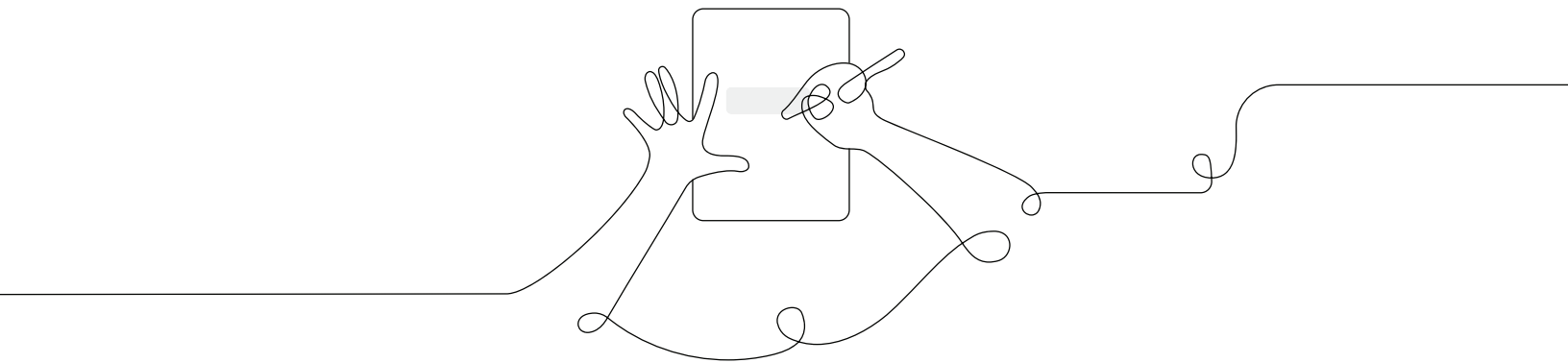


Administrators' Orientation Participant Notebook



Welcome to the workshop

This Participant Notebook will serve as a resource during today's workshop.

Administrators' Orientation Grades 6–8

Middle school course curriculum structure

New York City Program*

Grade 6

- Launch: Harnessing Human Energy
- Thermal Energy
- Populations and Resources
- Matter and Energy in Ecosystems
- Weather Patterns
- Ocean, Atmosphere, and Climate
- Earth's Changing Climate

Grade 7

- Launch: Microbiome
- Metabolism
- Phase Change
- Chemical Reactions
- Plate Motion
- Engineering Internship: Plate Motion
- Rock Transformations
- Engineering Internship: Earth's Changing Climate

Grade 8

- Launch: Geology on Mars
- Earth, Moon, and Sun
- Force and Motion
- Engineering Internship: Force and Motion
- Magnetic Fields
- Light Waves
- Traits and Reproduction
- Natural Selection
- Evolutionary History

