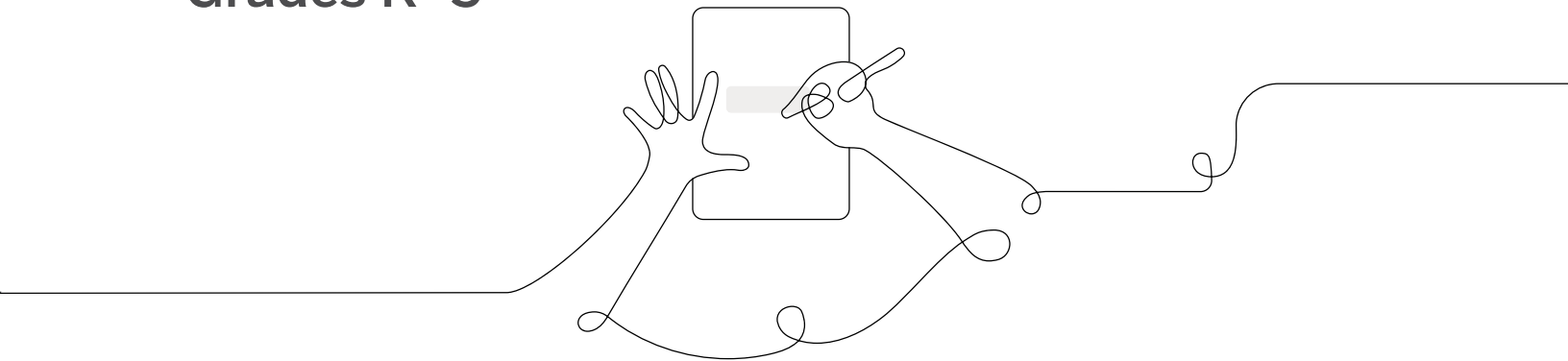


AmplifyScience

Participant Notebook

NYC New Teacher Orientation

Grades K–5



Welcome to the workshop

This Participant Notebook will guide and support the work we do together in this initial workshop to get you ready to teach Amplify Science. It will also be a valuable resource for self-study following the workshop.

Grades K - 5

Amplify Science

Three dimensions of NGSS reference



3-D learning engages students in using scientific and engineering practices and applying crosscutting concepts as tools to develop understanding of and solve challenging problems related to disciplinary core ideas.

Science and Engineering Practices

1. Asking Questions and Defining Problems
2. Developing and Using Models
3. Planning and Carrying Out Investigations
4. Analyzing and Interpreting Data
5. Using Mathematics and Computational Thinking
6. Constructing Explanations and Designing Solutions
7. Engaging in Argument from Evidence
8. Obtaining, Evaluating, and Communicating Information

Disciplinary Core Ideas

Earth and Space Sciences:

ESS1: Earth's Place in the Universe
ESS2: Earth's Systems
ESS3: Earth and Human Activity

Life Sciences:

LS1: From Molecules to Organisms
LS2: Ecosystems
LS3: Heredity
LS4: Biological Evolution

Physical Sciences:

PS1: Matter and its Interactions
PS2: Motion and Stability
PS3: Energy
PS4: Waves and their Applications

Engineering, Technology and the Applications of Science:

ETS1: Engineering Design
ETS2: Links among Engineering Technology, Science and Society

Crosscutting Concepts

1. Patterns
2. Cause and Effect
3. Scale, Proportion, and Quantity
4. Systems and System Models
5. Energy and Matter
6. Structure and Function
7. Stability and Change

Year at a glance

Units per year

K-2 → **3** 3-5 → **4**

Unit types

Although every Amplify Science unit provides a three-dimensional learning experience, each unit emphasizes one of the following specific science and engineering practices.

Investigation

Investigation units focus on the process of strategically developing investigations and gathering data to answer questions. Students are first asked to consider questions about what happens in the natural world and why, and are then involved in designing and conducting investigations that produce data to help answer those questions.

Modeling

These Amplify Science units provide extra support to students engaging in the practice of modeling. Students use physical models, investigate with computer models, and create their own diagrams to help them visualize what might be happening on the nanoscale.

Engineering design

Engineering design solves complex problems by applying science principles to the design of functional solutions, and iteratively testing those solutions to determine how well they meet pre-set criteria. All Amplify Science engineering design units are structured to make the development of such solutions the central focus.

Argumentation (grades 3–5)

These Amplify Science units provide extra support to students engaging in the practice of argumentation. As students move up the K–5 grades, they focus on important aspects of argumentation in an intentional sequence.

Course structure

Key

- | | |
|------------------------|-----------------------------|
| A Argumentation | E Engineering design |
| I Investigation | M Modeling |

Kindergarten (66 lessons)

Needs of Plants and Animals **22 lessons** **I**

Pushes and Pulls **22 lessons** **E**

Sunlight and Weather **22 lessons** **M**

Grade 1 (66 lessons)

Animal and Plant Defenses **22 lessons** **M**

Light and Sound **22 lessons** **E**

Spinning Earth **22 lessons** **I**

Grade 2 (66 lessons)

Plant and Animal Relationships **22 lessons** **I**

Properties of Materials **22 lessons** **E**

Changing Landforms **22 lessons** **M**

Grade 3 (88 lessons)

Balancing Forces **22 lessons** **M**

Inheritance and Traits **22 lessons** **I**

Environments and Survival **22 lessons** **E**

Weather and Climate **22 lessons** **A**

Grade 4 (88 lessons)

Energy Conversions **22 lessons** **E**

Vision and Light **22 lessons** **I**

Earth's Features **22 lessons** **A**

Waves, Energy, and Information **22 lessons** **M**

Grade 5 (92 lessons)

Patterns of Earth and Sky **22 lessons** **I**

Modeling Matter **22 lessons** **M**

The Earth System **26 lessons** **E**

Ecosystem Restoration **22 lessons** **A**

Elementary school course curriculum structure

Grade K

- Needs of Plants and Animals
- Pushes and Pulls
- Sunlight and Weather

Grade 1

- Animal and Plant Defenses
- Light and Sound
- Spinning Earth

Grade 2

- Plant and Animal Relationships
- Properties of Materials
- Changing Landforms

Grade 3

- Balancing Forces
- Inheritance and Traits
- Environments and Survival
- Weather and Climate

