **5E Instructional Model**, which is widely recommended by NGSS and grounded in inquiry-based learning. This constructivist approach shifts the teacher's role from being the "sage on the stage" to a "guide on the side," helping students build their own understanding. The five Es are:

- **ENGAGE**: The teacher uses demonstrations, discrepant events, and hands-on activities to tap into students' prior knowledge and spark interest. Pre-assessments help identify misconceptions.
- **EXPLORE**: Students engage in hands-on tasks and problem-solving activities. The teacher guides learning with probing questions and support.
- **EXPLAIN**: Through direct instruction, nonfiction text, and media, the teacher clarifies new concepts and links them to students' prior experiences. Students articulate their thinking based on the tasks in the Explore phase.
- **ELABORATE**: Students extend their learning to new situations and content areas, formulating new questions and experimenting based on prior knowledge.
- **EVALUATE**: Student understanding is assessed using both informal and formal assessments. Students demonstrate their mastery by producing a final product.



Click Here to learn more about Constructivist Learning and the 5E Instructional Model.

Curriculum Essentials

STEMscopes offers a comprehensive array of resources designed to support teachers in effectively teaching the Next Generation Science Standards (NGSS). Teachers are not required to use every resource; instead, they are encouraged to tailor their learning plans to meet the specific needs of their students.

ENGAGE

- **Investigative Phenomena**
- **Hook**

Stimulate student curiosity with the **Investigative Phenomena**. Access prior knowledge and uncover student preconceptions while introducing students to foundational concepts with the **Hook** activity.

EXPLORE

- **All Explore Activities**

Engage students in experiences that are intentionally scaffolded to help them develop an understanding of the various aspects of the target science content while practicing using science and engineering practices and crosscutting concepts.

EXPLAIN

- **Picture Vocabulary**
- **STEMscopedia & Linking Literacy**
- **Content Connection Videos**

Use **Picture Vocabulary** to reinforce scientific terms introduced to students in context during the Explore activities. Use the **STEMscopedia** nonfiction text and **Content Connection Videos** to help students understand the Explore activities and explain phenomena. Use the **Linking Literacy** to support students in reading the STEMscopedia in order to develop literacy skills around nonfiction text.

ELABORATE

- **Optional**

Numerous resources are available to provide students with opportunities to apply their learning to additional real-world contexts or other disciplines (ELA, math, career exploration).