AmplifyScience

authored by

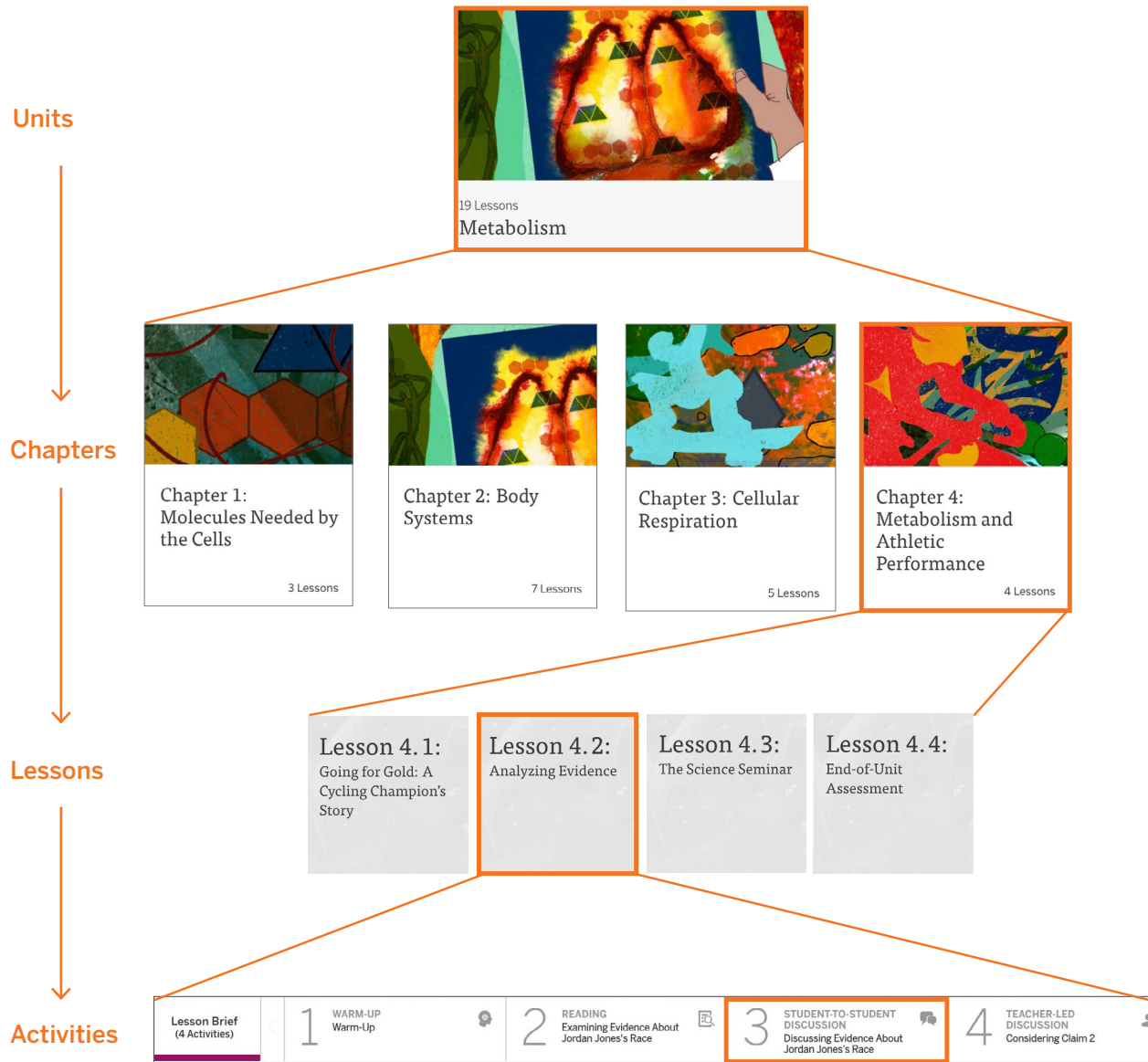


THE LAWRENCE
HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

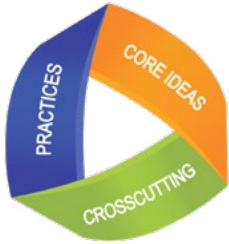
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Amplify Science unit structure

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



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:

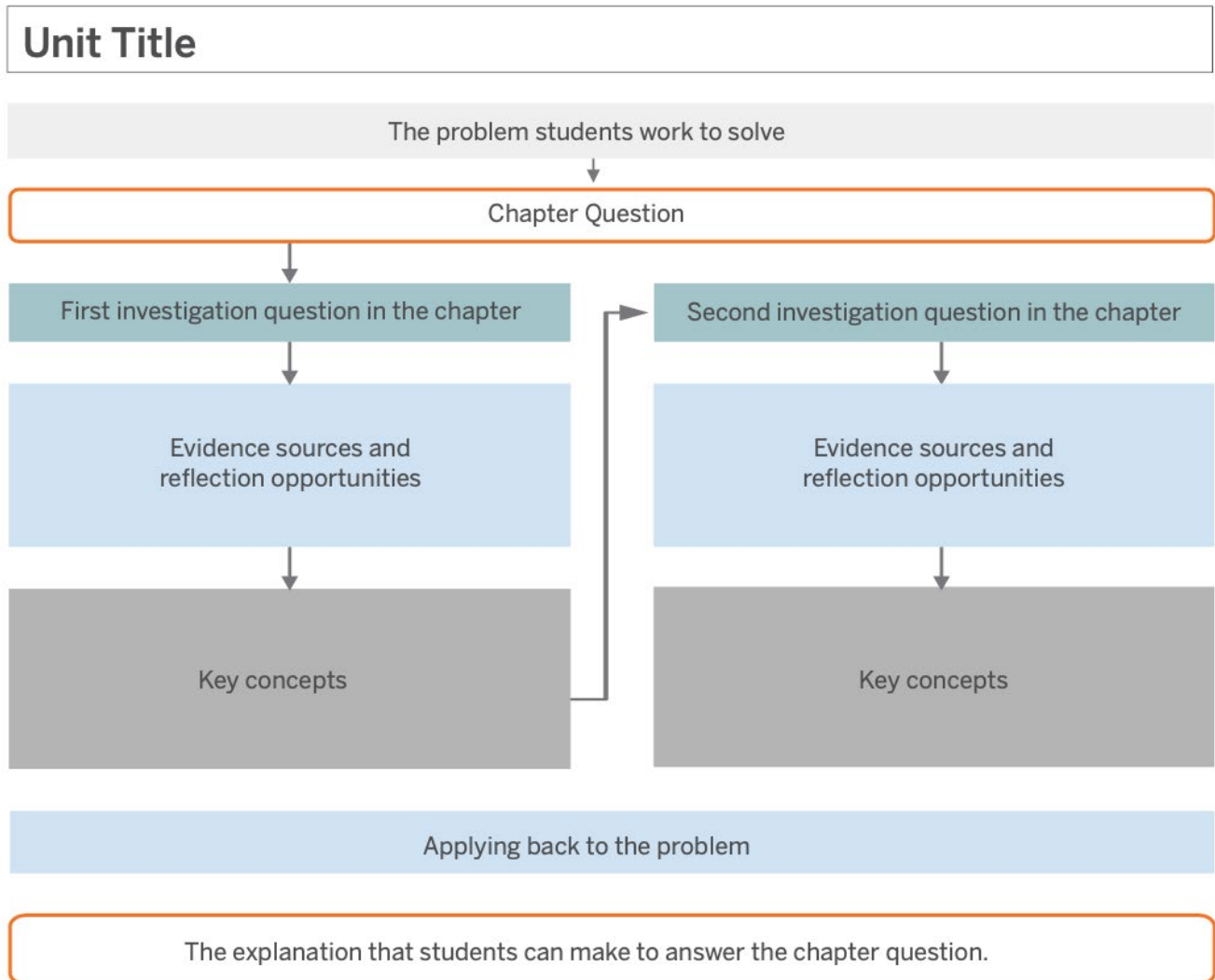
ETS1: Engineering Design
ETS2: Links among Engineering Technology, Science and Society

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

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.