Grade 4

- Energy Conversions
- Vision and Light
- Earth's Features
- Waves, Energy, and Information

Grade 5

- Patterns of Earth and Sky
- Modeling Matter
- The Earth System
- Ecosystem Restoration

AmplifyScience

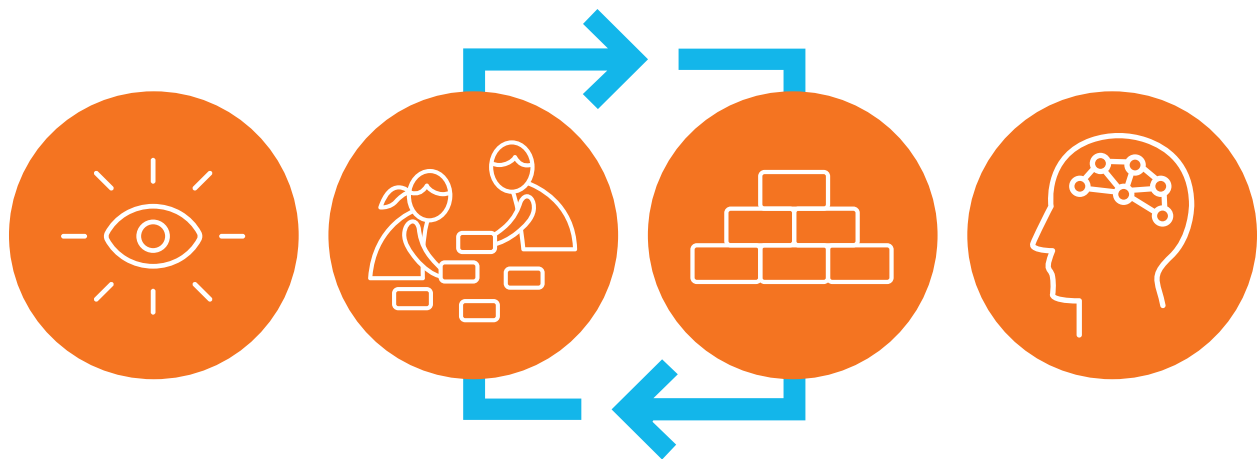
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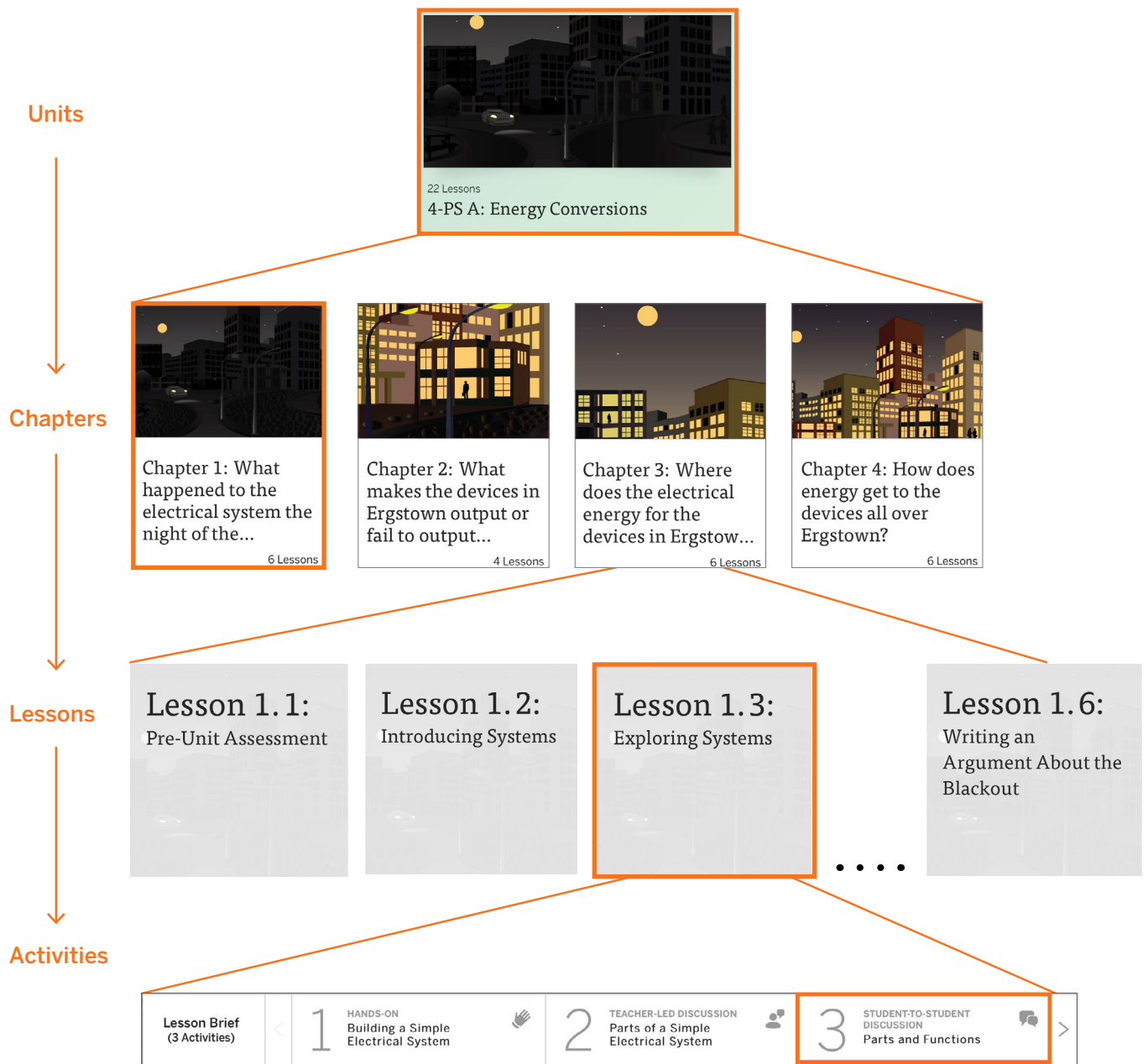
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Amplify Science approach



Amplify Science unit structure

Each unit in the Amplify Science elementary curriculum is structured as a series of chapters. Each chapter contains lessons, and each lesson contains activities.