EVALUATE*

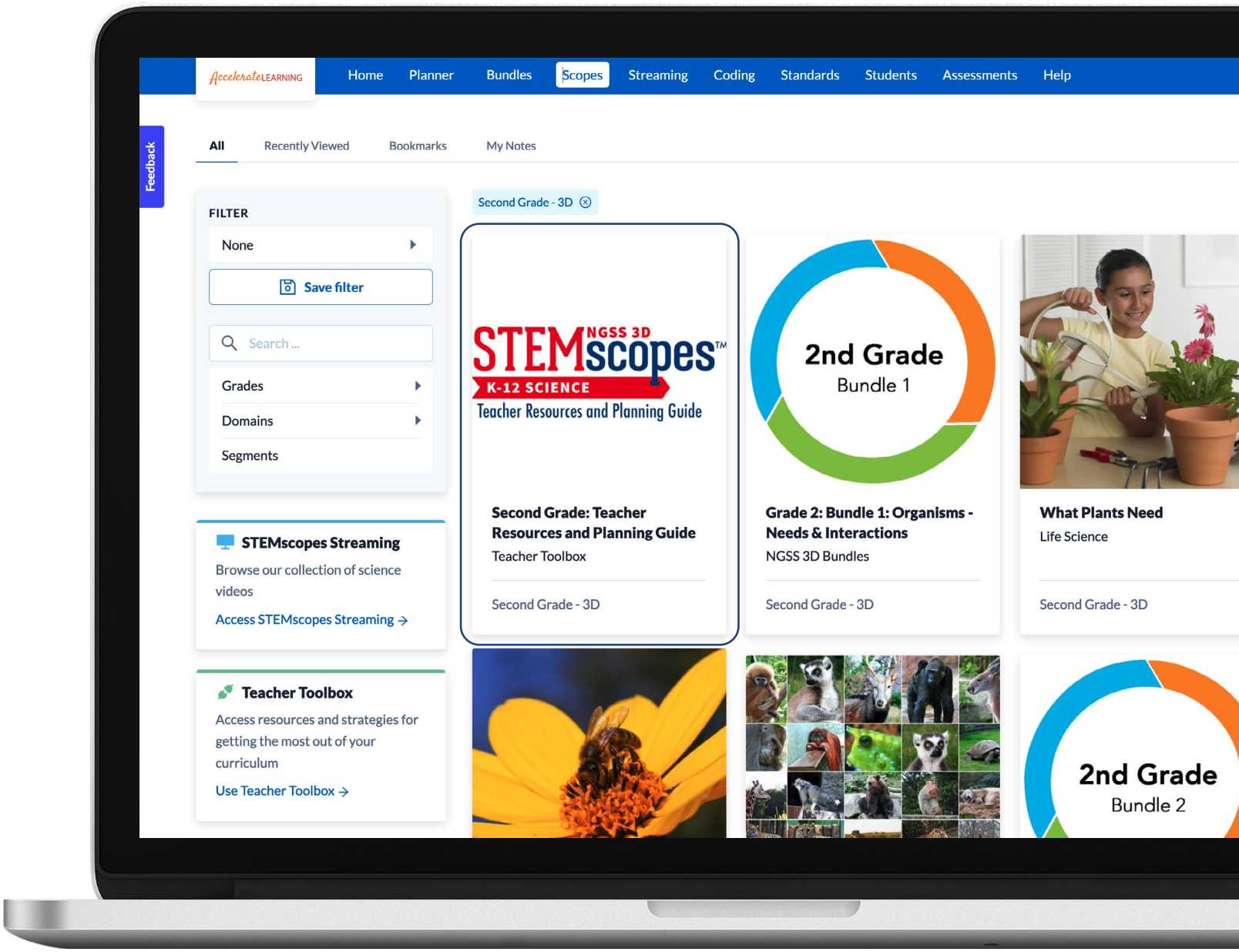
- **Claim-Evidence-Reasoning Recommended**

The Claim-Evidence-Reasoning can be assigned on its own or paired with the multiple choice and/or short answer response assessments.

** In addition to the summative assessments, formative assessment opportunities are embedded throughout the resources in each scope.*