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
Articles 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 6-8)
Flexextensions in This Unit	Summarizes information about the Hands-On Flexextension 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
Flexextension Compilation	Compilation of all copymasters for Hands-on Flexextension lessons throughout the unit
Investigation Notebook	Digital version of the Investigation Notebook, for copying and projecting
Multi-Language Glossary	Unit vocabulary words in 10 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

Assessment System reference

Assessment type	Description	Student experience	Teacher resources
Pre-Unit Assessment	Formative, 3-D assessment meant to gauge students' initial understanding and pre-conceptions about core ideas in the unit, including the unit's focal crosscutting concept	<ul style="list-style-type: none"> • Multiple choice questions • Two written response questions 	<ul style="list-style-type: none"> • Pre-Unit Assessment Answer Key and Scoring Guide (available in Digital Resources), includes rubrics for both disciplinary core ideas and crosscutting concepts • Reporting Function provides analysis of results, places students along the Progress Build, and provides information to the teacher about specific preconceptions students may hold
End-of-Unit Assessment	Summative, 3-D assessment to evaluate students' growth in understanding about core ideas in the unit, including the unit's focal crosscutting concept	<ul style="list-style-type: none"> • Multiple choice questions • Two written response questions 	<ul style="list-style-type: none"> • End-of-Unit Assessment Answer Key and Scoring Guide (available in Digital Resources), includes rubrics for both disciplinary core ideas and crosscutting concepts • Reporting Function provides analysis of results, places students along the Progress Build, and provides information to the teacher about specific preconceptions students may hold
Critical Juncture Assessment	Formative, 3-D assessment meant to gauge student's growing understanding and pre-conceptions about core ideas in the unit, including the unit's focal crosscutting concept, in order to inform a differentiated lesson to bring all students to a point where they can move on together	<ul style="list-style-type: none"> • Multiple choice questions • Two written response questions • Following lesson is differentiated based on the results to help students review and construct needed concepts 	<ul style="list-style-type: none"> • Critical Juncture Assessment Answer Key and Scoring Guide (available in Digital Resources), includes rubrics for both disciplinary core ideas and crosscutting concepts • Reporting Function provides analysis of results, places students along the Progress Build, provides information to the teacher about specific preconceptions students may hold, and recommends grouping for following differentiated lesson
On-the-Fly Assessments	Embedded formative assessments for noting students' progress with one or more of the following: disciplinary core ideas, science and engineering practices, and crosscutting concepts	<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 orange hummingbird icon • All On-the-Fly Assessments are included in: Embedded Formative Assessments (available in the Unit Guide)

Assessment System reference cont.

Assessment type	Description	Student experience	Teacher resources
Final Written Argument	Embedded summative assessment to gauge students' understanding of core ideas in the Progress Build, application of a crosscutting concept central to the unit, and their use of several science practices, including engaging in argument from evidence	<ul style="list-style-type: none"> • Written argument about the Chapter 4 Science Seminar question • Multiple embedded pedagogical supports 	<ul style="list-style-type: none"> • Rubrics for Final Written Argument (available in Digital Resources)
Student Self-Assessments	Opportunity for students to reflect on whether they understand or don't yet understand about the core concepts from the unit and key nature of science ideas	<ul style="list-style-type: none"> • Reflection prompts • Provided at or near the end of each chapter 	<ul style="list-style-type: none"> • Information about Student Self-Assessments in Assessment System (available in the Unit Guide) • Teacher Support notes accessible in Instructional Guide by clicking the Teacher Support tab
Investigation Assessments (1 or 2 per year)	Summative, 3-D performance assessment to evaluate students' performance of the science and engineering practices of Planning and Conducting 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 copymaster (available in Digital Resources) • Materials (physical or digital) for conducting investigation 	<ul style="list-style-type: none"> • Rubrics and Possible Responses • 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>)