Navigation within a lesson

AmplifyScience > Energy Conversions > Chapter 1 > Lesson 1.3

Lesson 1.3: Exploring Systems

Lesson Brief (3 Activities) < 1 HANDS-ON Building a Simple Electrical System 2 TEACHER-LED DISCUSSION Parts of a Simple Electrical System 3 STUDENT-TO-STUDENT DISCUSSION Parts and Functions >

RESET LESSON GENERATE PRINTABLE LESSON GUIDE

Lesson Brief

- Overview
- Materials & Preparation
- Differentiation
- Standards
- Vocabulary
- Unplugged?

Digital Resources

- Classroom Slides 1.3 | PowerPoint
- All Projections
- Simple Electrical System Setup
- Setting Up the Flex Solar Panels Found in Some Kits
- Electrical Safety Guidelines
- Comparing Systems table (Completed)

Español

1. The lesson's landing page is referred to as the **Lesson Brief**. This is an example from a lesson in the grade 4 Energy Conversions unit. The Lesson Brief provides valuable information to support teachers, including an overview of the content that will be covered in the lesson.

Navigation within a lesson cont.

The screenshot displays the AmplifyScience interface for Lesson 1.3. At the top, the breadcrumb trail reads: AmplifyScience > Energy Conversions > Chapter 1 > Lesson 1.3. Below this is a navigation bar with three activity cards: 1. HANDS-ON Building a Simple Electrical System, 2. TEACHER-LED DISCUSSION Parts of a Simple Electrical System, and 3. STUDENT-TO-STUDENT DISCUSSION Parts and Functions. The interface includes a 'Lesson Brief (3 Activities)' section on the left with a dropdown menu containing 'Overview', 'Materials & Preparation', 'Differentiation', 'Standards', 'Vocabulary', and 'Unplugged?'. To the right is a 'Digital Resources' section with a list of items: 'Classroom Slides 1.3 | PowerPoint', 'All Projections', 'Simple Electrical System Setup', 'Setting Up the Flex Solar Panels Found in Some Kits', 'Electrical Safety Guidelines', and 'Comparing Systems table (Completed)'. A 'GENERATE PRINTABLE LESSON GUIDE' button is located at the top right. A 'RESET LESSON' button is at the top left. A 'Español' language selector is at the bottom left. A user profile icon is at the top right, and a notification icon is at the bottom right.


2. Selecting the drop-down arrow expands each selection.
 - The **Overview** includes a summary of the lesson, describes what students will learn, and provides activity summaries and timing.
 - **Materials and Preparation** provides a list of materials for the lesson, and how to prepare for teaching.
 - **Differentiation** describes supports and strategies for differentiation.
 - **Standards** details which standards the lesson is aligned to.
 - **Vocabulary** lists focal vocabulary emphasized in the lesson.
 - **Unplugged** lists recommendations for working offline.
3. Select **GENERATE PRINTABLE LESSON GUIDE** to access a downloadable PDF that includes all of the content in digital format, including teacher supports, possible responses, and assessments.
4. **Digital Resources** provide all of the resources for a lesson, which may include Classroom Slides, projections, copymasters, videos, and reference illustrations for teacher reference. Each resource can be downloaded before each lesson.

This screenshot shows the Lesson Map navigation bar from the AmplifyScience interface. It features the breadcrumb trail: AmplifyScience > Energy Conversions > Chapter 1 > Lesson 1.3. The navigation bar contains three activity cards: 1. HANDS-ON Building a Simple Electrical System, 2. TEACHER-LED DISCUSSION Parts of a Simple Electrical System, and 3. STUDENT-TO-STUDENT DISCUSSION Parts and Functions. A red box highlights the right side of the navigation bar, including the right-pointing arrow (>) and the third activity card.

5. The **Lesson Map**, shown above, displays the sequence of the activity titles which, once selected, access each activity's instructional guide. An arrow > at the right end of the lesson map lets you know that there are more activities in a lesson than what's shown.
6. **Activity titles** in the Lesson Map are numbered to help teachers navigate through the lesson.

Navigation within a lesson cont.

The screenshot shows the AmplifyScience interface for Lesson 1.3. The breadcrumb trail at the top left reads: AmplifyScience > Energy Conversions > Chapter 1 > Lesson 1.3. The main navigation bar includes three activity tabs: 1 HANDS-ON Building a Simple Electrical System, 2 TEACHER-LED DISCUSSION Parts of a Simple Electrical System, and 3 STUDENT-TO-STUDENT DISCUSSION Parts and Functions. The third tab is selected. Below the navigation bar, the title 'Parts and Functions' is displayed. A description states: 'Pairs return to the book *Systems*, select a specific system, and record its parts and their functions. (20 min)'. To the right of the description are two icons: a hummingbird for 'EMBEDDED FORMATIVE ASSESSMENT' and a document for 'INSTRUCTIONAL GUIDE'. Below these icons is a tabbed interface with four tabs: 'Step-by-step', 'Teacher Support', 'Possible Responses', and 'My Notes'. The 'Step-by-step' tab is selected. The content under this tab includes three numbered steps: 1. Introduce the next activity. 2. Point out the importance of text features. 3. Project page 3, Contents.