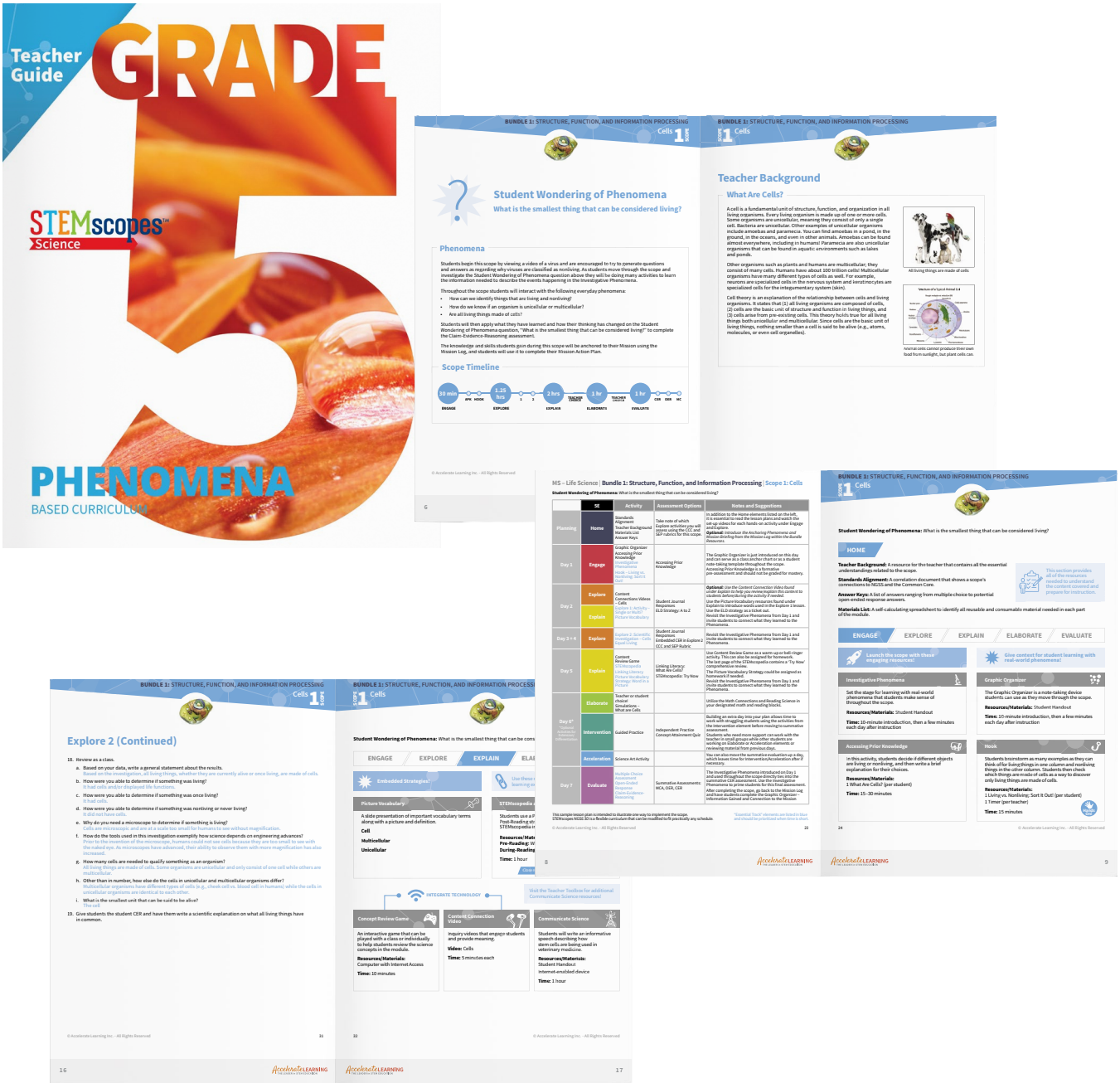
Teacher Resources and Planning Guide

In addition to the planning resources available in the Home section of each scope and bundle, you can also access digital planning tools in the Teacher Resources and Planning Guide for each grade (K-8).



