

Welcome to Amplify Science!

Follow the directions below as we wait to begin.

1. Please log in to your Amplify Account.
2. Sign in using link dropped in chat.
3. In the chat, share your name, grade level, and school you teach in.



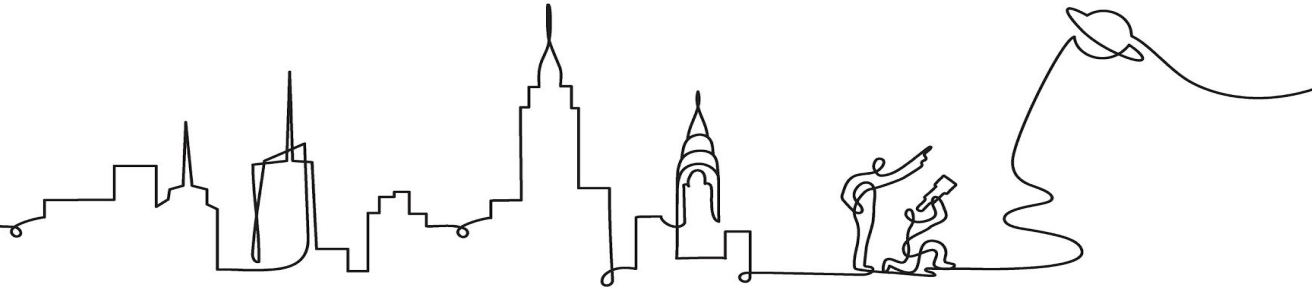
Amplify Science

New York City

Analyzing Student Assessment Data Grade 4- Earth's Features

Date xx

Presented by xx



Remote Professional Learning Norms



Take some time to orient yourself to the platform

- *“Where’s the chat box? What are these squares at the top of my screen?, where’s the mute button?”*



Mute your microphone to reduce background noise unless sharing with the group



The chat box is available for posting questions or responses to during the training



Make sure you have a note-catcher present



Engage at your comfort level - chat, ask questions, discuss, share!

Use two windows for today's webinar

Window #1

Meet - Etiwanda Grade 7 N x +
meet.google.com/hcs-dxpk-wrm?aut...

Miller Copy of Navigation Prop... x Amplify Curriculum
apps.learning.amplify.com/curriculum/#unit/8a31e095506df8a2015256f884b4544_californiaintegrated2019-2020#progress-build

Amplify Science CALIFORNIA > Plate Motion

OPEN PRINTABLE PROGRESS BUILD

Progress Build Level 1: The Earth's entire outer layer (below the water and soil that we see) is made of solid rock that is divided into plates. Earth's plates can move.

Underneath the soil, vegetation, and water that we see on the surface of Earth is the outer layer of Earth's geosphere, the solid part of our rocky planet. This outer layer of Earth is covered entirely with hard, solid rock that is divided into sections called plates. And, these plates can move.

Progress Build Level 2: The plates move on top of a soft, solid layer of rock called the mantle. At plate boundaries where the plates are moving away from each other, rock rises from the mantle and hardens, adding new solid rock to the edges of the plates. At plate boundaries where plates are moving toward each other, one plate moves underneath the other and sinks into the mantle.

Underneath the soil, vegetation, and water that we see on the surface of Earth is the outer layer of Earth's geosphere, the solid part of our rocky

Getting Ready to Teach
Materials and Preparation

Flexension Compilation
Investigation Notebook
NGSS Information for Parents and Guardians
Print Materials (11" x 17")
Print Materials (8.5" x 11")
Offline Preparation
Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.
Offline Guide

Window #2

Amplify Curriculum
apps.learning.amplify.com/curriculu...
Amplify Science CALIFORNIA > Plate Motion > Chapter 1 > Lesson 1.2

Lesson 1.2:
Using Fossils to Understand Earth

Lesson Brief (4 Activities) | 1 WARM-UP Warm-Up | T TEACHER-LED DISCUSSION Why Geologists Value Fossils | 2 TEACHER-LED DISCUSSION Introducing Mesos

RESET LESSON | GENERATE PRINTABLE LESSON

Lesson Brief

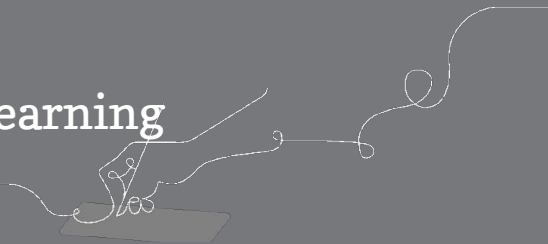
Overview
Materials & Preparation
Differentiation
Español rds

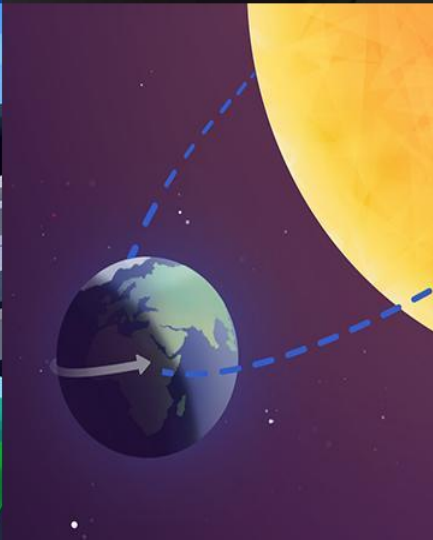
Digital Resources
All Projections
Completed Scientific Argumentation Wall Diagram
Video: Meet a Paleontologist
The Ancient Mesosaurus

Objectives:

By the end of this 1-hour workshop, you will be able to...

- Explore the Amplify Science Formative Assessment system.
- Explore how to use Embedded Formative Assessments to gain access to credible, actionable, and timely diagnostic information about students progress toward learning the unit goals.
- Learn strategies for analyzing student's work & assessment data, examine resources to help plan for tailoring instruction.
- Explore supports for differentiation to meet the diverse learning needs in their classroom





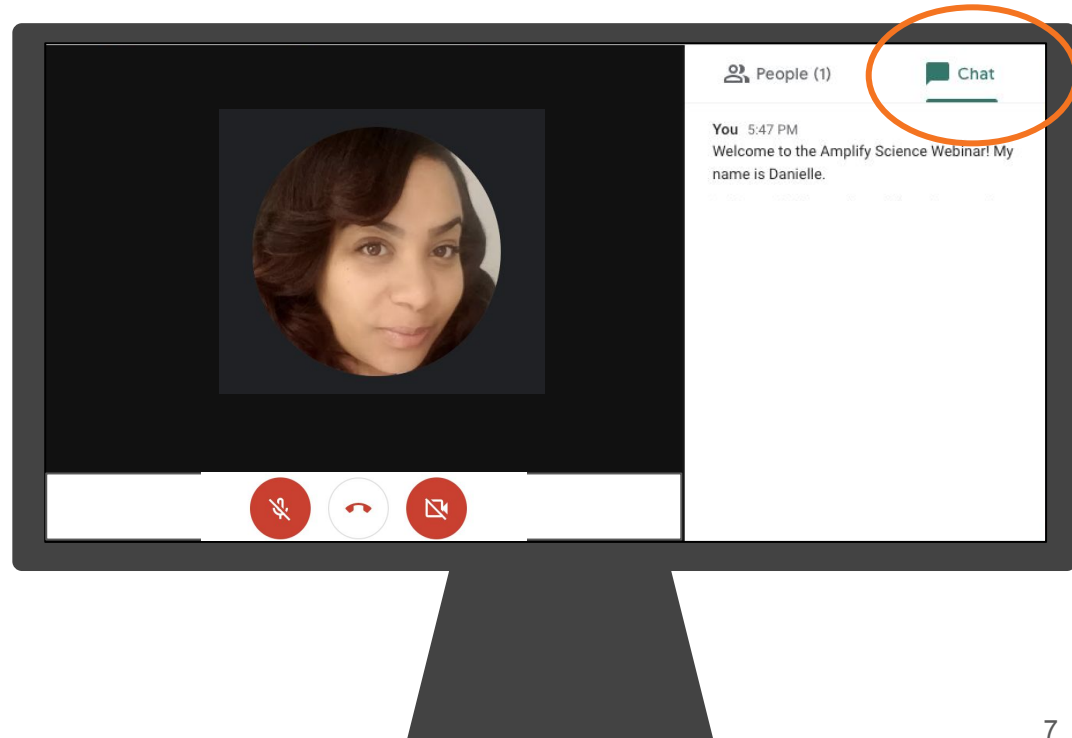
Plan for the day

- **Framing the day**
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- **Amplify Science Assessment System**
 - Credible, Actionable, Timely
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 - Resources for tailoring instruction
- **Amplify Science Embedded Supports**
 - Multimodal Instruction
 - Discourse routines
 - Differentiation/ Meeting the needs of diverse learners
- **Closing**
 - Reflection/Survey

Introductions!

Who do we have in the room today?

- **Introduce yourself (Name, School, Role)**
- **In the chat, share one word or phrase that describes how you teaching Amplify.**



Anticipatory activity

On the Jamboard “post”

- How are you currently collecting student data?
- How are you using that data to form your instruction?

Please respond to the question in the Jamboard. If having difficulty use the chat.

