

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.



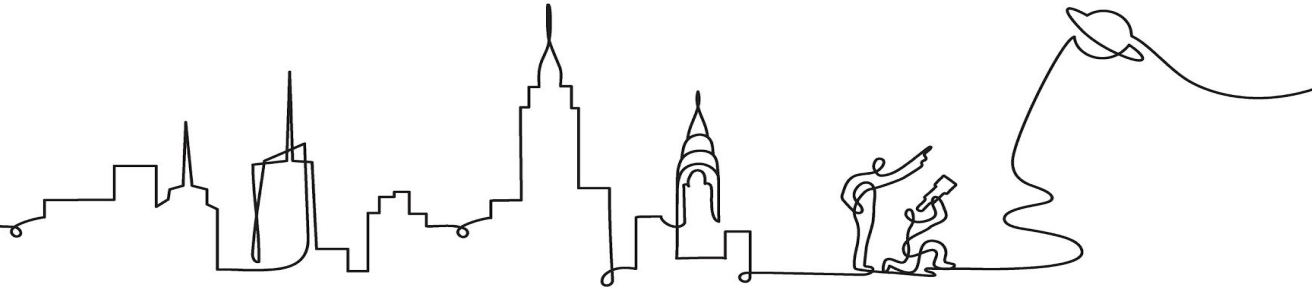
Amplify Science

New York City

Analyzing Student Assessment Data Grade 2- Properties of Materials

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

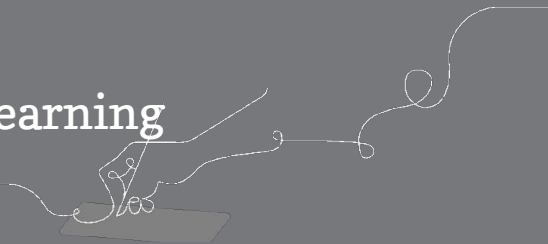
Overview
Materials & Preparation
Differentiation
Español rds

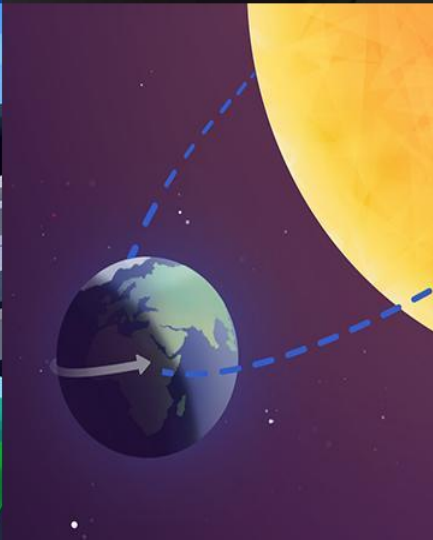
Digital Resources
All Projections
Completed Scientific Argumentation Wall Diagram
Video: Meet a Paleontologist
The Ancient Mesosaurus