7. Once in an activity, you will see the **INSTRUCTIONAL GUIDE**, within which are the following tabs:
 - STEP-BY-STEP** lists all of the steps for teaching the activity. This will be open by default when you first navigate to the activity.
 - **Bold lead-ins** summarize what happens in each instructional step.
 - Purple speech bubbles  indicate **teacher talk**, suggestions for what you should say as you teach.
 - Text in brackets [] indicates an expected student response.
 - TEACHER SUPPORT** provides suggestions, rationale, and background information.
 - POSSIBLE RESPONSES** indicate possible student responses for independent or small group activities.
 - MY NOTES** provides a space to record thoughts and observations about each activity.

Note: If there are no Teacher Support notes for the activity, the Teacher Support tab will not appear. Likewise, if there are no possible responses for the activity, the Possible Responses tab will not appear.
8. The **grey hummingbird** indicates there is an **embedded formative assessment** in this activity. Click on the hummingbird to view the assessment (the icon turns orange to indicate selection).
9. The **breadcrumb trail** (Unit-Chapter-Lesson) (top left) can be used to navigate to different parts of the unit.

Lesson-level scavenger hunt

Use this scavenger hunt to practice navigating at the lesson level, and to prepare for the lesson in which you'll introduce your unit's phenomenon.

Navigate to the lesson in your unit in which the phenomenon is introduced.

Scroll down to the Lesson Brief and click/scroll to the Overview, then skim the section.

Task	Notes
Scroll down to the Lesson Brief and click/scroll to the Overview, then skim the section.	
What is the purpose of in this lesson?	
How many activities are in the lesson?	
In which activity are students introduced to the anchor phenomenon they'll work to figure out? How many minutes is that activity?	

Task	Notes
Click/scroll to Materials & Preparation.	
List the materials you'll need for this lesson.	
Describe one step of preparation you will need to do before and after this lesson.	

Lesson-level scavenger hunt cont.

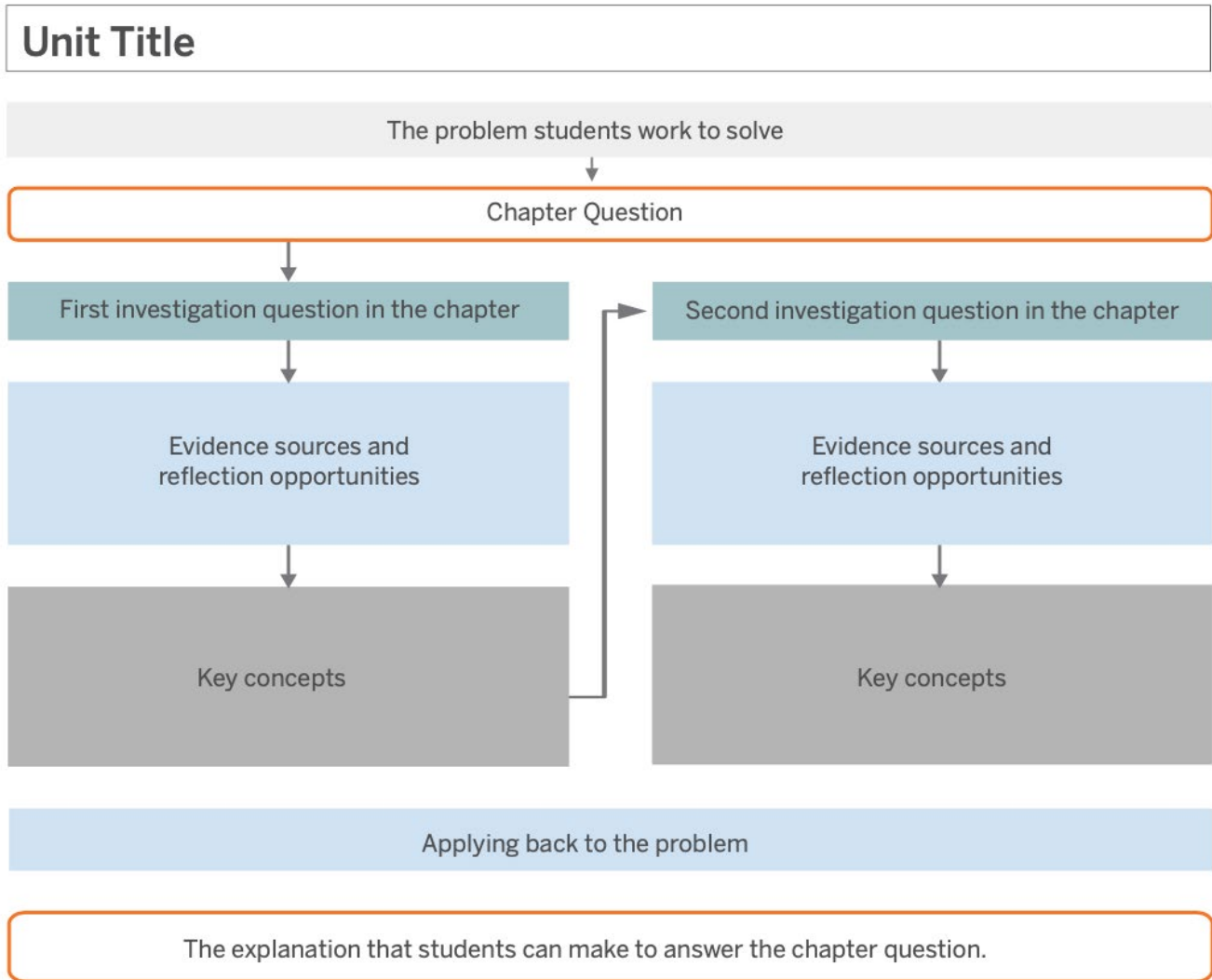
Task	Notes
<p>Open this lesson's Classroom Slides. Read through the Classroom Slides and Presenter Notes to gain a better understanding of the lesson.</p>	
<p>Why do some slides have scripting in black while others have scripting in orange?</p>	
<p>What new understanding of the lesson have you gained from reviewing the Classroom Slides?</p>	
<p>What features of the Classroom Slides will support you in teaching this lesson?</p>	