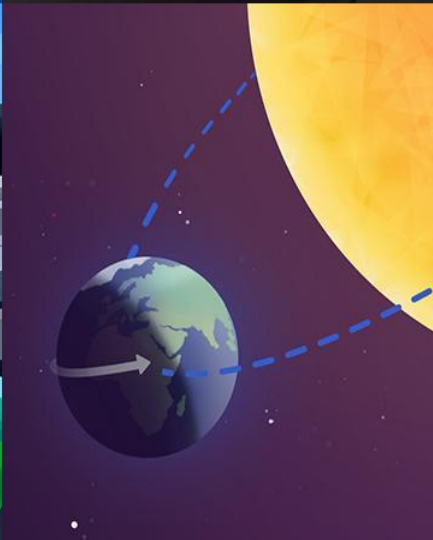
Idea

Idea

Idea

Idea

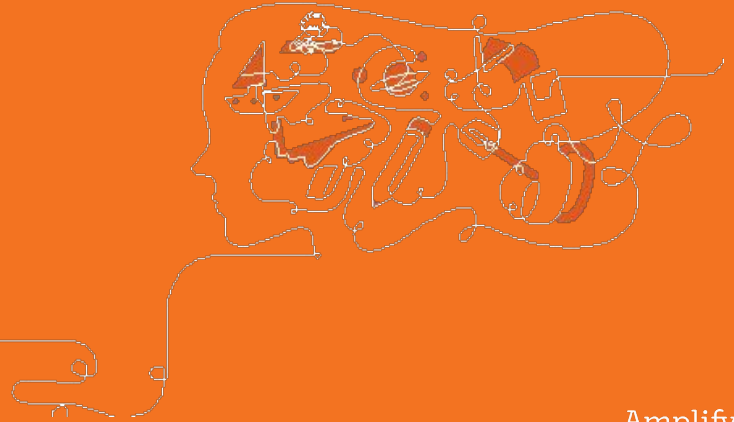
Idea



Plan for the day

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Credible, Actionable, Timely



Design Principles of Formative Assessment

- **Credible:** information from the assessment is trustworthy
- **Actionable:** information is at a level of specificity such that a teacher can use it to bolster instruction
- **Timely:** information comes at a time when a teacher is able to take action and when a student can productively leverage feedback

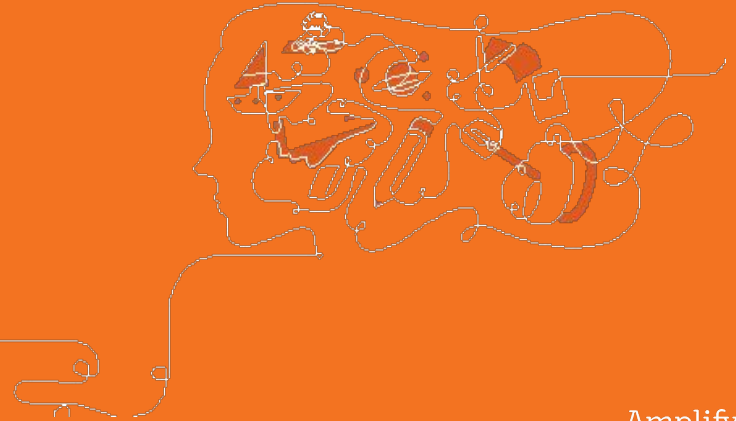
Assessment System

- The Assessment System includes formal and informal opportunities for students to demonstrate understanding and for teachers to gather information throughout the unit. Built largely around instructionally embedded performances, these opportunities encompass a range of modalities that, as a system, attend to the three-dimensional nature of science learning specified in the Next Generation Science Standards (NGSS) and the National Research Council’s *Framework for K–12 Science Education* (2012).
- Each assessment was developed for a particular purpose. Entry-Level and Summative Assessments, includes assessments that can be used to measure growth, including entry-level assessments that reveal students’ thinking at the beginning of the unit, and assessments that indicate students’ level of understanding at the end of the unit, which can show the progress students have made and that can be used summatively.
- The second section, Monitoring Progress, includes assessments that can be used to monitor students’ progress—formative assessments that provide teachers with actionable information and instructional suggestions for supporting students’ learning and keeping all students on track—and assessments that help students monitor their own progress.
- Finally, the Assessments and Grading section provides suggestions around how the assessments might relate to grading.
- Assessment in kindergarten and grade 1 emphasizes multiple opportunities for students to show what they know through their oral and physical responses to prompts during partner and class discussions, through their engagement and participation in activities, and through some independent work products.

Assessment System Components

- **Assessment guides/rubrics:** Guidance is provided to gauge the level of student performance on the assessment task, with suggestions for student feedback and questioning strategies to advance learning, revise performance, or elicit and clarify student thinking. Assessment guides/rubrics are available in Digital Resources in the Lesson Brief for the lesson in which the task occurs.
- **Clipboard Assessment Tool:** The Clipboard Assessment Tool offers support for conducting brief, talk-based checks that reveal students' thinking and correspond to the level of the Progress Build. The Clipboard Assessment Tool is provided at key points in the unit (in Digital Resources) and 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.
- **Possible student responses:** Possible student responses are provided to model how evidence of understanding, or partial understanding, may be demonstrated by the student for the specific task. Possible student responses are provided in the Possible Responses tab in the activity where there is an applicable notebook page. Possible student responses also appear in the Assessment Guide for the End-of-Unit Assessment (in Digital Resources).
- **Look for/Now what? notes:** Each On-the-Fly Assessment includes a two-part description of what evidence of understanding would look like for the task (Look for) and how instruction may be adjusted in response (Now what?). These are accessible by pressing the orange hummingbird icon in the activity in which they appear.
- **Assess understanding/Tailor instruction notes:** Each Critical Juncture Assessment includes a two-part description of how the expected level of student understanding may be demonstrated in the task (Assess understanding) and how instruction may be adjusted in response (Tailor instruction) at the class, group, and student level. These are accessible by pressing the orange hummingbird icon for the activity in which they appear.

Embedded Formative Assessments

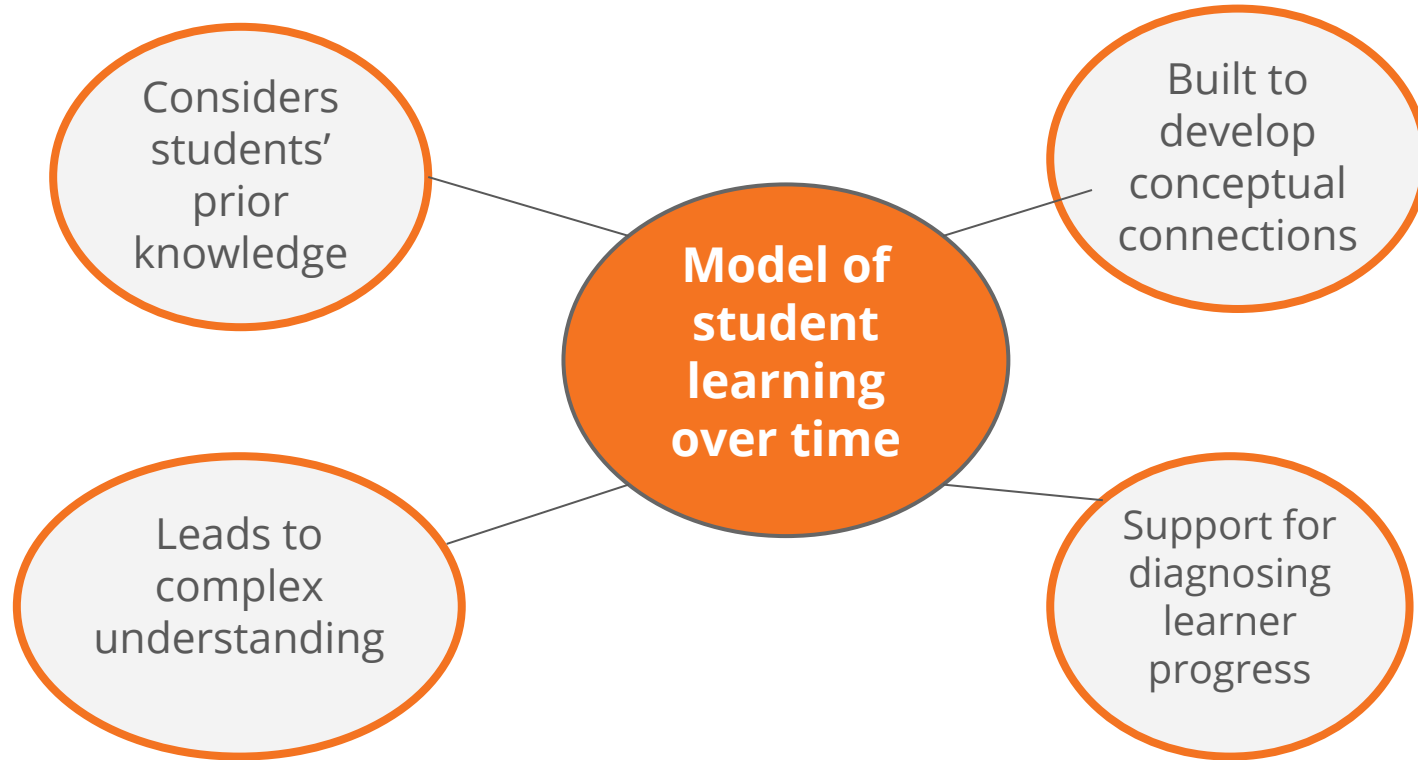


What is Formative Assessment?

Formative assessment is a cycle of eliciting, interpreting, and taking action on information about student learning.