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





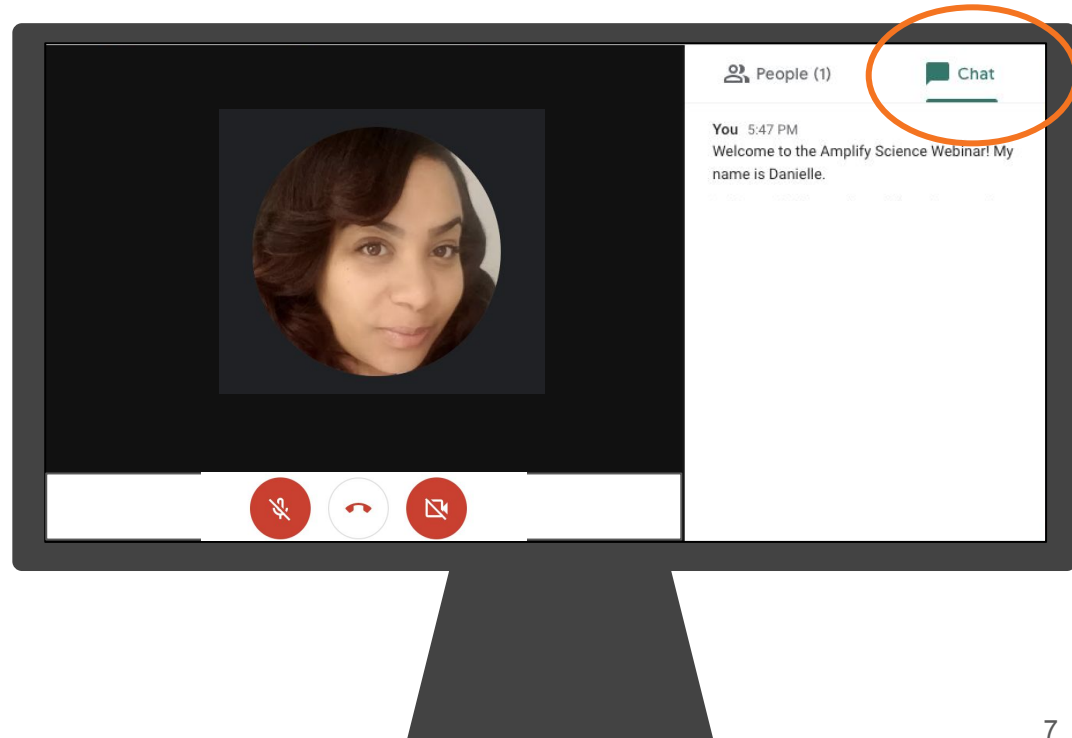
Plan for the day

- **Framing the day**
 - 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

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.

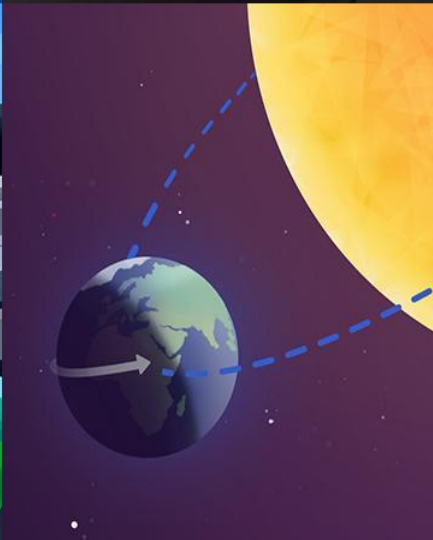
Idea

Idea

Idea

Idea

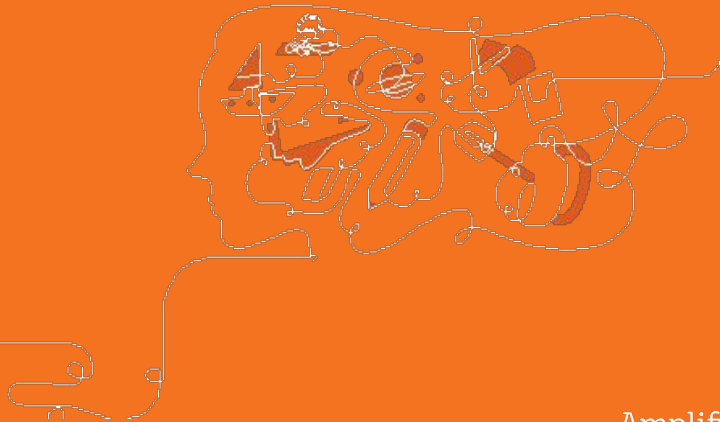
Idea



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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