Task	Notes
<p>Scroll up to the Lesson Map and select the activity in which the unit problem/phenomenon is introduced. Read the steps for teaching the activity listed in the Step-by-Step.</p> <ul style="list-style-type: none"> • K: Needs of Plants and Animals, Lesson 1.1, Activity 1 • 1st: Animal and Plant Defenses, Lesson 1.1, Activity 1 • 2nd: Plant and Animal Relationships, Lesson 1.1, Activity 1 • 3rd: Balancing Forces, Lesson 1.2, Activity 1 • 4th: Energy Conversions, Lesson 1.1, Activity 2 • 5th: Patterns of Earth and Sky, Lesson 1.1, Activities 1-2 	
<p>Compare the Classroom Slides you read to the Step-by-Step. How are they aligned?</p>	
<p>After reading the Step-by-Step, are there any additional presenter notes you would add to the Classroom Slides for that activity? If so, add them to the slide deck now.</p>	

Task	Notes
<p>Wrap up the scavenger hunt with these synthesis questions:</p>	
<p>What role will your students take on in this unit?</p>	
<p>In 10 words or less, what is the phenomenon or problem of your unit?</p>	

Coherence Flowchart structure

Typical structure of one chapter in a Coherence Flowchart



Instruction is framed by questions about the unit’s anchor phenomenon and the related problem students are solving. Chapter Questions then guide students in figuring out the phenomenon, piece by piece. Within each chapter, Investigation Questions focus students on a manageable piece of content that will help them figure out the Chapter Question. Each question motivates activities, and each activity provides specific evidence related to the Investigation Question. Students synthesize the understanding constructed over multiple activities, and this understanding is formalized through key concepts. Often a key concept leads students to an additional Investigation Question students need to pursue to answer the Chapter Question. At the end of the chapter, students’ new understanding is applied back to the unit’s anchor phenomenon and leads students to a new Chapter Question or a final explanation.

Preparing to teach the first day

Directions:

1. Navigate to Chapter 1 landing page in the Teacher’s Guide and read the Chapter Overview.
2. Navigate to Lesson 1.1 and use the table below to guide your planning.

Consider	Read
<p>Lesson purpose</p> <ul style="list-style-type: none"> • What is the purpose of the lesson? • How do the activities in this lesson fit together to support students in achieving this purpose? • How do students engage in the three dimensions throughout this lesson to figure out phenomena like scientists do? 	<p>Lesson Brief:</p> <ul style="list-style-type: none"> • Overview • Standard
<p>Preparing</p> <ul style="list-style-type: none"> • Download and review the Classroom Slides. Is there anything you would want to add to the slide or adjust for your students? • What materials do you need to prepare? • Are there digital resources that will need to be copied for students? • Will you need to plan for partner or group work? • [Grades 2-5 only] Will students need digital devices? 	<p>Lesson Brief:</p> <ul style="list-style-type: none"> • Materials and Preparation • Unplugged • Digital Resources <p>Instructional Guide:</p> <ul style="list-style-type: none"> • Step-by-Step tab <p>Classroom Slides</p> <ul style="list-style-type: none"> • Resource: https://tinyurl.com/amplifyslideshowto
<p>Pacing</p> <ul style="list-style-type: none"> • How will teaching this lesson fit into your class schedule? • If you need to break the lesson into activities over several days, which transitions will you add to support students in connecting the evidence collected to the Investigation Question? • Will you need to add time for any new procedures or routines that students will need to practice (distributing or collecting book/hands-on materials, logging-in, discussion routines, partner work)? 	<p>Lesson Brief:</p> <ul style="list-style-type: none"> • Lesson at a Glance <p>Instructional Guide:</p> <ul style="list-style-type: none"> • Step-by-Step tab • Teacher Support tab <p>Classroom Slides</p> <ul style="list-style-type: none"> • Resource: https://tinyurl.com/amplifyslideshowto
<p>Teaching the lesson</p> <ul style="list-style-type: none"> • Are there specific steps you have questions about? • What challenges might you encounter in teaching this lesson, and how might you address these challenges? • Are there activities you need to practice before showing students? • What might be challenging for your students? • What additional supports can you plan for individual students? 	<p>Lesson Brief:</p> <ul style="list-style-type: none"> • Differentiation <p>Classroom Slides</p> <ul style="list-style-type: none"> • Resource: https://tinyurl.com/amplifyslideshowto <p>Instructional Guide:</p> <ul style="list-style-type: none"> • Step-by-Step tab • Teacher Support tab

Assessment System reference (grades K-1)

Assessment type	Description	Student experience	Teacher resources
Pre-Unit Assessment	Formative, 3-D performance assessment meant to gauge students' initial understanding and pre-conceptions about core ideas in the unit	<ul style="list-style-type: none"> • Full-class teacher-led discussion, supported by visual cues 	<ul style="list-style-type: none"> • Assessment Guide (available in Digital Resources)
End-of-Unit Assessment	Summative, 3-D performance assessment to evaluate students' understanding of core ideas in the Progress Build	<ul style="list-style-type: none"> • Full-class teacher-led discussion, supported by visual cues 	<ul style="list-style-type: none"> • Rubric and Possible Responses in Assessment Guide (available in Digital Resources)
Critical Juncture Assessments	Embedded formative assessments for assessing students' progress along the Progress Build	<ul style="list-style-type: none"> • Activities are embedded into existing instructional activities leveraged for assessment opportunities – often student-to-student discussions, investigations, or modeling activities 	<ul style="list-style-type: none"> • Full text of assessment includes “Assess Understanding” section and “Tailor Instruction” suggestions accessible in Instructional Guide by clicking the hummingbird icon • All Critical Juncture Assessments are included in Reference: Embedded Formative Assessments (available in the Unit Guide) • Clipboard Assessment Tool includes tailored sets of questions and the specific activities that present an opportunity to ask those questions. Also included is space to write notes about students' ideas. • Augmenting Instruction notes (accessible in Teacher Support tab) provide additional suggestions for supplemental instruction at the class, group, and student level
On-the-Fly Assessments	Embedded formative assessments for noting students' progress with one or more of the following: science disciplinary core ideas, science and engineering practices, crosscutting concepts, sense-making strategies, and collaborative science work	<ul style="list-style-type: none"> • Activities are embedded into existing instructional activities, leveraged for assessment opportunities. Artifacts can include full-class or student-to-student discussion, kinesthetic activities, notebook pages, etc. 	<ul style="list-style-type: none"> • Full text of assessment includes what to “Look for” and “Now What?” instructional suggestions accessible in Instructional Guide by clicking the hummingbird icon • All On-the-Fly Assessments are included in Reference: Embedded Formative Assessments (available in the Unit Guide) • Clipboard Assessment Tool includes tailored sets of questions and the specific activities that present an opportunity to ask those questions. Also included is space to write notes about students' ideas.