Design Principles of Formative Assessment



Types of assessments



Formative Assessments

Used to guide instruction

Pre-Unit

Designed to gauge students' initial understanding and pre-conceptions about core ideas in the unit.

On-the-Fly

Quick check for understanding designed to help monitor and support student progress throughout the unit.

Critical Juncture

Designed to occur at points in the unit in which it is especially important that students understand the content before continuing.



Summative Assessments

Used to measure student learning at the end of instruction

End-of-Unit

Final evaluation of students' understanding of core ideas in the unit.

Earth's Features Progress Build

Deep, causal understanding



Prior knowledge

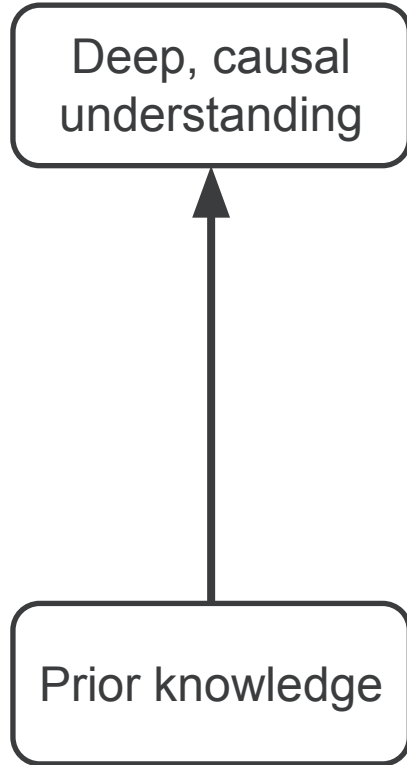
The lowest layer of sedimentary rock formed first, and younger layers formed on top.

Different sedimentary rock forms in different environments.

Sedimentary rock forms when sediment piles up and hardens over time. Fossils can form in the rock if organisms are buried in the sediment.

What new ideas are added at each level?

Pre and End of Unit Assessments



The lowest layer of sedimentary rock formed first, and younger layers formed on top.

Different sedimentary rock forms in different environments.

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Pre-Unit Assessment

- Reveals preconceptions
- Reveals ideas and experiences students can build on throughout the unit
- Contains multiple choice questions and two written responses
- Multiple choice section is auto-scored
- Contains a Scoring Guide with rubrics for analyzing student responses
- Happens in Lesson 1.1

Critical Juncture Assessments

Deep, causal understanding

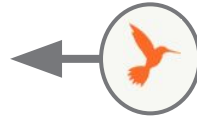


Prior knowledge

The lowest layer of sedimentary rock formed first, and younger layers formed on top.



Different sedimentary rock forms in different environments.



Sedimentary rock forms when sediment piles up and hardens over time. Fossils can form in the rock if organisms are buried in the sediment.



Critical Juncture Assessment

- Occurs at a key point in the unit
- Gauges students' growing understanding about core ideas in the unit
- Contains multiple choice questions and two written responses
- Multiple choice section is auto-scored
- Contains a Scoring Guide with rubrics for analyzing student responses
- Followed by a differentiated lesson based on results

On-the-Fly Assessments

Deep, causal understanding



Prior knowledge



The lowest layer of



sedimentary rock formed first, and



younger layers formed on top.



Different sedimentary rock forms in different



environments.



Sedimentary rock forms when sediment piles up and



hardens over time. Fossils can form in the rock if organisms



are buried in the sediment.

On the Fly Assessment

- Mostly frequently occurring assessment
- Quick check for understanding designed to help monitor and support student progress throughout the unit.
- Provides teachers with an opportunity to adjust instruction to meet student needs
- Contains Look For and Now What evaluation guidance
- Followed by a differentiated lesson based on results

Self Assessments

Deep, causal understanding



Prior knowledge

The lowest layer of sedimentary rock formed first, and younger layers formed on top. 😊

Different sedimentary rock forms in different environments. 😊

Sedimentary rock forms when sediment piles up and hardens over time. Fossils can form in the rock if organisms are buried in the sediment. 😊

Portfolio Assessments

Deep, causal understanding



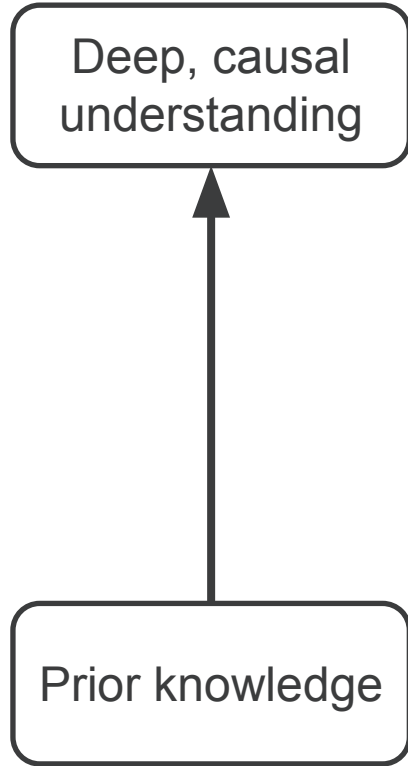
Prior knowledge

The lowest layer of sedimentary rock formed first, and younger layers formed on top.

Different sedimentary rock forms in different environments.

Sedimentary rock forms when sediment piles up and hardens over time. Fossils can form in the rock if organisms are buried in the sediment.

Investigation Assessments



The lowest layer of sedimentary rock formed first, and younger layers formed on top.

Different sedimentary rock forms in different environments.

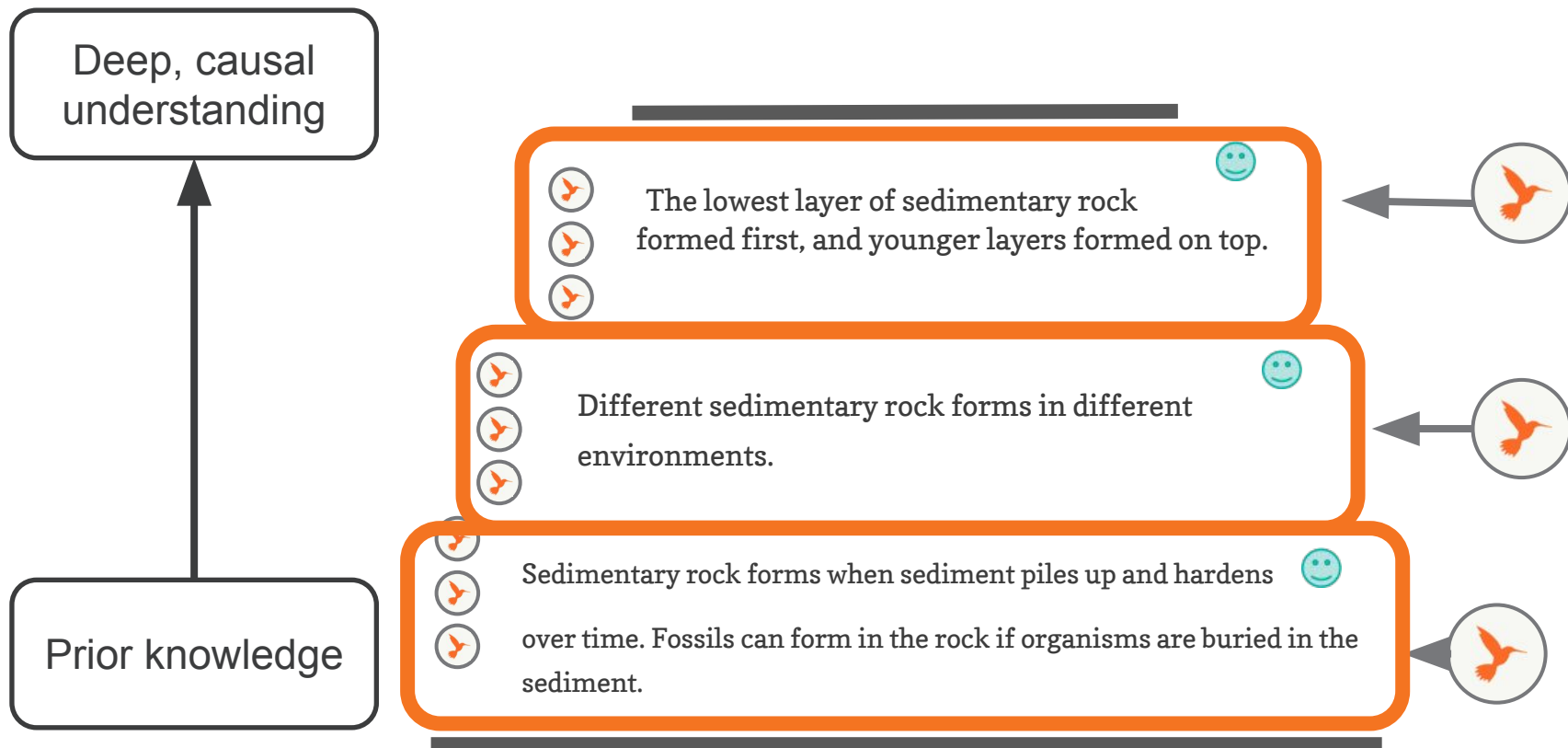
Sedimentary rock forms when sediment piles up and hardens over time. Fossils can form in the rock if organisms are buried in the sediment.