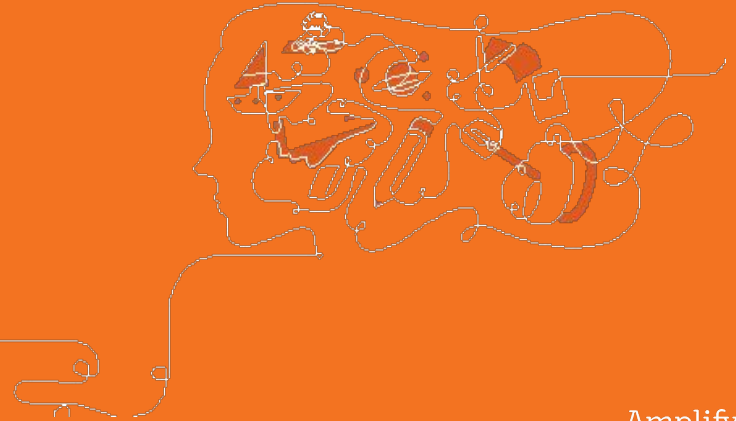
Assessment System

- 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

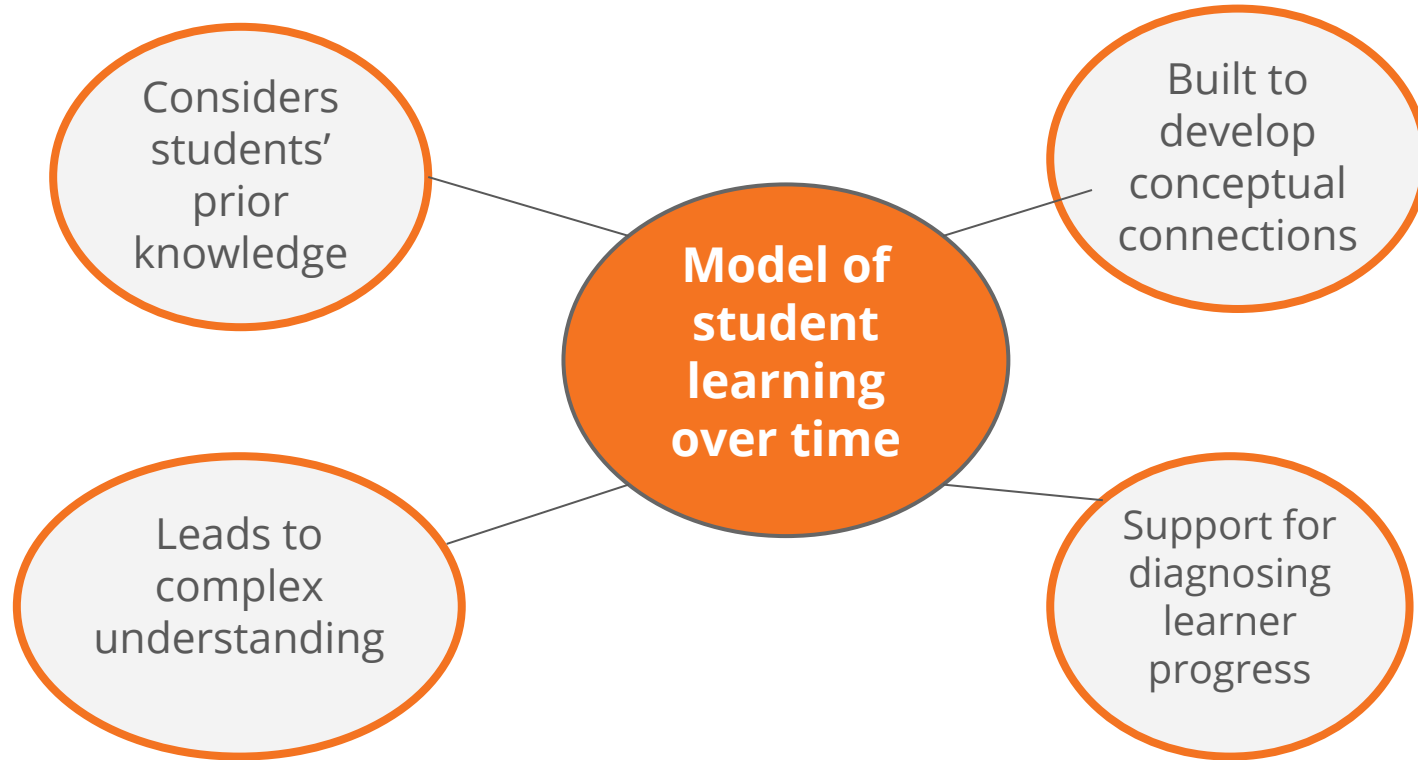


What is Formative Assessment?

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.

Plant and Animal Relationships Progress Build

Deep, causal understanding



Prior knowledge

To get space, some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

In order to get enough water and sunlight, seeds need space to get sunlight on their leaves and to spread their roots to get water.

Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

What new ideas are added at each level?

Pre and End of Unit Assessments

Deep, causal understanding



Prior knowledge

To get space, some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

In order to get enough water and sunlight, seeds need space to get sunlight on their leaves and to spread their roots to get water.

Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

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

To get space, some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.



In order to get enough water and sunlight, seeds need space to get sunlight on their leaves and to spread their roots to get water.



Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.