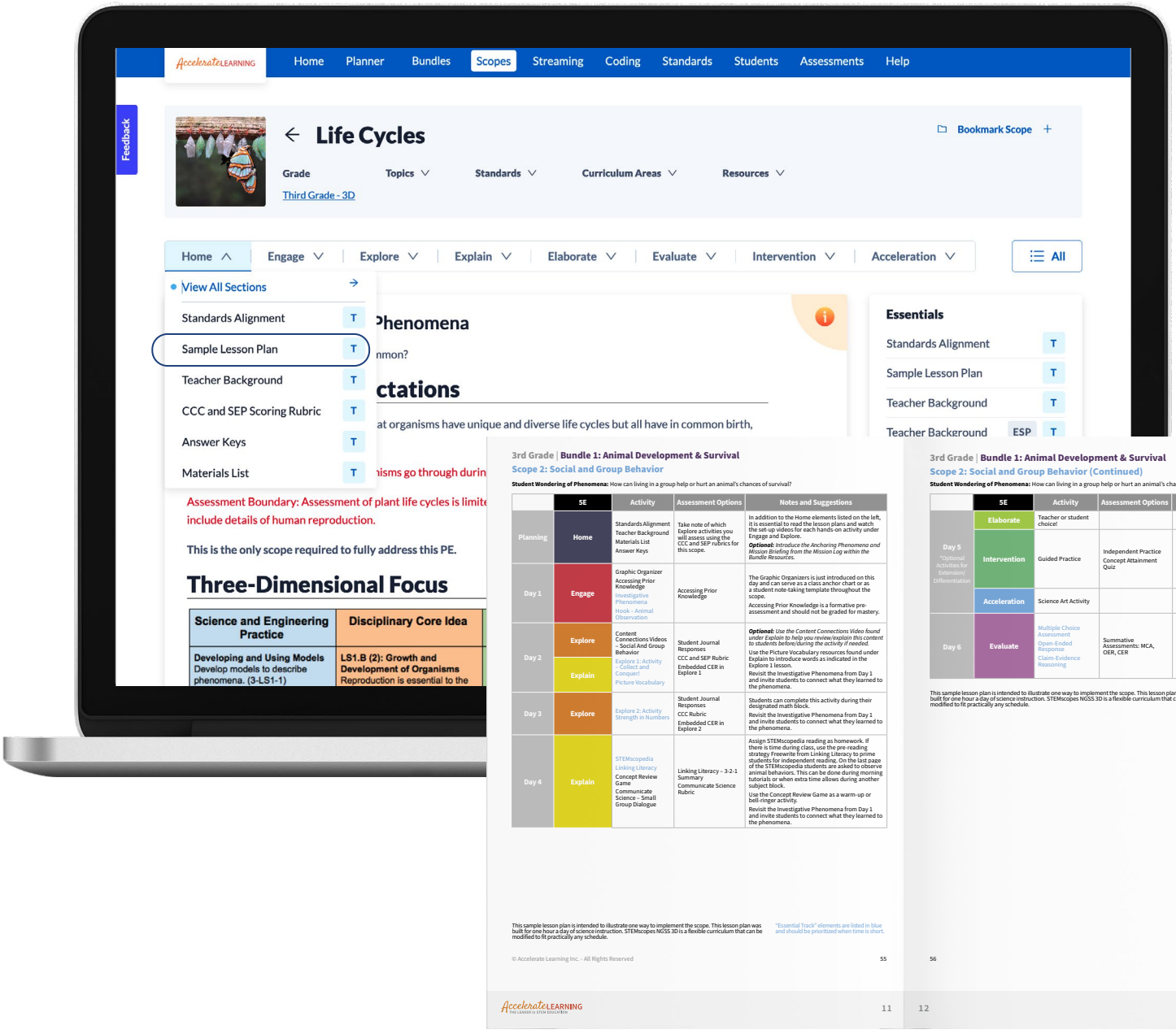
Printed Teacher Guides

The STEMscopes printed Teacher Guides offer an overview of the resources available in each bundle (unit) for every grade level, along with sample lesson plans for each scope.