Investigation Assessments



| Grade | Unit Title |
|--------------|--------------------------------|
| Kindergarten | Sunlight and Weather |
| First Grade | Light and Sound |
| Second Grade | Plant and Animal Relationships |
| Third Grade | Balancing Forces |
| Fourth Grade | Vision and Light |
| Fifth Grade | Patterns of Earth and Sky |

Assessment System



Unit Level Assessment Documents

Assessment System:

- explains the organization of the assessment system
- lists out each assessment in the unit with key information
- goes into an explanation of each type of assessment found in the unit

| Assessment Opportunity | Next Generation Science Standards | Printable Resources |
|---|--|---|
| Lesson 1.1: 3-D Performance Task: Scientific Explanation | DCI: <ul style="list-style-type: none">• PS3.A: Definitions of Energy SEPs: <ul style="list-style-type: none">• Practice 1: Asking Questions and Defining Problems• Practice 6: Constructing Explanations and Designing Solutions CCC: <ul style="list-style-type: none">• Systems and System Models | Coherence Flowcharts |
| Assessment Type: Pre-Unit Assessment | | Copymaster Compilation |
| Evaluation Guidance: <ul style="list-style-type: none">• Assessment Guide (in Digital Resources for Lesson 1.1), with support for revealing students' prior knowledge, preconceptions, and to gauge their facility for using the SEPs and CCCs.• Possible Student Responses | | Flextension Compilation |
| | | Investigation Notebook |
| | | Multi-Language Glossary |
| | | NGSS Information for Parents and Guardians |

Embedded Formative Assessments:

- explains what to look for at each assessment opportunity
- gives guidance for instructional next steps



| |
|--------------------------------|
| Standards and Goals |
| 3-D Statements |
| Assessment System |
| Embedded Formative Assessments |
| Books in This Unit |
| Apps in This Unit |
| Flextensions in This Unit |

Lesson 1.2, Activity 4

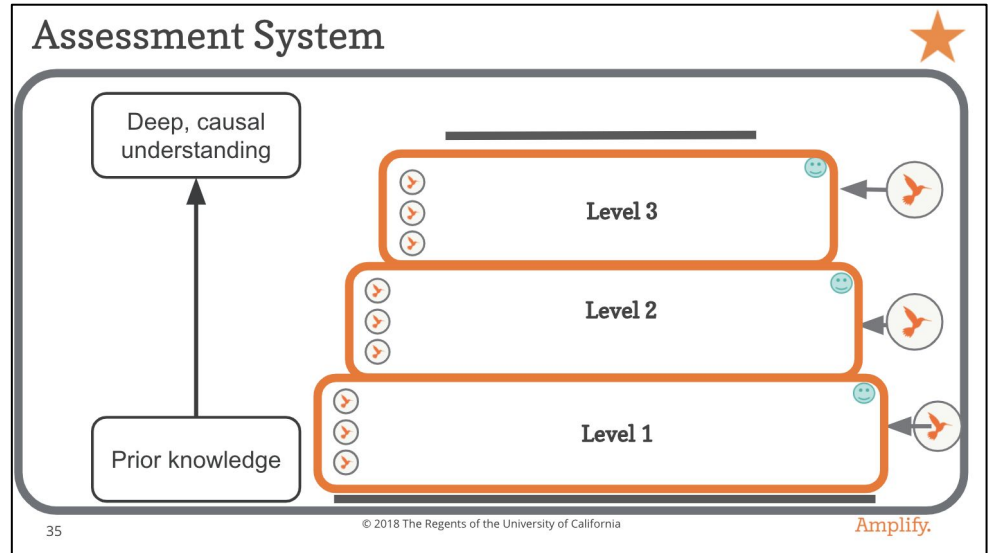
On-the-Fly Assessment 1: Synthesizing Information

Look for: This lesson provides students' first opportunity to learn about and discuss how to synthesize information as a reading strategy. They will continue to develop facility with this strategy throughout the unit through repeated practice. As you circulate, make note of what students are connecting to the reading and what deeper understanding they come to as a result. Are they connecting together relevant pieces of information from different sources? Are they using these connections to help them better understand systems?

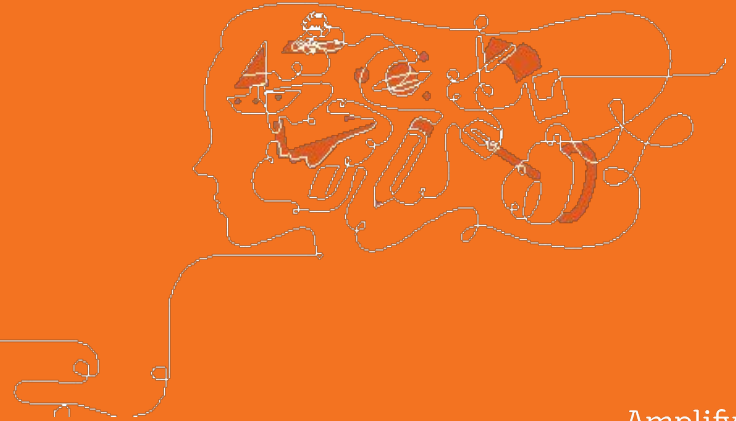
Now what? If students are having trouble getting started with synthesizing, or if they are connecting the reading to unrelated information, provide some additional models. You may wish to provide examples that combine information from the first section of *Systems* with information from other sources. Depending on how many students need this support, you could either coach a few students individually during the reading or you could work with a small group or the whole class. Be sure to remind students to keep in mind the goal of connecting pieces of information in order to come to a deeper understanding of the concept of systems.

Assessment Reflection

- There are many assessment opportunities in each Amplify Science unit.
- What does having this quantity of assessment opportunities do for students? For teachers?



Monitoring Student Progress



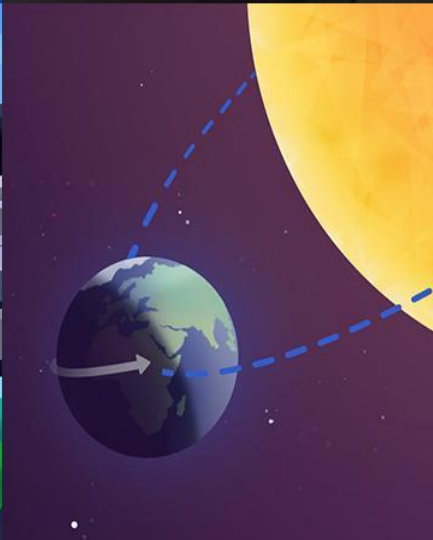
How can you monitor students progress?

- Through the implementation of multimodal instruction
(Do, Talk, Read, Write, Visualize)
- Using the embedded formative assessments
(Pre/End of unit, On-the-fly, Critical Juncture, etc)
- Observation
- Student Work

Multiple Modalities: Do, Talk, Read, Write, Visualize

The crosscutting concept emphasized in the *Earth's Features* unit is Stability and Change. In their role as geologists, students delve deeply into how rock layers and fossils form and what they suggest about the park's geologic history. As students begin to understand the process of rock formation, they learn that although an environment may appear to be stable day by day, it may change a lot over long periods time. Since we can't see these changes on a human timescale, we use rock layers to give us evidence of these changes. Students return to the idea of stability and change again and again throughout the unit, through a variety of modalities.

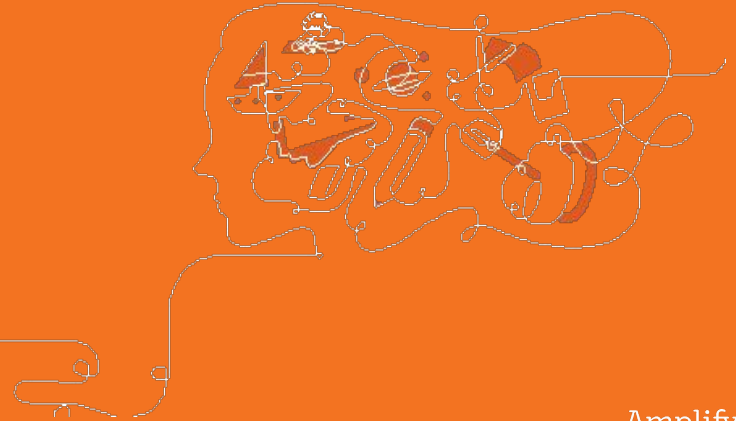
- **Do.** Over the course of the unit, students observe a class sedimentary rock formation model in which layers get thicker, and the environment changes over time.
- **Talk.** Multiple opportunities for student-to-student talk engage the class in figuring out how places on Earth may appear to be staying the same over a short period of time but can change over a long period of time.
- **Read.** Students read a book about weathering and erosion that shows how various rock formations have changed over long periods of time.
- **Write.** During the course of the unit, students write several scientific explanations about the geologic history of Desert Rocks National Park, noting the changes in environment as indicated by the rock layers and fossils present.
- **Visualize.** Through developing models, students work to visualize the process of rock formation and discuss how the various models do not depict a realistic timescale. They can also observe the passage of time in the Simulation via an active time line that advances time forward 10,000 years during rock formation.



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Strategies for Collecting and Analyzing Student Work



Collecting Data

How do you typically collect and record student data?

What strategies have you successfully used for collecting data in a remote learning setting ?

Collecting data

What ideas do you have for collecting student data?

Synchronous

Formative assessments
Summative assessments
Observations
Classwork
Homework
Simulations
Modeling Tools
Student Talk

Asynchronous

Formative assessments
Summative assessments
Observations
Classwork
Homework
Simulations
Modeling Tools
Student Talk

Recording Data

What ideas do you have for collecting student data from assessments?