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

④ To get space, some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

④ In order to get enough water and sunlight, seeds need space to get sunlight on their leaves and to spread their roots to get water.

④ Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

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

To get space, some plants depend on animals to disperse their seeds, and some animals depend on these plants for food. 😊

In order to get enough water and sunlight, seeds need space to get sunlight on their leaves and to spread their roots to get water. 😊

Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water. 😊

Portfolio Assessments

Deep, causal understanding



Prior knowledge

To get space, some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

In order to get enough water and sunlight, seeds need space to get sunlight on their leaves and to spread their roots to get water.

Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

Investigation Assessments



Deep, causal understanding



Prior knowledge

To get space, some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

In order to get enough water and sunlight, seeds need space to get sunlight on their leaves and to spread their roots to get water.

Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

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



Deep, causal understanding



Prior knowledge



To get space, some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.



In order to get enough water and sunlight, seeds need space to get sunlight on their leaves and to spread their roots to get water.



Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.



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

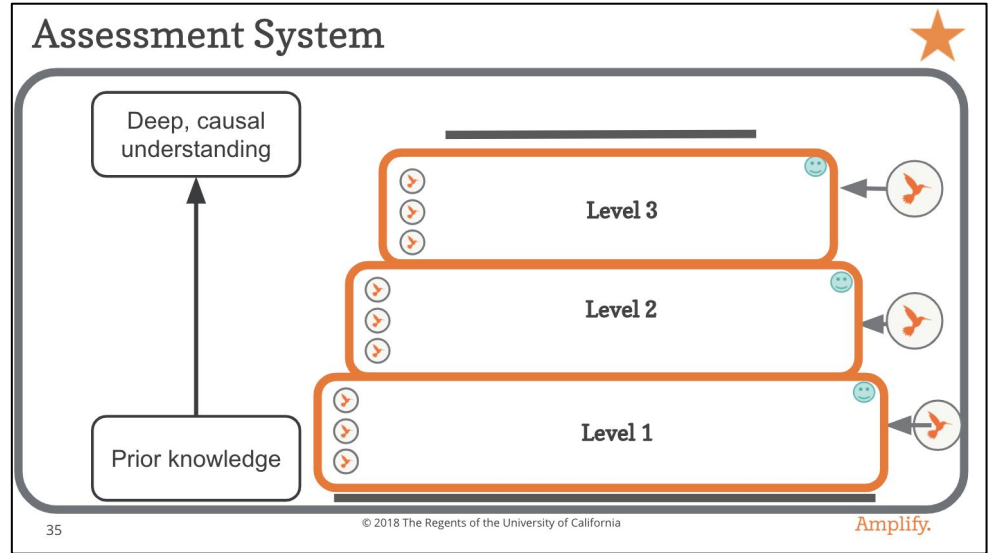
On-the-Fly Assessment 1: Synthesizing Information

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?

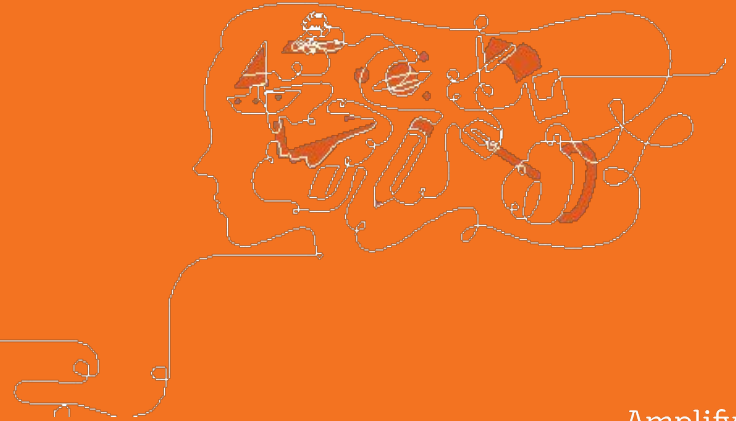
Now what? If students are having trouble getting started with synthesizing, or if they are connecting the reading to unrelated information, provide some additional models. You may wish to provide examples that combine information from the first section of *Systems* with information from other sources. 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



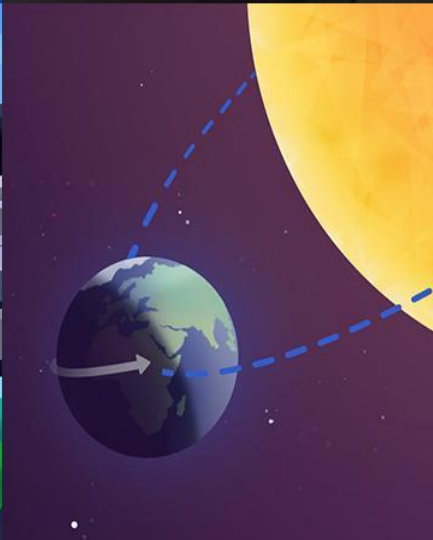
How can you monitor students progress?