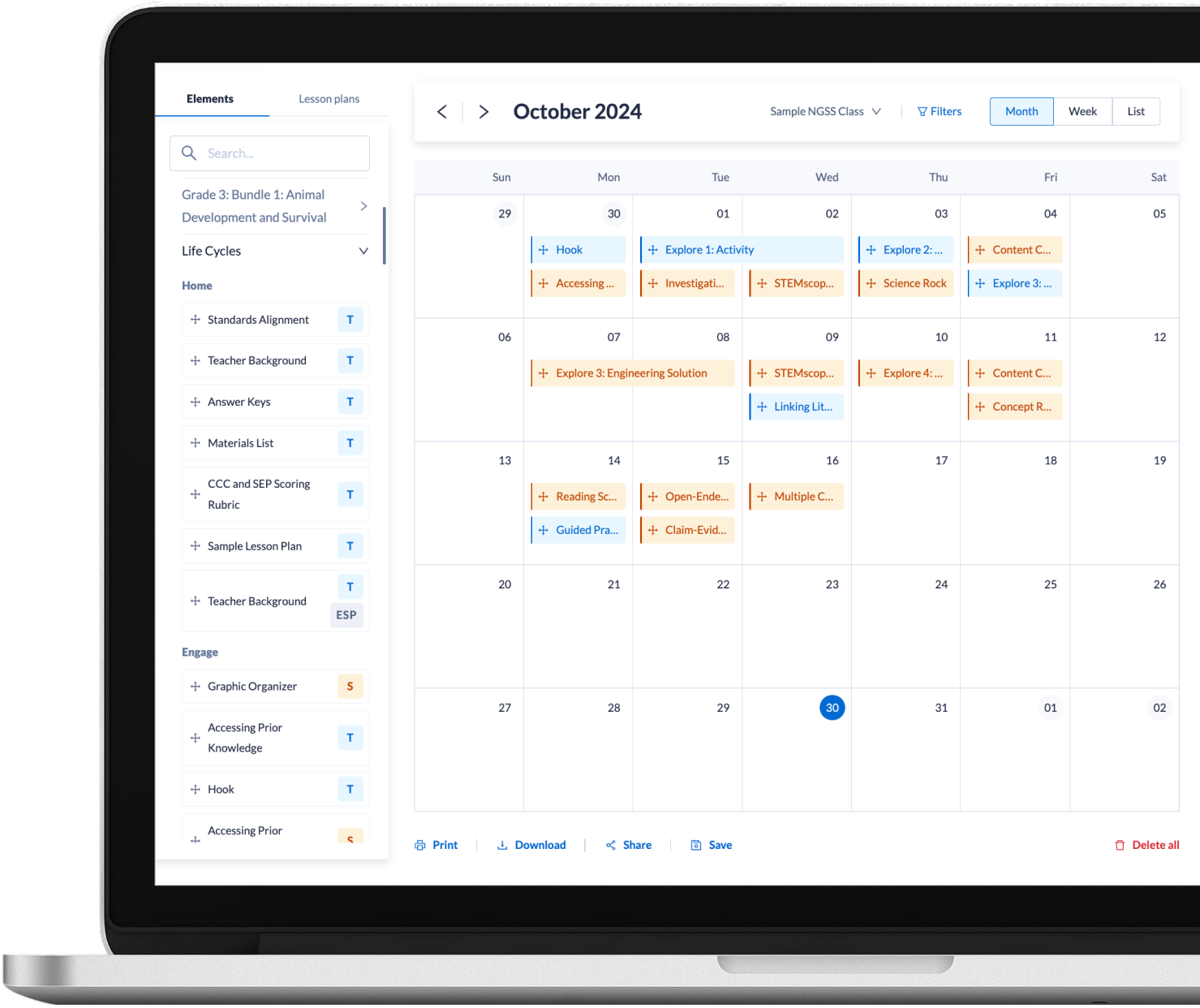
Sample Lesson Plans

Sample lesson plans, complete with assessment options and best practice suggestions, are available in the Home toolbox of each scope. These plans are also included in the printed Teacher Guides.