Synchronous

Amplify Platform

Note - taking

Graphic Organizer

Google doc/forms

Google Classroom

Asynchronous

Amplify Platform

Google Classroom

Google Forms

Google Doc

Third Party Apps

Collecting and Analyzing Embedded Formative Assessment Data

Look at the class data, what do you notice about the class as a whole? Individually?

Amplify Science

[On-The- Fly Status of the Class Data Organization Tool]

Teacher: _____ Grade Level : _____ Date: _____
 Unit Name: _____ Chapter: _____ Lesson: _____

Directions: A.) Determine the "Look For's" for the On the Fly Assessment.

Look For's: (Input all "Look For relevant to the on the fly assessment)

- 1.
- 2.
- 3.

B.) On the chart below, place a **plus (+)** if student demonstrates a strong understanding of the look for, a **backslash (/)** if student demonstrates some understanding and a **minus (-)** if student demonstrates no understanding of the above look for.

C.) After data are collected in the OTF, refer to the NOW WHAT section for ideas on how to respond to your students' needs.

| Student Name | Look For # 1 | Look For # 2 | Look For # 3 | Notes |
|--------------|--------------|--------------|--------------|--|
| A | + | + | + | Use lesson extension |
| B | / | / | / | RT |
| C | - | - | - | Small group reteach required (see differentiation brief) |
| D | + | + | / | RT |
| E | + | - | - | Small group reteach required (see differentiation brief) |
| F | - | - | - | Small group reteach required (see differentiation brief) |
| G | / | / | - | RT |
| H | + | / | - | RT |
| I | + | - | - | Small group reteach required (see differentiation brief) |
| J | + | / | - | RT |
| K | / | - | - | RT |

Earth's Features: Lesson 1.2 Overview

Lesson Goal:

The purpose of this lesson is for students to develop an understanding of the differences between observations and inferences and to learn more about the work of geologists in the field.

Activity 1: Introducing Observations and Inferences

- Students are introduced to observations and inferences through an everyday example.

Activity 2: Preparing to Read: Clues from the Past

- Students are introduced to *Clues from the Past* and preview images and captions that geologists in the book might observe.

Activity 3: Partner Reading

- Students read *Clues from the Past* to learn how geologists use observations and inferences in their work

Activity 4: Sorting Observations and Inferences

- Students sort a series of statements into categories as observations and inferences.


Planning for an Upcoming Assessment

1. Choose an upcoming assessment for your unit.

2. Plan using the template or your note catcher.

| Unit: | | | |
|---|--|---|---|
| Lesson: | | | |
| Analyzing student data: refer to the Look for section of the Lesson ____ assessment. <i>(If using the @Home Units refer to the chapter assessment considerations).</i> | | Taking action based on student data: refer to the Now what section of the ____ assessment and consider how you might adjust instruction in your classroom. | |
| How will I collect data? | Which misconception? | When? | How? |
| | <input type="checkbox"/> Key Concept <input type="checkbox"/> Practice <input type="checkbox"/> Crosscutting Concept Notes: | <input type="checkbox"/> In the moment <input type="checkbox"/> In upcoming activity <input type="checkbox"/> Outside of lesson Notes: | <input type="checkbox"/> Keep an eye on certain students <input type="checkbox"/> Provide additional instruction <input type="checkbox"/> Revisit an activity Notes: |

Model Analysis: 1.2 Activity 4

| Analyzing Student Assessment Data: Refer to the “Look For” section of Lesson 1.2 Act. 4 and refer to your observation notes. | | Taking action based on student data: refer to the Now what section of the 1.2 Act. 4 assessment and consider how you might adjust instruction in your classroom. | |
|--|---|---|---|
| Which misconception?  | Which students? | When? | How? |
| <ul style="list-style-type: none"> <input type="checkbox"/> Key Concept <input type="checkbox"/> Practice <input checked="" type="checkbox"/> Crosscutting Concept <p>Notes:</p> <p><i>This sorting activity is an opportunity to informally assess students' ability to separate observations from inferences. As you circulate, do you notice pairs sorting statements describing what can be sensed with the five senses into the Observation category, and statements that integrate science ideas and prior understanding into the Inferences category?</i></p> <p><i>This is a practice that students will continue to develop throughout this unit, and it is not expected that students will be able to accurately sort all the statements at this point.</i></p> | <p><i>Tristian</i></p> <p><i>Trent</i></p> <p><i>Wanda</i></p> <p><i>Zena</i></p> | <ul style="list-style-type: none"> <input type="checkbox"/> In the moment <input type="checkbox"/> In upcoming activity <input type="checkbox"/> Outside of lesson <p>Notes:</p> | <ul style="list-style-type: none"> <input type="checkbox"/> Keep an eye on certain students <input type="checkbox"/> Provide additional instruction <input type="checkbox"/> Revisit an activity <p>Notes:</p> |

Model Analysis: 1.2 Activity 4

Analyzing Student Assessment Data: Refer to the “Look For” section of Lesson 1.2 Act. 4 and refer to your observation notes.

Taking action based on student data: refer to the Now what section of the 1.2 Act. 4 assessment and consider how you might adjust instruction in your classroom.

Which misconception?



Which students?

- Key Concept
- Practice
- Crosscutting Concept

Notes:

This sorting activity is an opportunity to informally assess students' ability to separate observations from inferences. As you circulate, do you notice pairs sorting statements describing what can be sensed with the five senses into the Observation category, and statements that integrate science ideas and prior understanding into the Inferences category? This is a practice that students will continue to develop throughout this unit, and it is not expected that students will be able to accurately sort all the statements at this point.

*Tristian
Trent
Wanda
Zena*

When?

- In the moment
- In upcoming activity
- Outside of lesson

Notes:

For students who are struggling to sort the statements, ask them about one of the statements at a time, while presenting a series of questions to guide their decisions. Is this statement something that can be observed with the five senses? Which senses?

Would I need to know something about animals or rocks to make this statement? Would somebody who had never before seen something similar to this animal be able to make this statement?

Would I need to make comparisons to other things I know already to make this statement?

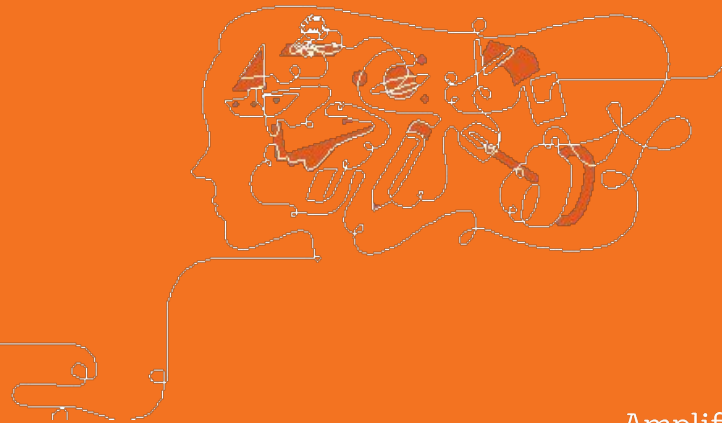
How?

- Keep an eye on certain students
- Provide additional instruction
- Revisit an activity

Notes:

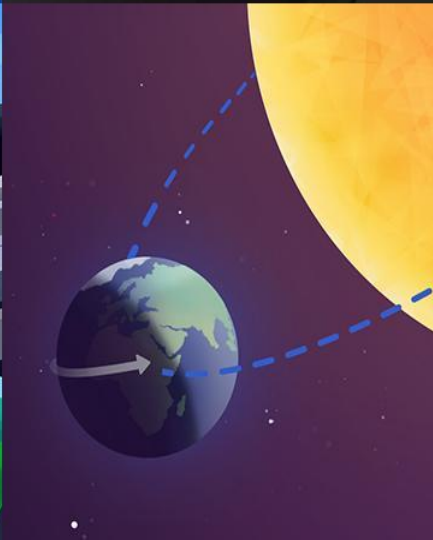
Coach students listed after 1.2 Act 4

Resources for Tailoring Instruction



How do I tailor instruction for my classroom?

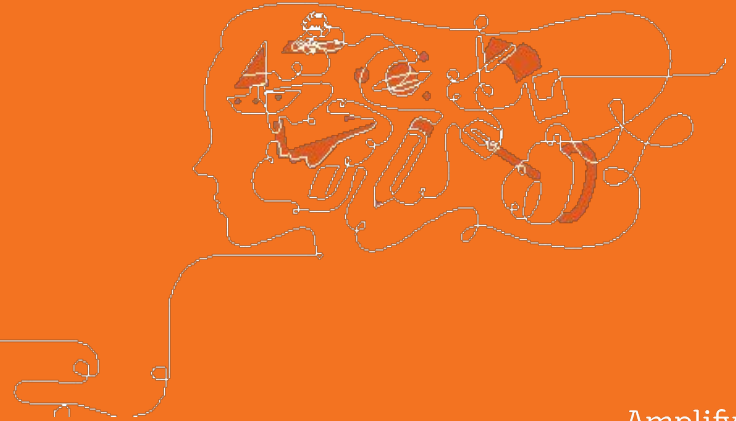
- Group students according to ability level
- Use the “Look For” and “Now what” tools to provide support based on formative assessment data
- Use the differentiation brief within each lesson
- Pull intervention suggestions from the student online component



Plan for the day

- **Framing the day**
 - Welcome and introductions
 - Anticipatory Activity
- **Amplify Science Assessment System**
 - Credible, Actionable, Timely
 - Embedded Formative Assessments
 - Monitoring Student Progress
- **Amplify Science Diagnostics Tools**
 - Strategies for collecting/analyzing student work & assessment data
 - Resources for tailoring instruction
- **Amplify Science Embedded Supports**
 - Multimodal Instruction
 - Discourse routines
 - Differentiation/Meeting the needs of diverse learners
- **Closing**
 - Reflection/Survey

Multimodal Instruction



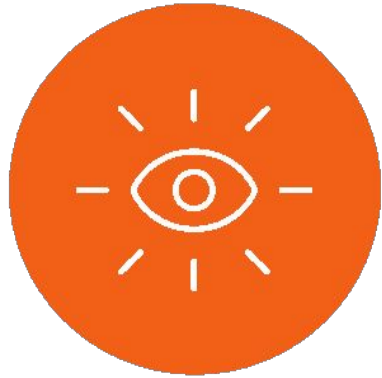
Multimodal, phenomenon-based learning

In each Amplify Science unit, students embody the role of a scientist or engineer to **figure out** phenomena.