Getting started with 6-8 Amplify Science: Administrator's Guide

Organizational area	Points to remember
<p><u>INITIAL TRAINING & PROFESSIONAL LEARNING OPPORTUNITIES</u></p> <ul style="list-style-type: none"> □ Schedule time for teachers to receive training □ Provide an opportunity for teachers to understand your school's vision for implementing Amplify Science prior to their training □ Devise and deliver messaging to parents 	<ul style="list-style-type: none"> ● Teacher buy-in
<p><u>PACING UNITS THROUGHOUT THE SCHOOL YEAR</u></p> <ul style="list-style-type: none"> □ Determine pacing/scope and sequence of units and time allocated for daily science instruction in collaboration with the department chair/grade-level lead □ Identify how much time is dedicated to science instruction at each grade level and modify the schedule to accommodate full implementation 	<ul style="list-style-type: none"> ● 1 Launch unit <ul style="list-style-type: none"> ○ 11 lessons ● 6 Core units <ul style="list-style-type: none"> ○ 19 lessons ● 2 Engineering units <ul style="list-style-type: none"> ○ 10 lessons ● Year at a glance (pg. 3)
<p><u>TECHNOLOGY READINESS & ACCESS</u></p> <ul style="list-style-type: none"> □ Identify a technology support person (school & district level) □ Test internet connection speeds to ensure successful internet access □ Ensure all teachers have account log-ins and accessed the digital Teacher's Guide and no content filters block access (learning.amplify.com) □ Ensure all teachers establish routines and logistics for device management in their classroom (if applicable) □ Ensure that all teachers are using either Chrome or Safari web browsers □ Devices in-use by teachers (and students) are: iPad 3 or more recent models, MacBook, Chromebooks, or Windows laptops or desktops 	<ul style="list-style-type: none"> ● Contact scihelp@amplify.com if you have any teacher log-in issues. ● Technology readiness will support teachers' ability to teach all units and address all standards.
<p><u>MANAGING SCIENCE RESOURCES</u></p> <ul style="list-style-type: none"> □ Appoint a point-of-contact to organize and distribute kit resources for immediate teacher access based on unit order and pacing □ Ensure kit resources are provided to the teacher at least 1 week prior to the expected start of instruction □ Review the materials list inside of each kit, at each grade level, and identify the items on the list that are "teacher provided items"; secure these items at least 1 week prior to the expected start of instruction □ Ensure all teachers establish routines for managing kit resources in their classrooms (manipulatives, Investigations Notebooks, etc.) 	<ul style="list-style-type: none"> ● The Amplify Science curriculum integrates hands-on materials and classroom wall resources. Some items are provided in the kit and others are "teacher provided."
<p><u>MONITORING INITIAL IMPLEMENTATION</u></p> <ul style="list-style-type: none"> □ Schedule time to observe initial implementation, at least two weeks after the units' start date (pacing, routines for technology and materials management) □ Visit classes to identify successes/challenges and provide feedback □ Identify successes and coordinate opportunities for peer-to-peer supports to build capacity and consistency of routines □ Devise an ongoing Professional Learning Plan 	<ul style="list-style-type: none"> ● Amplify Science: Getting started look-for tool (pgs.12-14)
<p><u>SUPPORTING REMOTE LEARNING</u></p> <ul style="list-style-type: none"> □ First, ask yourself: <ul style="list-style-type: none"> ■ How much time do students have to learn science in the upcoming school year? ■ Do your students have access to technology at home, or do you need a print-only solution? □ Use Amplify Science@Home Units if: <ul style="list-style-type: none"> ■ You have significantly less time to teach science than usual □ You can choose from two different @Home Units formats, based on your students' tech access: <ul style="list-style-type: none"> ■ @Home Packets: print-only version ■ @Home Slides: digital version, integrating digital slide decks and print or .pdf packets □ Use Amplify Science@Home Videos if: <ul style="list-style-type: none"> ■ Your students have consistent access to digital devices at home ■ You have about the same amount of time for teaching science as you normally would 	<ul style="list-style-type: none"> ● amplify.com/remote learning <ul style="list-style-type: none"> ○ Access resources and suggestions for using Amplify programs remotely. ● Program Hub <ul style="list-style-type: none"> ○ Access Amplify Science@Home Videos and Amplify Science@Home Units

Amplify Science: Getting started look-for tool

Look for #1: Students are accessing the resources: <i>This category is intended to highlight visible signs of using the Amplify Science curriculum. These observations can be made over 5-10 minutes or longer.</i>	
Sample evidence through observations and questions	Notes and observations
<p>Classroom environment look-fors:</p> <ul style="list-style-type: none">• Classroom wall• Co-constructed charts• Established routines for ease of access to resources• Projections and posters are clear <p>Student look-fors:</p> <ul style="list-style-type: none">• Referencing classroom wall resources as appropriate• Accessing digital tools, print, and physical resources with ease	

Look for #2: Students are engaged in gathering evidence from multiple sources to Investigate Phenomena. This category is intended to highlight how students are accessing the curriculum in a way that promotes three-dimensional learning. These look-fors need at least 15 minutes to a full lesson, or multiple lessons, to observe.

Tip: Reference the 3-D statement and the “Standards and Goals” section in the specific lesson you are observing for the specific core ideas, crosscutting concepts and science and engineering practices in the lesson.

Indicators of engaging with multiple sources of evidence may include students figuring out phenomena like a scientist, engaged in 3-D learning. You will notice students participating in multiple modalities (do, read, talk, write and/or visualize), during which they use academic language and unit words to access and convey ideas. Over time, you will notice students having multiple opportunities to construct understanding.

Sample evidence through observations and questions

Classroom environment look-fors:

- Students engaged in their work in pairs, in small groups, as a full class, or individually.
- Students engaged in one or more of the Science and Engineering Practices to figure out core ideas, and/or applying crosscutting concepts to connect what they are learning to other ideas in science.