Assessment System reference (grades K-1) cont.

Assessment type	Description	Student experience	Teacher resources
Student Self-Assessments	Opportunity for students to reflect on whether they understand or don't yet understand the core concepts from the unit	<ul style="list-style-type: none"> • Reflection prompts through teacher-led discussion and partner talk • Provided at or near the end of each chapter 	<ul style="list-style-type: none"> • Information about Student Self-Assessments in Reference: Assessment System (in Unit Overview) • Teacher Support Notes accessible in Instructional Guide by clicking the Teacher Support tab • Discussion prompts in the Instructional Guide
Investigation Assessments	Summative, 3-D performance assessment to evaluate students' performance of the science and engineering practices of Planning and Carrying Out Investigations and Analyzing and Interpreting Data, as well as their application of disciplinary core ideas and crosscutting concepts	<ul style="list-style-type: none"> • Prompts for planning investigation and recording results in the Investigation Notebook or a copymaster (available in Digital Resources). Additional support and spoken teacher prompts in K-1. • Physical materials for conducting investigation 	<ul style="list-style-type: none"> • Rubrics and Possible Responses in Assessment Guide (available in Digital Resources) • Possible Responses also accessible in Instructional Guide by clicking the Possible Responses tab
Portfolio Assessments	Opportunity for students to compile and reflect on key work products collected at the end of each unit. Final portfolio compilation occurs at the end of the school year and allows students to select and reflect on work products which they feel best demonstrate their growth in understanding throughout the year	<ul style="list-style-type: none"> • Compilation of work products that show growth over the course of the year • Reflection on chosen work products • Rubrics for evaluating work products (available in Program Guide → <i>Assessments</i> → <i>Additional Assessment Resources</i>) 	<ul style="list-style-type: none"> • Assessment Rubrics (available in Program Guide → <i>Assessments</i> → <i>Additional Assessment Resources</i>) • Guidance for communicating to parents about student progress (available in Program Guide → <i>Assessments</i> → <i>Additional Assessment Resources</i>)

Assessment System reference (grades 2-5)

Assessment type	Description	Student experience	Teacher resources
Pre-Unit Assessment	Formative, 3-D performance assessment meant to gauge students' initial understanding and pre-conceptions about core ideas in the unit	<ul style="list-style-type: none"> Pre-Unit Writing copymaster (available in Digital Resources) 	<ul style="list-style-type: none"> Assessment Guide (available in Digital Resources)
End-of-Unit Assessment	Summative, 3-D performance assessment to evaluate students' understanding of core ideas in the Progress Build	<ul style="list-style-type: none"> End-of-Unit Writing copymaster, Versions A and B (available in Digital Resources) For select units, End-of-Unit Writing Part 2 (available in Digital Resources or the Investigation Notebook) 	<ul style="list-style-type: none"> Rubric and Possible Responses in Assessment Guide (available in Digital Resources)
Critical Juncture Assessments	Embedded formative assessments for assessing students' progress along the Progress Build	<ul style="list-style-type: none"> Written task in the Investigation Notebook For written explanation and argumentation-based tasks, scaffolded version of assessment provided as a copymaster (available in Digital Resources) 	<ul style="list-style-type: none"> Full text of assessment includes "Assess Understanding" section and "Tailor Instruction" suggestions accessible in Instructional Guide by clicking the hummingbird icon All Critical Juncture Assessments are included in Reference: Embedded Formative Assessments (available in the Unit Guide) Possible Responses accessible in Instructional Guide by clicking the Possible Responses tab For written explanation and argumentation-based tasks, Rubrics and Possible Responses in Assessment Guide (available in Digital Resources)
On-the-Fly Assessments	Embedded formative assessments for noting students' progress with one or more of the following: science disciplinary core ideas, science and engineering practices, crosscutting concepts, sense-making strategies, and collaborative science work	<ul style="list-style-type: none"> Activities are embedded into existing instructional activities, leveraged for assessment opportunities. Artifacts can include discussion, use of a digital tool, notebook pages, etc. 	<ul style="list-style-type: none"> Full text of assessment includes what to "Look for" and "Now What?" instructional suggestions accessible in Instructional Guide by clicking the hummingbird icon All On-the-Fly Assessments are included in Reference: Embedded Formative Assessments (available in the Unit Guide)

Assessment System reference (grades 2-5) cont.