Through problem based deep dives, they gather evidence from multiple sources, using multiple modalities.



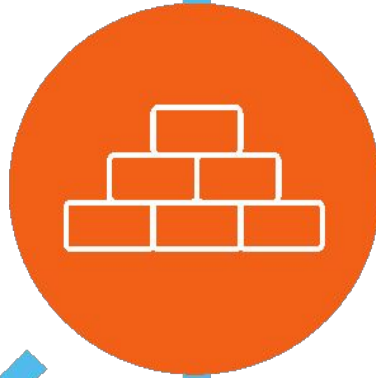
Amplify Science approach



Introduce a phenomenon
and a related problem



Collect evidence from
multiple sources



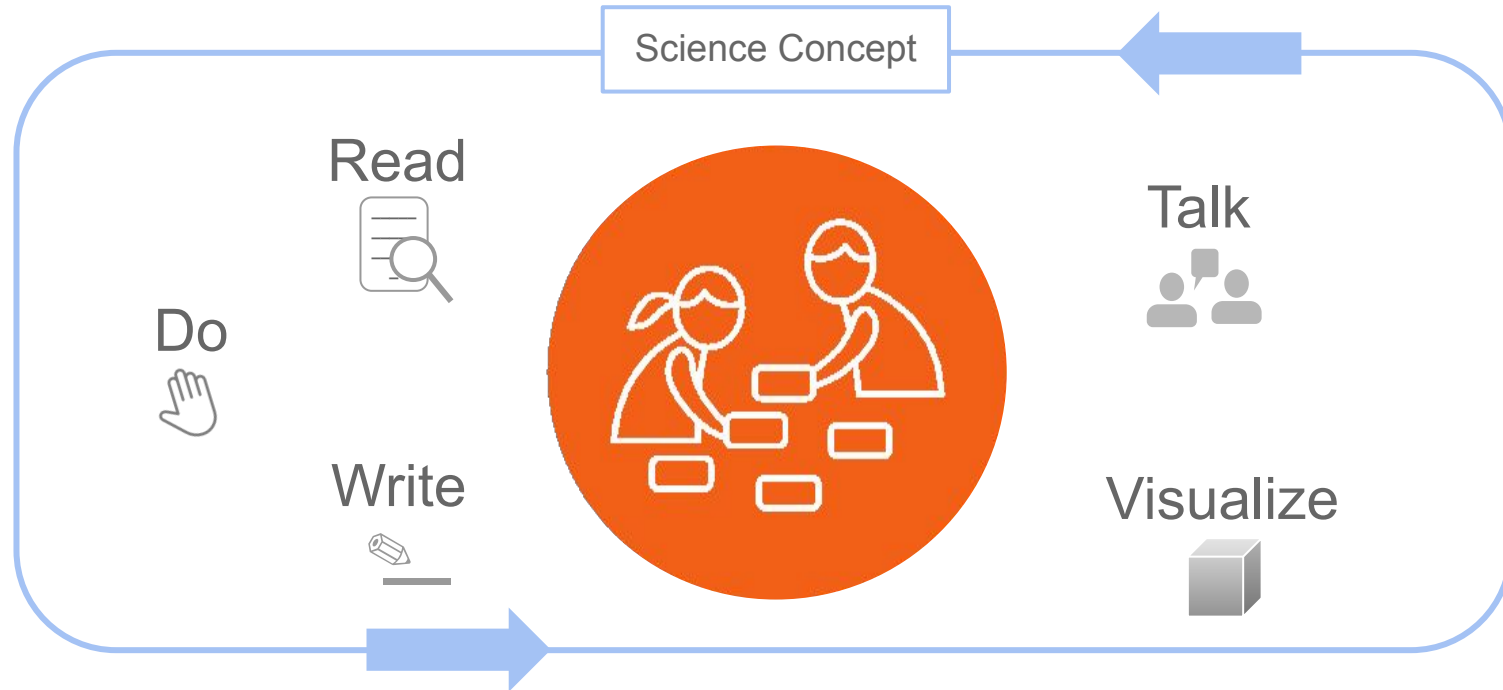
Build increasingly
complex explanations



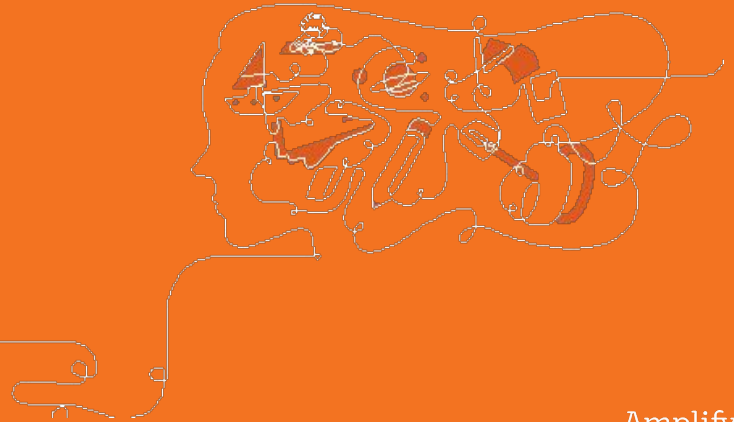
Apply knowledge
to a different context

Multimodal learning

Gathering evidence from different sources



Discourse Routines



Amplify Science discourse routines

- Oral Composition and/or Drawings as teacher captures words (K-1)
- Explanation Language Frames
- Shared Listening
- Partner Reading
- Thought Swap
- Think-Pair-Share
- Word Relationships
- Questioning Strategies [K-8]
 - Do you agree/disagree?





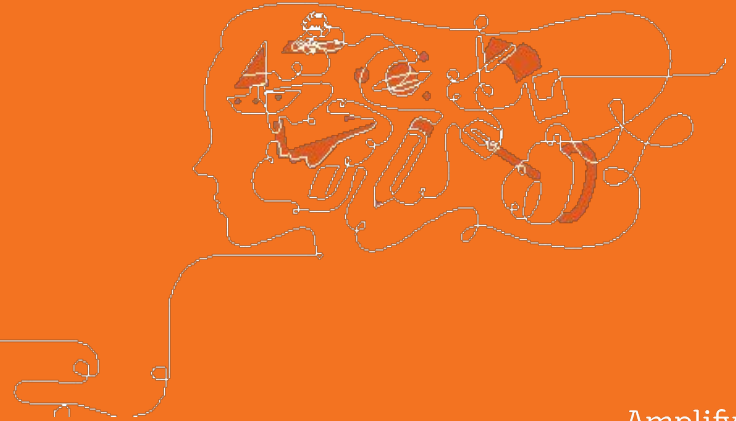
| | Kindergarten - Grade 1 | Grades 2-5 |
|---------------------------|--|--|
| Discourse routines | <p>Students engage in informal partner, small group, and full class talk as well as with Shared Listening, a structured discourse routine.</p> <p>To work towards answering each Chapter question, students first compose responses orally with a Language Frame activity using sentence frames written on sentence strips, completed with cards. They use this practiced sentence structure to write explanations together as a class (Shared Writing) or in their investigation notebooks.</p> | <p>Students engage in informal partner, small group, and full class talk as well as with a variety of structured discourse routines. Each unit includes 2-3 different routines such as:</p> <ul style="list-style-type: none">• Shared listening• Think-pair-share• Think-draw (or write) -pair-share• Thought swap• Concept mapping• Word relationships• Building on ideas• Evidence circles |

Additional support considerations

Modifying the instructional suggestions for my students

- Additional practice time
- Strategic grouping
- Additional resources (multilingual glossary, word banks, other environmental print)
- Increased support for gradual release of responsibility
- Alternative response options

Differentiation



Differentiation Briefs

- Embedded supports for diverse learners
- Potential challenges in this lesson
- Specific differentiation strategies for English learners
- Specific differentiation strategies for students who need more support
- Specific differentiation strategies for students who need more challenge

The image shows a screenshot of a digital interface for lesson planning. At the top, there is a light green header labeled "Lesson Brief". Below this is a vertical navigation menu with several items, each followed by a downward-pointing chevron icon: "Overview", "Materials & Preparation", "Differentiation", "Standards", "Vocabulary", and "Unplugged?". A prominent orange arrow points from the right towards the "Differentiation" item, highlighting it. At the bottom of the interface is a horizontal navigation bar with four tabs: "Step-by-step", "Teacher Support", "Possible Responses", and "My Notes". The "Teacher Support" tab is currently selected, indicated by a purple underline.