Student look-fors

- Students writing or drawing
- Students engaged in hands-on investigations, modeling or design
- Students engaged in digital investigations or modeling
- Students reading
- Students discussing

Student Questions to ask:

- What are you figuring out today?
- What can you tell me about the chapter question?
- How did you figure that out? What is your evidence?

Notes and observations

Look for #3: Students engage in deep learning over time, along the Progress Build. This category is intended to highlight how students are deepening their understanding over time and may require observations over time, across multiple class periods within a unit.

Indicators of deepening understanding along the progress build may include how students constructing increasingly complex explanations over time. You may notice students engaged in flexible, differentiated small group instruction in response to assessment. Over time, students working towards meeting grade-level expectations for practices, CCC, or DCIs in the NGSS.

Sample evidence through observations and questions

Notes and observations

Classroom environment look-fors:

- Lesson connecting to prior or future learning;

Teacher questions:

- In this lesson, what are students figuring out?
- Are there some students who are having some difficulty engaging in practices, understanding core ideas or applying CCCs? What are next steps for them?
- What are you learning from your students that is impacting your instructional plans?

Student questions:

- What have you figured out so far in this unit?
- Has your thinking changed over time?

Navigation within a lesson

The screenshot shows the AmplifyScience interface for Lesson 4.2: Analyzing Evidence. At the top, the breadcrumb navigation reads: AmplifyScience > Metabolism > Chapter 4 > Lesson 4.2. The main header area features a colorful, abstract background with the text "Lesson 4.2: Analyzing Evidence". Below this is a horizontal navigation bar with four activity steps: 1. WARM-UP Warm-Up (highlighted with a purple bar), 2. READING Examining Evidence About Jordan Jones's Race, 3. STUDENT-TO-STUDENT DISCUSSION Discussing Evidence About Jordan Jones's Race, and 4. TEACHER-LED DISCUSSION Considering Claim 2. Below the navigation bar are two buttons: "RESET LESSON" and "GENERATE PRINTABLE LESSON GUIDE". On the left, a sidebar menu includes "Lesson Brief (4 Activities)", "Overview", and "Materials & Preparation". On the right, under "Digital Resources", there are links for "All Projections" and "Science Seminar Claim Cards copymaster". A small orange envelope icon is in the bottom right corner.

1. The lesson's landing page is referred to as the **Lesson Brief**. This is an example from a lesson in the middle school unit Metabolism. 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 shows the AmplifyScience interface for Lesson 4.2. At the top, the navigation bar includes the AmplifyScience logo, the path 'Metabolism > Chapter 4 > Lesson 4.2', and a user profile icon. Below this is a 'Lesson Map' with four activities: 1. WARM-UP Warm-Up, 2. READING Examining Evidence About Jordan Jones's Race, 3. STUDENT-TO-STUDENT DISCUSSION Discussing Evidence About Jordan Jones's Race, and 4. TEACHER-LED DISCUSSION Considering Claim 2. The main content area is divided into two columns. The left column has a 'Lesson Brief' section with a 'RESET LESSON' button and a list of options: Overview, Materials & Preparation, Differentiation, Standards, Vocabulary, and Unplugged?, each with a drop-down arrow. The right column has a 'GENERATE PRINTABLE LESSON GUIDE' button and a 'Digital Resources' section with a list of resources: All Projections, Science Seminar Claim Cards copymaster, Metabolism Investigation Notebook, pages 101-104, Metabolism Glossary, and Metabolism Multi-Language Glossary. At the bottom right, there is a 'View Credits' link and a chat icon.

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 On-the-Fly Assessments.

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


The screenshot shows the Lesson Map navigation bar with four activities: 1. WARM-UP Warm-Up, 2. READING Examining Evidence About Jordan Jones's Race, 3. STUDENT-TO-STUDENT DISCUSSION Discussing Evidence About Jordan Jones's Race, and 4. TEACHER-LED DISCUSSION Considering Claim 2. The third activity is highlighted with a red box, and a red arrow points to the right-pointing chevron icon at the end of the bar.

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 4.2. The breadcrumb trail at the top left reads: AmplifyScience > Metabolism > Chapter 4 > Lesson 4.2. The navigation bar contains four activity tabs: 1 WARM-UP Warm-Up, 2 READING Examining Evidence About Jordan Jones's Race, 3 STUDENT-TO-STUDENT DISCUSSION Discussing Evidence About Jordan Jones's Race (highlighted), and 4 TEACHER-LED DISCUSSION Considering Claim 2. The main content area displays the title 'Discussing Evidence About Jordan Jones's R...' and a description: 'Students work in pairs to discuss and sort evidence as it relates to the three claims about Jordan Jones's improved performance. (15 min)'. On the right, there are two icons: a hummingbird for 'EMBEDDED FORMATIVE ASSESSMENT' and a document for 'INSTRUCTIONAL GUIDE'. Below the description is a tabbed interface with three tabs: 'Step-by-step' (selected), 'Teacher Support', and 'My Notes'. The 'Step-by-step' tab contains three numbered steps: 1. Make sure students are seated so they can work with their partners from the previous lesson. 2. Project and review the instructions for discussing the new evidence with a partner. Collapse the instructional guide and project the student screen. Below step 2 are two purple speech bubbles: 'You each have your own set of claim cards, but you should be talking with your partner as you decide how to place each evidence card.' and 'You don't have to agree, but you do need to discuss each card.' 3. Model expectations for student talk about the evidence. Use the Large Science Seminar Evidence Card G. Read the card aloud and explain your thinking about which of the claims this evidence supports.