Assessment type	Description	Student experience	Teacher resources
Student Self-Assessments	Opportunity for students to reflect on whether they understand or don't yet understand the core concepts from the unit	<ul style="list-style-type: none"> Reflection prompts in the Investigation Notebook Provided at or near the end of each chapter 	<ul style="list-style-type: none"> Information about Student Self-Assessments in Reference: Assessment System (available in the Unit Guide) Teacher Support notes accessible in Instructional Guide by clicking the Teacher Support tab
Investigation Assessments	Summative, 3-D performance assessment to evaluate students' performance of the science and engineering practices of Planning and Carrying Out Investigations and Analyzing and Interpreting Data, as well as their application of disciplinary core ideas and crosscutting concepts	<ul style="list-style-type: none"> Prompts for planning investigation and recording results in the Investigation Notebook or a copymaster or copymaster (available in Digital Resources) Materials (physical or digital) for conducting investigation 	<ul style="list-style-type: none"> Rubrics and Possible Responses in Assessment Guide (available in Digital Resources) Possible Responses also accessible in Instructional Guide by clicking the Possible Responses tab
Portfolio Assessments	Opportunity for students to compile and reflect on key work products collected at the end of each unit. Final portfolio compilation occurs at the end of the school year and allows students to select and reflect on work products which they feel best demonstrate their growth in understanding throughout the year	<ul style="list-style-type: none"> Compilation of work products (written explanations and/or arguments, models) that show growth over the course of the year Reflection on chosen work products Rubrics for evaluating work products (available in Program Guide → <i>Assessments</i> → <i>Additional Assessment Resources</i>) 	<ul style="list-style-type: none"> Assessment Rubrics (available in Program Guide → <i>Assessments</i> → <i>Additional Assessment Resources</i>) Guidance for communicating to parents about student progress (available in Program Guide → <i>Assessments</i> → <i>Additional Assessment Resources</i>)

Unit Guide resources

Once a unit is selected, select **JUMP DOWN TO UNIT GUIDE** in order to access all unit-level resources in an Amplify Science unit.

Planning for the unit

Unit Overview	Describes what's in each unit, the rationale, and how students learn across chapters
Unit Map	Provides an overview of what students figure out in each chapter, and how they figure it out
Progress Build	Explains the learning progression of ideas students figure out in the unit
Getting Ready To Teach	Provides tips for effectively preparing to teach and teaching the unit in your classroom
Materials and Preparation	Lists materials included in the unit's kit, items to be provided by the teacher, and briefly outlines preparation requirements for each lesson
Science Background	Adult-level primer on the science content students figure out in the unit
Standards at a Glance	Lists NGSS Standards (Performance Expectations, Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts), Common Core State Standards for English Language Arts, and Common Core State Standards for Mathematics

Teacher references

Lesson Overview Compilation	Lesson Overview of each lesson in the unit, including lesson summary, activity purposes, and timing
Standards and Goals	Lists NGSS (Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts) and CCSS (English Language Arts and Mathematics) standards in the unit, explains how the standards are reached
3-D Statements	Describes 3-D learning across the unit, chapters, and in individual lessons
Assessment System	Describes components of the Amplify Science assessment system, identifies each 3-D assessment opportunity in the unit
Embedded Formative Assessments	Includes full text of formative assessments in the unit
Books in This Unit	Summarizes each unit text and explains how the text supports instruction
Apps in This Unit	Outlines functionality of digital tools and how students use them (in grades 2-5)
Flextensions in This Unit	Summarizes information about the Hands-On Flextension lesson(s) in the unit

Printable resources

Coherence Flowcharts	Visual representation of the storyline of the unit
Copymaster Compilation	Compilation of all copymasters for the teacher to print and copy throughout the unit
Flextension Compilation	Compilation of all copymasters for Hands-on Flextension lessons throughout the unit
Investigation Notebook	Digital version of the Investigation Notebook, for copying and projecting
Multi-Language Glossary	Glossary of unit vocabulary in multiple languages
NGSS Information for Parents and Guardians	Information for parents about the NGSS and the shifts for teaching and learning
Print Materials (8.5" x 11")	Digital compilation of printed cards (i.e. vocabulary cards, student card sets) provided in the kit
Print Materials (11" x 17")	Digital compilation of printed Chapter Questions and Key Concepts provided in the kit

Unit Guide scavenger hunt

The purpose of this activity is to practice utilizing the Unit Guide resources to answer questions. Practicing now will help you determine which Unit Guide resources to use when questions arise as you're teaching.

Use the Unit Guide resources document to help decide and record which resource you would use to answer each question. For additional practice, open the resource you've identified, and record your answer in the space provided.

What is the Chapter 1 3-D Statement?

Unit Guide document to reference:	Answer:

List a fact or idea that helps you better understand this unit's science content.

Unit Guide document to reference:	Answer:

What's one teacher-provided material you'll need in Chapter 1?

Unit Guide document to reference:	Answer:

Which Chapter 1 lesson requires the most preparation time?

Unit Guide document to reference:	Answer:

What do students do in the first activity of Lesson 3.1?

Unit Guide document to reference:	Answer:

Unit Guide scavenger hunt cont.

Which lessons in Chapter 2 include On-the-Fly Assessments?

Unit Guide document to reference:	Answer:

[GRADES 2-5] Describe an activity that students do with a digital app in the unit.

Unit Guide document to reference:	Answer:

List some of the NGSS crosscutting concepts emphasized in the unit.

Unit Guide document to reference:	Answer:

What is one book that students read in this unit?

Unit Guide document to reference:	Answer:

Describe one notebook page students complete in the unit.

Unit Guide document to reference:	Answer:

Navigation within a lesson

AmplifyScience > Environments and Survival > Chapter 2 > Lesson 2.5

Lesson 2.5: Making Sense of Traits and Survival

Lesson Brief (3 Activities)

- 1 MODELING TOOL
Modeling Ideas About Traits and Survival
- 2 STUDENT-TO-STUDENT DISCUSSION
Concept Mapping
- 3 TEACHER-LED DISCUSSION
Reflecting on Traits and Survival

RESET LESSON

GENERATE PRINTABLE LESSON GUIDE

Overview

Students use the *Environments and Survival* Modeling Tool to apply their knowledge of how different traits can make it easier or harder for organisms to meet their needs in a given environment. Students create two digital models and consider the traits of different organisms, as well as key aspects of the environment, to decide

Digital Resources

- Classroom Slides 2.5 | PowerPoint
- Classroom Videos 2.5 | Zip

1. The lesson's landing page is referred to as the **Lesson Brief**. Above is an example from a lesson in the grade 3 Environments and Survival unit. The Lesson Brief provides valuable information to support teachers, including an overview of the content that will be covered in the lesson.

Navigation within a lesson (cont.)