Differentiation briefs

Categories of differentiation briefs

- Embedded supports for diverse learners
- Potential challenges in this lesson
- Specific differentiation strategies for English learners
- Specific differentiation strategies for students who need more support
- Specific differentiation strategies for students who need more challenge

Lesson 1.2 Specific Differentiation

Embedded Supports for Diverse Learners

Partner Reading. Reading with a partner provides opportunities for students to assist each other with reading and understanding complex text. Partner Reading encourages discussion of the text and allows students to share ideas with each other, notice illustrations and text features, and interact with the book.

Accessible examples. Activity 1 introduces students to the difference between observations and making inferences through a simple prompt. Students observe a photo of a broken eggshell in a bird nest and are asked to state what they can directly see (their observations) versus what they think happened (their inferences). This task requires very little scientific background knowledge and is meant to be accessible to all students. Using a familiar example and referring back to it often will help students engage in the more complex inferencing tasks later in the unit.

Explicit instruction about making inferences. This lesson focuses on making inferences through contrasting observations with inferences. Students are introduced to the practice of making inferences through a familiar example in Activity 1, through reading about how one scientist makes inferences in *Clues from the Past* in Activities 2 and 3, and they practice distinguishing between observations and inferences as they sort statements about a fossil in Activity 4. Throughout the lesson, you will use modeling and guided instruction to help students understand what observations and inferences are and how to go about making them. Students will make observations and inferences frequently throughout this unit as they read and investigate.

Potential Challenges in This Lesson

Reading-centered. Reading informational texts can present challenges for many students. As the unit progresses, students will become more familiar with the content and reading the texts will get easier, but it can be daunting at first, although *Clues from the Past* is written to be accessible to fourth-grade students, it does contain science vocabulary that students may be unfamiliar with at this point in the unit. Consider if any of your students would benefit from extra support during this reading-centered lesson.

Complex cognitive activities. In this lesson, students are introduced to making inferences, which is an important but challenging cognitive process. It may be challenging for some students to draw inferences based on observations, especially since the words represent concepts that may be unfamiliar. Students will have many other opportunities to read, write, hear, and say these words throughout the unit, but you might want to consider spending extra time discussing these new words if you think this will be a challenge for your students.

Specific Differentiation Strategies for English Learners

Bilingual Spanish glossary. Having access to translations and definitions of new science terms in Spanish is helpful for English learners for whom Spanish is their primary language. Have students turn to pages 86–87, Glossary, in the *Earth's Features* Investigation Notebook to see Spanish translations and definitions. Encourage students to refer to this glossary as needed throughout the unit.

Increase wait time. English learners benefit from increased time to process oral questions. In addition to considering the content of a question, English learners can use a few extra seconds to make sense of unfamiliar words or phrases and/or to mentally translate questions into their primary languages. Increasing your wait time up to 10 seconds before calling on students will likely increase the participation of English learners in class discussions.

Vocabulary support. *Clues from the Past* may be especially challenging for English learners because of the number of science vocabulary words introduced in the text. You may want to preview the text with students, pointing out strategies to use when they encounter unknown words. You can point out that some words are defined in the sentence after they appear in bold, as in the word *inferences* on page 4 and *fossils* on page 5. Also turn students attention to the glossary and invite them to use this when they encounter words in bold print. Students will continue to be exposed to and have opportunity to practice these words throughout the unit, which will help them develop flexible word knowledge.

Cognates. Many of the academic words that students will be learning over the course of this lesson and unit are Spanish cognates. Cognates are words in two or more different languages that sound and/or look the same or very nearly the same, and that have similar or identical meanings. You may decide to support students by keeping a running list on chart paper of cognates that students encounter in this unit, or by encouraging students to keep their own lists that they can refer to as needed. Cognates are especially rich linguistic resources to exploit for academic English language development and for biliteracy development.

Specific Differentiation Strategies for Students Who Need More Support

Strategic partnering. Thinking in advance about reading partners can help ensure that all students are successful during reading. You may want to pair a reader who might benefit from more support with a partner who is a slightly more fluent reader. You may also want to provide partners with more time to read.

Anticipation Guide. For each book, we provide an optional Anticipation Guide in the Investigation Notebook. Anticipation Guides can help support students by activating prior knowledge before reading, promoting engaged reading, and encouraging students to monitor their comprehension. If you choose to use this optional activity, have students turn to page 4, Getting Ready to Read: *Clues from the Past* in the Investigation Notebook. To use this activity, explain that students should work with a partner to decide if they agree or disagree with each statement. After reading, ask partners to revisit the statements and discuss whether they want to change any responses based on their reading. Encourage students to refer to the text as they discuss.

Specific Differentiation Strategies for Students Who Need More Challenge

Reading Reflection. A Reading Reflection activity for each book is included in the Investigation Notebook. These are optional written activities designed to reinforce concepts in the books and provide prompts to encourage further thinking about the text. These activities are designed for early finishers to use during Partner Reading and can also be used in a variety of other ways, such as to reinforce concepts on a second read of the book or as homework. The Reading Reflection for this book (on pages 6–7, Reading Reflection: *Clues from the Past*, in the Investigation Notebook) asks students to make observations and inferences about images of fossils in the book.

Embedded instructional design

- Modeling Active Reading/ Active Reading
- Anticipation Guides
- Science/ Everyday Word Chart
- Word Relationships Activities
- Graphic Organizers
- Reflective writing with language frames/ sentence starters
- Practice Tools
- Physical and digital models

Additional supports

- Cognates
- Multilingual Glossary
- Word Banks
- Multiple-Meaning Words
- Extended Modeling
- Additional Visual Representations
- Optional Graphic Organizers
- Response Option

English-Arabic Glossary (continued)
sediment: small pieces of rock, such as silt or sand
 رسامية: أجزاء صغيرة من الصخر مثل الطمي أو الرمل

English-Arabic Glossary (continued)
fossil: a clue about life from the past that is preserved in rock
 أحفور: دليل عن حياة من الماضي تم حفظه في الصلابة من الأرض

English-Arbic Glossary
argument: the use of evidence to say why one idea is the best
 مجادلة: الاستعانة بدليل للقول بأن فكرة ما هي الأفضل

cement: to stick together in the process of forming rock
 السمننة: الالتصاق سوياً في عملية تكوين الصخور

claim: a proposed answer to a question
 حجة: إجابة مقترحة عن سؤال ما

compact: to press together
 انضغاط: ضغط الجسيمات سوياً

data: observations or measurements recorded in an investigation
 بيانات: ملاحظات أو قياسات مسجلة في دراسة ما

environment: all the living and nonliving things in an area
 بيئة: كل الكائنات الحية والأشياء الجامدة الموجودة في منطقة ما

erosion: when rock, soil, or sand is worn down and moved from one place to another by water, wind, or ice
 التجريف: عندما تنهار الصخور أو التربة أو الزملاز وتنقل من مكان إلى آخر بواسطة الماء أو الرياح أو الثلج

evidence: information that supports an answer to a question
 دليل: معلومات تدعم إجابة عن سؤال ما

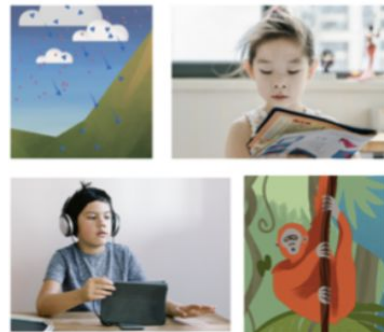
English-Arabic Glossary (continued)
sediment that
 صخر رسوبي: نوع من ببعضها البعض مع مر ثابت في الوضع

Earth's Features—English-Arabic Glossary
 © 2018 The Regents of the University of California. All rights reserved. Permission is granted to photocopy this glossary for classroom use.

1

Resources for Diverse Learners

- Optional investigation notebook pages
- Digital copy of vocabulary words
- Access to lesson level powerpoints (editable)
- Remote learning access for students (via Program Hub)
 - Student readers (English/Spanish)
 - Modeling tools/Sims/Practice tools
 - Videos with calls to action (English/Spanish)
 - Student slides, packets, and sheets (editable)

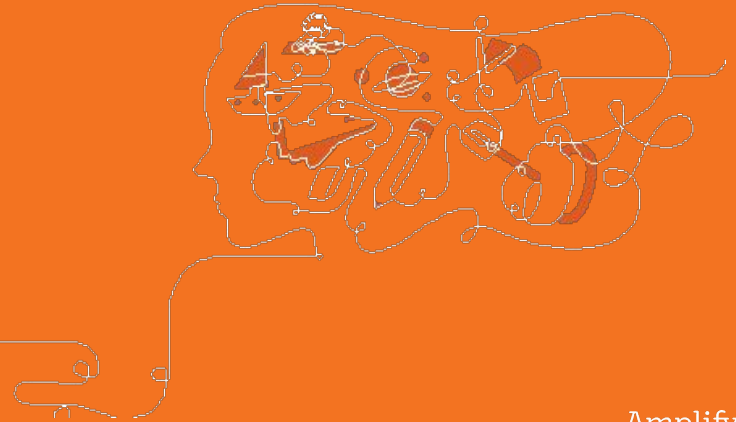


Reflect and Share



What is an example of an embedded differentiation strategy you want to use in your classroom to support students?

Meeting the Needs of Diverse Learners



Who are our Diverse Learners?

“Diverse learning is not based on race or dependent on a deficit model. Students who are considered gifted are also diverse learners. All students are diverse and unique, in their own right. Let’s agree that diverse learning recognizes that all students have unique learning needs and we educators must be prepared to provide multiple entry points for all learners to access the rigor of the goals and standards.”