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 what student answers for written or oral prompts may be.
 - 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.

Navigation within a lesson

AmplifyScience > Earth's Changing Climate > Chapter 1 > Lesson 1.5

Lesson 1.5: Evidence About Gases in the Atmosphere

Lesson Brief (5 Activities) < 1 WARM-UP Warm-Up 2 STUDENT-TO-STUDENT DISCUSSION Analyzing Gas and 3 MODELING TOOL Introducing the Modeling Tool 4 HOMEWORK Homework >

RESET LESSON

GENERATE PRINTABLE LESSON GUIDE

Overview

Materials & Preparation

Differentiation

Standards

Vocabulary

Unplugged?

Overview

Students continue to gather evidence about how different gases affect the atmosphere. Using what they learned about trends and fluctuations, they analyze the strongest data. After comparing temperature data with how different gases have changed over time, students come to conclusions about why ice might be melting. Students are introduced to the Modeling Tool and use this to model one possible claim about the current cause of decreasing ice and increasing temperatures on Earth. The purpose of this lesson is for students to gather evidence about changes in the amount of carbon

Digital Resources

- A Hole in Earth's Ozone Layer
- Printable article: "A Hole in Earth's Ozone Layer"
- Earth's Changing Climate Investigation Notebook, pages 23–30
- Earth's Changing Climate

1. The lesson's landing page is referred to as the **Lesson Brief**. Above is an example from a lesson in the middle school unit Earth's Changing Climate. 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 > Earth's Changing Climate > Chapter 1 > Lesson 1.5

Lesson Brief (5 Activities) < 1 WARM-UP Warm-Up 2 STUDENT-TO-STUDENT DISCUSSION Analyzing Gas and 3 MODELING TOOL Introducing the Modeling Tool 4 HOMEWORK Homework >

RESET LESSON GENERATE PRINTABLE LESSON GUIDE

Overview

Students continue to gather evidence about how different gases affect the atmosphere. Using what they learned about trends and fluctuations, they analyze the strongest data. After comparing temperature data with how different gases have changed over time, students come to conclusions about why ice might be melting. Students are introduced to the Modeling Tool and use this to model one possible claim about the current cause of decreasing ice and increasing temperatures on Earth. The purpose of this lesson is for students to gather evidence about changes in the amount of carbon dioxide or methane in the atmosphere being associated with changes in temperature and to apply this concept to the context of present-day climate change.

Digital Resources

- A Hole in Earth's Ozone Layer
- Printable article: "A Hole in Earth's Ozone Layer"
- Earth's Changing Climate Investigation Notebook, pages 23–30
- Earth's Changing Climate Glossary
- Earth's Changing Climate Multi-Language Glossary

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 On-the-Fly 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 (5 Activities) < 1 WARM-UP Warm-Up 2 STUDENT-TO-STUDENT DISCUSSION Analyzing Gas and 3 MODELING TOOL Introducing the Modeling Tool 4 HOMEWORK Homework >

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 Lesson 1.5. At the top, a breadcrumb trail reads: AmplifyScience > Earth's Changing Climate > Chapter 1 > Lesson 1.5. Below this is a navigation bar with four tabs: 1 WARM-UP Warm-Up (selected), 2 STUDENT-TO-STUDENT DISCUSSION Analyzing Gas and, 3 MODELING TOOL Introducing the Modeling Tool, and 4 HOMEWORK Homework. The main content area is titled 'Warm-Up' and includes a description: 'Students revisit the article that they read for homework. (5 min)'. To the right of the description are two icons: a hummingbird for 'EMBEDDED FORMATIVE ASSESSMENT' and a person for 'INSTRUCTIONAL GUIDE'. Below the description is a tabbed interface with four tabs: 'Step-by-step' (selected), 'Teacher Support', 'Possible Responses', and 'My Notes'. The 'Step-by-step' tab contains two numbered instructions: 1. Project Warm-Up; students work independently. Collapse the instructional guide and project the student screen, or have students turn to page 24 in their Investigation Notebooks. Allow a few minutes for students to individually respond to the Warm-Up. 2. Students share responses. After a minute or two, have students share their responses with a partner.

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 what student answers for written or oral prompts may be.