AmplifyScience > Environments and Survival > Chapter 2 > Lesson 2.5

RESET LESSON

GENERATE PRINTABLE LESSON GUIDE

Overview

Students use the *Environments and Survival* Modeling Tool to apply their knowledge of how different traits can make it easier or harder for organisms to meet their needs in a given environment. Students create two digital models and consider the traits of different organisms, as well as key aspects of the environment, to decide which organisms are more likely or less likely to survive. Students return to the Concept Mapping routine to discuss what they have been learning, and this time they record their concept maps. Students then reflect on the Investigation Question. The purpose of this lesson is for students to engage in sense-making activities in which they consolidate their understanding about how organisms' traits affect their likelihood of survival in a given environment.

Anchor Phenomenon: Over the past 10 years, the snails with yellow shells have not survived as well as the snails with banded shells.

Digital Resources

- Classroom Slides 2.5 | PowerPoint
- Classroom Videos 2.5 | Zip
- Examples of Concept Mapping
- Concept Mapping Cards, Small: Set 2 copymaster
- Concept Mapping Cards, Large: Set 2 copymaster
- Optional: Chapter 2 Home Investigation: Adaptive and Non-Adaptive Traits copymaster

2. Navigate between each section on the page by either scrolling or clicking the index in the left column. You can always return to the top by clicking on the “Back to Top” button in the bottom left corner.

- The **Overview** includes a summary of the lesson, describes what students will learn, and provides activity summaries and timing.
- **Materials and Preparation** provides a list of materials for the lesson, and how to prepare for teaching.
- **Differentiation** describes supports and strategies for differentiation.
- **Standards** details which standards the lesson is aligned to.
- **Vocabulary** lists focal vocabulary emphasized in the lesson.
- **Unplugged** lists recommendations for working offline.

3. Select **GENERATE PRINTABLE LESSON GUIDE** to access a downloadable PDF that includes all of the content in digital format, including teacher supports, possible responses, and assessments.

4. **Digital Resources** provide all of the resources for a lesson, which may include Classroom Slides, projections, copymasters, videos, and reference illustrations for teacher reference. Each resource can be downloaded before each lesson.

Lesson Brief (3 Activities)

1 MODELING TOOL Modeling Ideas About Traits and Survival

2 STUDENT-TO-STUDENT DISCUSSION Concept Mapping

3 TEACHER-LED DISCUSSION Reflecting on Traits and Survival

5. The **Lesson Map**, shown above, displays the sequence of the activity titles which, once selected, access each activity's instructional guide. An arrow > at the right end of the lesson map lets you know that there are more activities in a lesson than what's shown.


6. **Activity titles** in the Lesson Map are numbered to help teachers navigate through the lesson.

Navigation within a lesson (cont.)

The screenshot displays the AmplifyScience interface for a lesson titled "Modeling Ideas About Traits and Survival". At the top, a breadcrumb trail shows the navigation path: AmplifyScience > Environments and Survival > Chapter 2 > Lesson 2.5. Below this, three activity cards are visible: 1. MODELING TOOL (Modeling Ideas About Traits and Survival), 2. STUDENT-TO-STUDENT DISCUSSION (Concept Mapping), and 3. TEACHER-LED DISCUSSION (Reflecting on Traits and Survival). The main content area features the title "Modeling Ideas About Traits and Survival" and a description: "Partners create digital models to show their ideas about how an organism's traits affect its likelihood of survival in an environment. (30 min)". To the right of the description are two icons: "EMBEDDED FORMATIVE ASSESSMENT" (a hummingbird) and "INSTRUCTIONAL GUIDE" (a person). Below the description is a navigation bar with four tabs: "Step-by-step" (highlighted with a purple underline), "Teacher Support", "Possible Responses", and "My Notes". The main content area contains two numbered steps, each with a purple speech bubble icon indicating teacher talk. Step 1: "Set purpose for the lesson by connecting to students' role and the Chapter 2 Question." Step 2: "Refer to the Investigation Question. Draw students' attention to the Investigation Question on the board."

 7. Once in an activity, you will see the **INSTRUCTIONAL GUIDE**, within which are the following tabs:

STEP-BY-STEP lists all of the steps for teaching the activity. This will be open by default when you first navigate to the activity.

- **Bold lead-ins** summarize what happens in each instructional step.
- Purple speech bubbles  indicate **teacher talk**, suggestions for what you should say as you teach.
- Text in brackets [] indicates an expected student response.

TEACHER SUPPORT provides suggestions, rationale, and background information.

POSSIBLE RESPONSES indicate possible student responses for independent or small group activities.

MY NOTES provides a space to record thoughts and observations about each activity.

Note: If there are no Teacher Support notes for the activity, the Teacher Support tab will not appear.

Likewise, if there are no possible responses for the activity, the Possible Responses tab will not appear.



8. The **grey hummingbird** indicates there is an **embedded formative assessment** in this activity.

Click on the hummingbird to view the assessment (the icon turns orange to indicate selection).

9. The **breadcrumb trail** (Unit-Chapter-Lesson) (top left) can be used to navigate to different parts of the unit.

Additional Amplify Resources

Program Guide

Additional insight into the program's structure, intent, philosophies, supports, and flexibility.

my.amplify.com/programguide

California Edition:

<http://amplify.com/science/california/review>

Louisiana Edition:

<https://my.amplify.com/programguide/content/louisiana/welcome/elementary-school/>

Amplify Help

Frequently updated compilation of articles with advice and answers from the Amplify team.

my.amplify.com/help

Family Resources Site

<https://amplify.com/amplify-science-family-resource-intro/>

Amplify Support

Contact the Amplify support team for information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-7PM EST.

Email: scihelp@amplify.com

Phone: 800-823-1969

Or, reach Amplify Chat by clicking the  icon at the bottom right of the digital Teacher's Guide.

When contacting the support team:

- Identify yourself as an Amplify Science user.
- Note the unit you are teaching.
- Note the type of device you are using (Chromebook, iPad, Windows, laptop).
- Note the web browser you are using (Chrome or Safari).
- Include a screenshot of the problem, if possible. Copy your district or site IT contact on emails.

Amplify Science