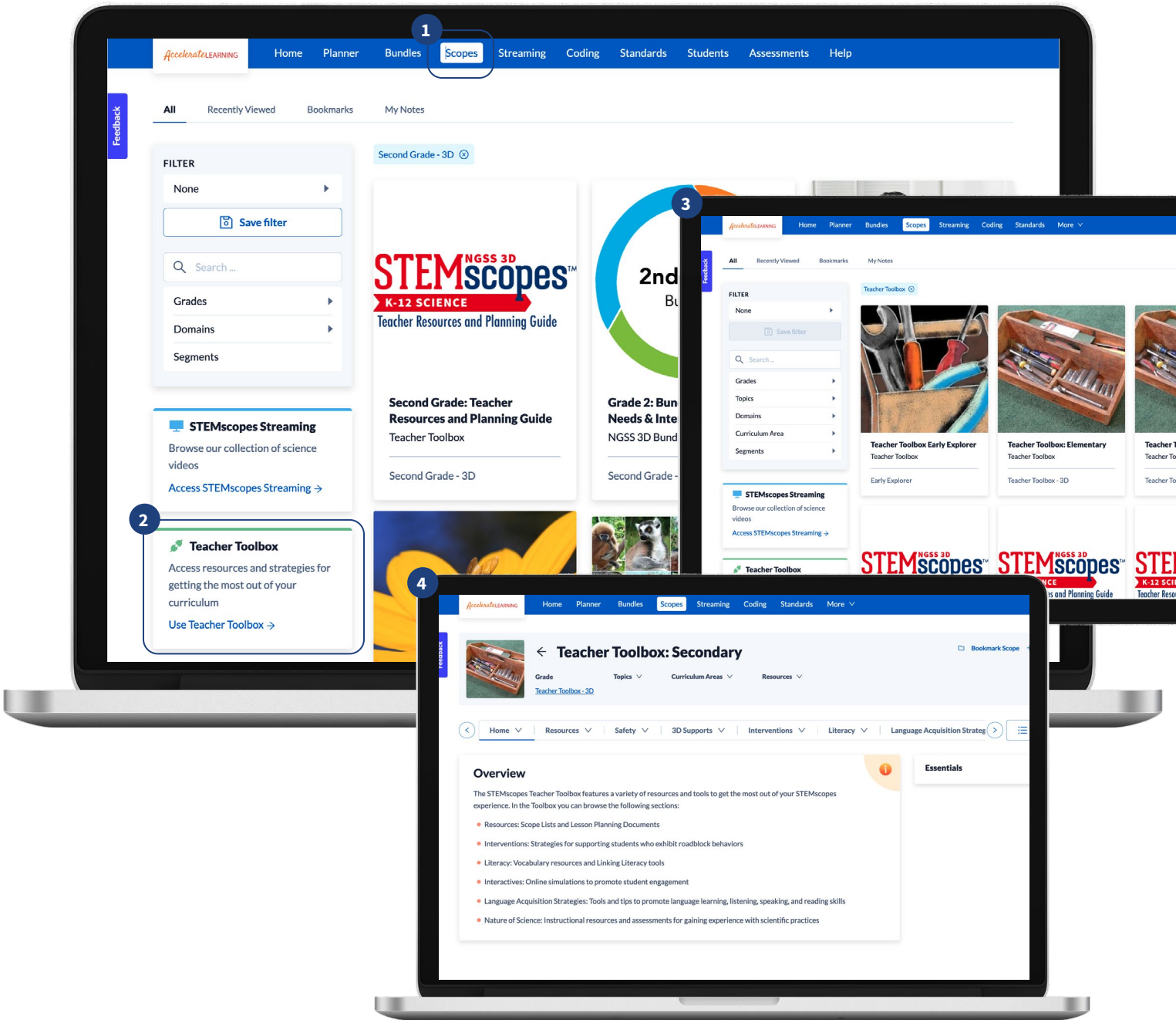
The Planner Tool

The Planner tool allows you to schedule STEMscopes resources for each day by simply dragging and dropping them onto the calendar. Upcoming resources will appear on your home page Dashboard.



Teacher Toolbox

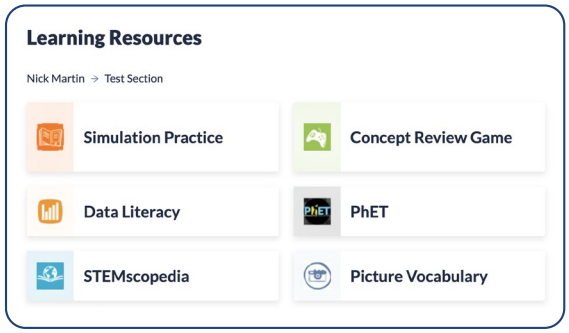
The Teacher Toolbox offers a variety of resources to support educators in delivering science instruction that is tailored to meet the needs of every student.



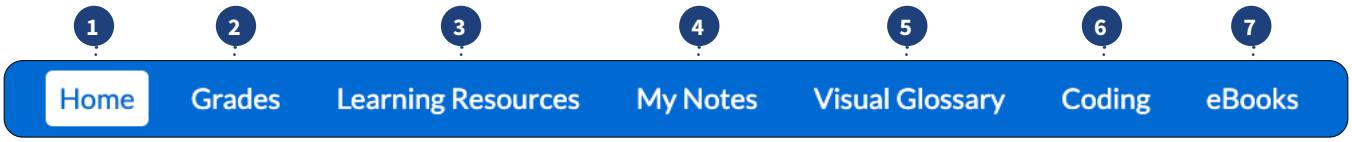
The Digital Student Platform

To access the student view, sign in with a student account. You can log out of your teacher account or use an incognito/ private window. Find the student username and password in your "Students" tab under the teacher view.

1. The Home tab provides links to all of the resources that have been specifically assigned to a student
2. The Grades tab provides links to assignments that have been turned in and graded.
3. The Learning Resources tab provides links to resources that the teacher has made available by default to all students. Teachers can edit which resources are available to students on the Edit Section page.



4. The My Notes tab provides a summary of text annotations the student has made to any of their learning resources (i.e. highlighting or comments added to the STEMscopedia or other pages).
5. The Visual Glossary tab provides a list of scientific terms that includes images and/or video clips.
6. If the school has purchased STEMscopes coding, students can access their workspace here.
7. If the district has purchased digital eBooks, the eBook will be available for teachers and students as a new tab in the digital curriculum. Teachers can print on demand, and students can save and download their work, and submit assignments by uploading their assignments to the district's LMS.



MADE FOR THE NGSS

Our lessons and resources:

- Prioritize ease of use
- Cater to the unique needs of classrooms using the NGSS
- Prepare students to become successful STEM leaders

Everything you need is all in one place.

ASSESSMENTS AND REPORTING

- Include various assessment and report types that support data-driven decisions
- Provide meaningful insight and feedback

PROVEN RESULTS

- Research shows that our program implementation boosts science proficiency and overall performance
- User testimonials reveal that teachers and students *love* us