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>

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

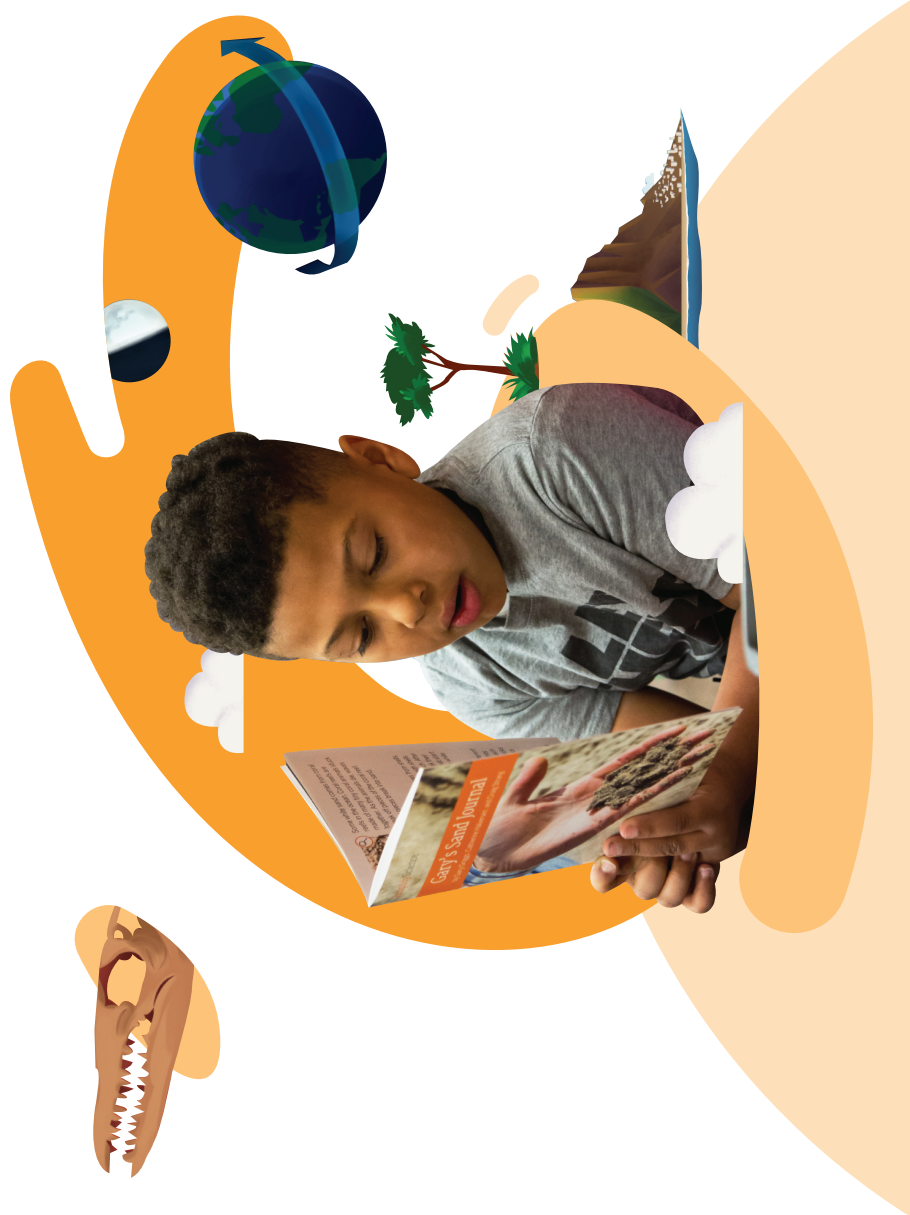
Phone: 800-823-1969

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.

Remote and hybrid learning guide



For most schools in the U.S., back to school this fall will not look like last year. You and your leadership have likely already started conversations about necessary modifications to the schedule, content, and instructional routines, which may include any combination of the following:

Remote learning



ONLINE

Students learn at home **and** have access to some level of technology

OFFLINE

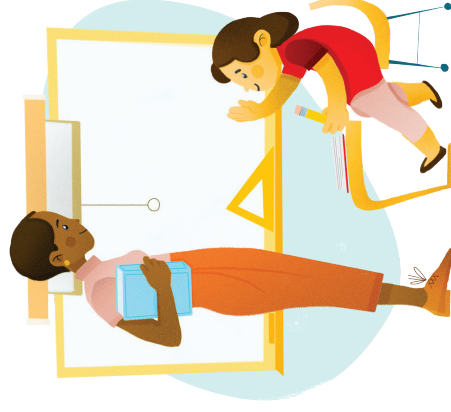
Students learn at home **and do not** have access to technology other than potentially smartphones

Hybrid learning



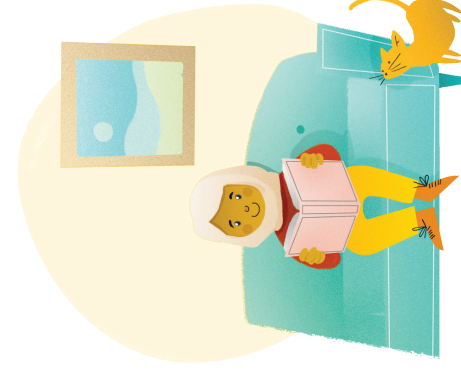
IN-PERSON/ONLINE AT HOME

Students spend some time in school and some at home **and** have access to technology



IN-PERSON/OFFLINE AT HOME

Students spend some time in school and some at home **and do not** have access to technology

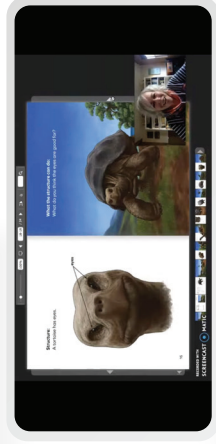


Scenario planning

Amplify is here to help! Amplify Science will soon feature product enhancements and new resources that will help you and your staff effectively manage the new landscape of back to school 2020, including any combination of the previously mentioned scenarios.