Anonymous Educator

Universal Design for Learning

Universal Design for Learning (UDL) is a **research-based framework** for improving student learning experiences and outcomes by **focusing on careful instructional planning to meet the varied needs of students**. UDL is **NOT a special-education initiative**. Through the UDL framework, the **needs of ALL learners are considered** and planned for at the point of first teaching, thereby **reducing the need to reteach concepts**.

Universal Design for Learning Guidelines



Turn and talk: Where have you noticed evidence of these principles in the Amplify curriculum?

Culturally and linguistically responsive teaching

Culturally and linguistically responsive teaching (CLRT) principles **emphasize validating and valuing students' cultural and linguistic heritage and creating positive and nurturing learning environments** so that learning is more effective.

Differentiation Strategies

1

☰

Hello Youse Garcia
t.nycmiddle@tryamplify.net

Log Out

Go To My Account ⚙️

Thermal Energy Sim

Traits and Reproductio...

Vision and Light Sim

Weather Patterns Sim

Additional Resources

Benchmark Assessments

NYC Resources

Science Program Guide

Help

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2

3

AmplifyScience

Amplify Science

Welcome

Program developers

Designed for the NGSS

Program components

Scope and Sequence

Phenomena, standards, and progressions

Assessments

Science and literacy

Access and equity

Resources

Access and equity

Universal Design for Learning

Culturally and linguistically responsive

Differentiation strategies

4

- English learners

- Students with disabilities

- Standard English learners

- Girls and young women

- Advanced learners and gifted learners

- Students living in poverty, foster children and youth, and migrant students

Lesson-level differentiation

What resources can you use to meet the needs of diverse learners?

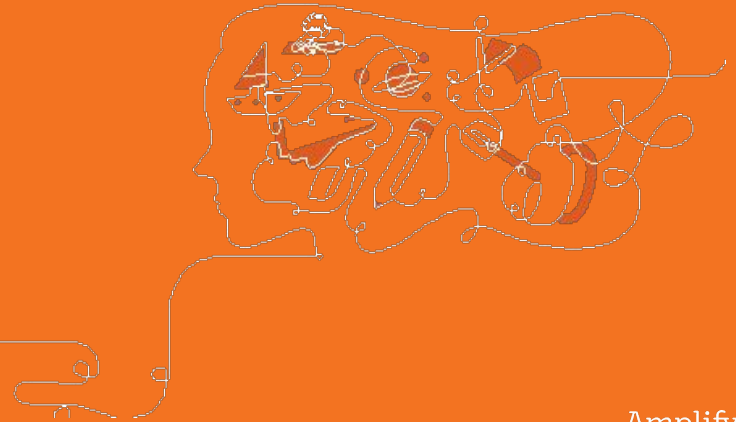
A Differentiation

C Do, Talk, Read,
Write, Visualize

B Universal Design
for Learning

D All of the Above

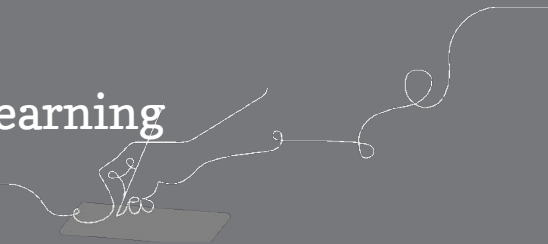
Closing/ Reflection



Revisiting Objectives:

By the end of this 1-hour workshop, you will be able to...

- Explore the Amplify Science Formative Assessment system.
- Explore how to use Embedded Formative Assessments to gain access to credible, actionable, and timely diagnostic information about students progress toward learning the unit goals.
- Learn strategies for analyzing student's work & assessment data, examine resources to help plan for tailoring instruction.
- Explore supports for differentiation to meet the diverse learning needs in their classroom



New York City Resources Site

<https://amplify.com/resources-page-for-nyc-k-5/>



Amplify.

Amplify Science Resources for NYC (K-5)

Welcome! This site contains supporting resources designed for the New York City Department of Education Amplify Science adoption for grades K-5.

UPDATE: Summer 2020

Introduction

Getting started resources

Planning and implementation resources

Admin resources

Parent resources

COVID-19 Remote learning resources 2020

Professional learning resources

Questions

UPDATE: Summer 2020

Account Access: It's an exciting time for Amplify Science! We have access to the many updates and upgrades in our curriculum until late August/early September when we will update our rosters from STARS.

Any schools or teachers new to Amplify Science in 20/21 are encouraged to contact our Help Desk (1-800-823-1969) for access to your temporary login for summer planning.

Upcoming PL Webinars: Join us for our Summer 2020 Professional Learning opportunities in July for NEW teachers and administrators and August for RETURNING teachers and administrators. Links to register coming soon!

Site Resources

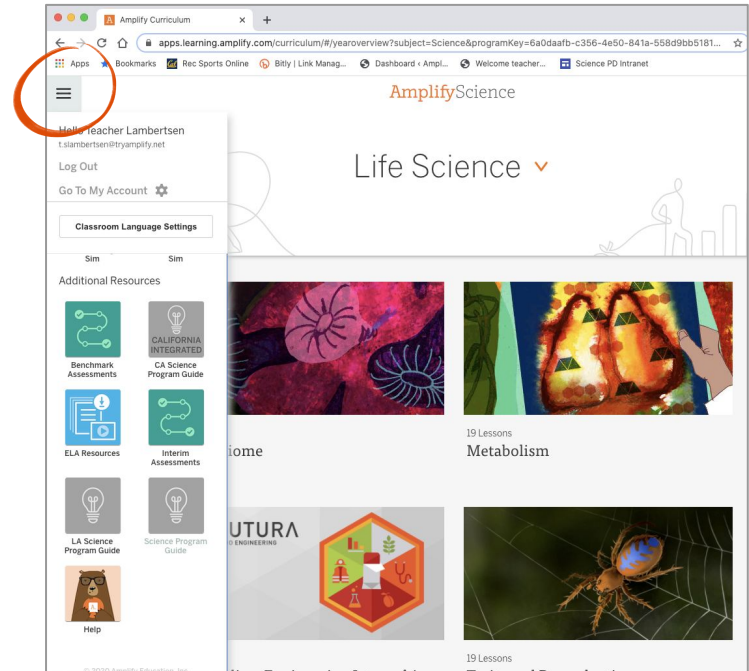
- Login information
- Pacing guides
- Getting started guide
- NYC Companion Lessons
- **Resources from PD sessions**
- And much more!

Amplify Science Program Hub

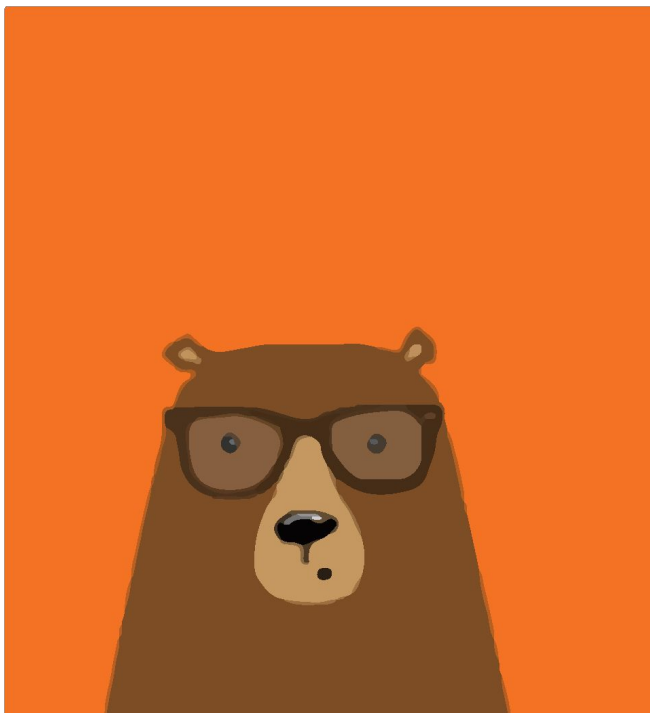
A new hub for Amplify Science resources

- **Videos and resources to prepare for instruction**
- **Amplify@Home resources**
- **Self study resource and much more!**

***Check back often to stay update to date with Amplify Science ***



Additional Amplify resources



Program Guide

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

<https://my.amplify.com/programguide/content/national/welcome/science/>

Amplify Help

Find lots of advice and answers from the Amplify team.

my.amplify.com/help

Additional Amplify Support

Customer Care

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-7PM EST.



scihelp@amplify.com



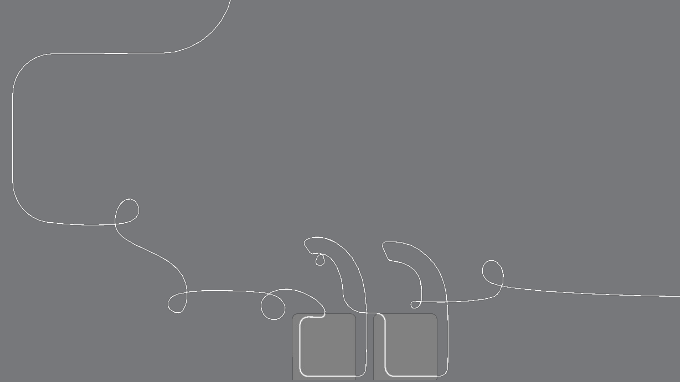
800-823-1969



Amplify Chat

When contacting the customer care 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.



Final Questions?