In addition to planned program enhancements such as **Classroom Slides for grades 6–8 slides and K–5 read-aloud functionality**, we are launching a new remote learning solution called **Amplify Science@Home** to make extended remote learning and hybrid learning easier. With Amplify Science@Home, teachers gain access to educator-led videos of Amplify Science lessons taught remotely as well as a newly curated selection of key activities from the Amplify Science curriculum that work in no-tech, low-tech, and high-tech scenarios.



Amplify Science@Home

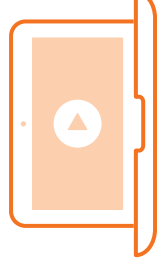
New resources to help you facilitate learning in both remote and hybrid settings.

@Home Videos

Available for each lesson of **Amplify Science, in English and Spanish**

Wish you could bring virtual Amplify Science instruction into your students' homes? Would you like to see examples of how to teach Amplify Science remotely? Our @Home Videos are here to help. The videos show versions of original Amplify Science lessons adapted for remote learning and recorded by real Amplify Science teachers. As a teacher, you can send the @Home Videos directly to students or use the videos as a model to prepare for delivering the lesson yourself—live or recorded!

If you need a print-only solution, or your time for science is significantly reduced, we have you covered! In this case, you'll want to use the new @Home Units.



Reference and teaching resources

@Home Units

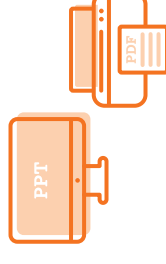
Featuring select activities from **Amplify Science, modified for at-home use**

The @Home Units are modified versions of Amplify Science units, highlighting key activities from the program. The @Home Units allow students to engage with science at home and take significantly less instructional time than the complete Amplify Science program. The @Home Units include:

- Teacher overviews explaining how to use the materials.
- Suggestions for enhancing the @Home Units if you have synchronous learning or in-class time with your students.
- Resources to send home to families.
- Assessment considerations.
- Student materials available in two formats:
 - @Home Slides (PDF/PPT) + Student Sheets (PDF) for students with access to technology at home.
 - Downloadable @Home Packets (PDF) for students without access to technology at home.



Teacher resources



Student resources

Options for teaching Amplify Science remotely

Here are possible implementation models based on 1) time to teach science and 2) resources available to students when learning at home.

“I’m expecting kids to spend significantly less time learning science, and we will have limited or no synchronous instruction time.”

Use the @Home Units as your basis for instruction.

- If students have access to devices at home, use the @Home Slides.
- If students do not have access to devices at home, use the downloadable @Home Packets.
- If you have some synchronous time, whether in class or remote, use the suggestions for adapting the @Home Units to incorporate some synchronous learning.

“I’m expecting kids to spend roughly the same amount of time learning science, and we will have significant synchronous instruction time.”

Use the full Amplify Science program as your basis for instruction. This scenario assumes students have devices at home for remote learning.

- Provide synchronous instruction in class or remotely via web conferencing.
- Supplement with @Home Videos for additional asynchronous instruction.



Support for families

@Home Units include information to send home to families about the unit's goals, materials, and approach. For more general information on the Amplify Science program, families can access the [Family Resources website](#). This site includes a short video introduction to the NGSS standards, a high-level overview of the program's components, summaries of all the units, and ideas for student investigations to conduct at home.

Training resources for teachers

We will be launching a new library of professional learning videos that will give teachers information about how to get started with Amplify Science. New teachers can use these resources to learn about our curriculum materials, navigation, and planning best practices, while even experienced teachers may find these resources to be a useful refresher!

Topics will include:

- Program overview
- Navigation support
- Planning
- Assessment
- Teaching remotely and in hybrid settings using Amplify Science@Home.

These videos launch in June and will be accessible through the digital Teacher's Guide.



Frequently asked questions

Do I need to buy the new @Home Units?

You do not! We are providing the new materials free of charge as PDF and PPT documents to Amplify Science users.

Are you going to have videos of all the hands-on activities?

Yes!

Are resources available in Spanish?

Yes! The student-facing resources associated with the @Home Units, as well as the @Home Videos, will be offered in Spanish.

How will students who use the @Home Packets submit their work?

The answer to this question will depend on district resources and systems, but options could include:

- Photographing their writing and submitting via Google Classroom or other platform.
- Submitting an audio or video recording of an oral response, using a platform like Flipgrid.
- Discussing the prompt with a parent or family member (no written submission from the student).

What is the approach to student discourse and how does it change in a remote setting?

The @Home Units will include suggestions for how to adapt student discourse activities for the range of remote learning contexts.

For more information on Amplify Science,
visit amplify.com/science.



Amplify.



THE LAWRENCE
HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

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Amplify Science