- 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 *Properties of Materials* unit is Cause and Effect. In their role as glue engineers, students move through the design process and predict and investigate the effect that the cause of adding a particular substance will have on a glue mixture. They also read about and investigate the effect that the cause of heating or cooling may have on a substance by observing and comparing the properties of the unheated substances with those of the same substance after it is heated and returned to its original temperature. Students return to the ideas of cause and effect again and again across the unit, through a variety of modalities.

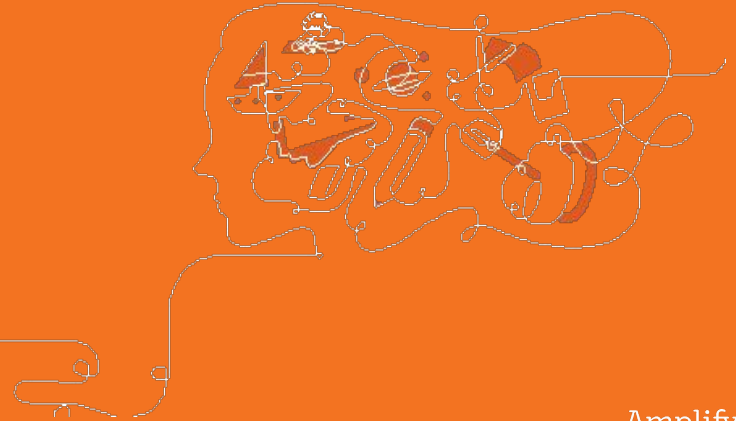
- **Do.** Throughout the unit, students observe and test glue mixtures in order to determine the effect that adding particular ingredients has had—whether the cause of adding the ingredients had the *effect* of giving the glue the desired properties. In addition, students engage in several digital card sorts during which they apply their understanding of cause and effect as it relates to chemical changes and to designing mixtures.
- **Talk.** There are multiple opportunities for students to discuss cause and effect in a whole-class setting and with partners. Students reflect on their glue-making, the digital card sort, and their own everyday experiences at home to identify cause-and-effect relationships.
- **Read.** Students read an informational text about the effect that the cause of heating or cooling a substance (and returning it to its original temperature) can have on the substance. As they read, they make predictions about whether or not the effects are reversible.
- **Write.** During the course of the unit, students write design arguments in which they reason about the effect that the cause of adding particular ingredients will have on a glue mixture.



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- **Closing**
 - Reflection/Survey

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

Properties of Materials: Lesson 2.1 Overview

Lesson Goal:

This lesson introduces the concept that properties of substances may change after the substances are heated or cooled and returned to their original temperature. When a substance is heated or cooled, its properties can change. Some substances change back to the way they were before they were heated or cooled.

Activity 1: Testing Our First Glue

- Students check the predictions they made about the stickiness of their glue mixtures and then test the mixtures' stickiness.

Activity 2: Introducing Can You Change it Back?

- Students are introduced to the book *Can You Change It Back?* and they make predictions before reading it.

Activity 3: Reading: Can You Change it Back?

- Students make predictions as they read *Can You Change It Back?* with a partner and then they complete a notebook activity.

Activity 4: Discussing Key Concepts and Questions

- Students reflect on what happens to substances after they have been heated or cooled and returned to their original temperature.


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: 2.1 Activity 3

<p>Analyzing Student Assessment Data: Refer to the “Look For” section of Lesson 2.1 Act. 3 and refer to your observation notes.</p>		<p>Taking action based on student data: refer to the Now what section of the 2.1 Act. 3 assessment and consider how you might adjust instruction in your classroom.</p>	
<p>Which misconception? </p>	<p>Which students?</p>	<p>When?</p>	<p>How?</p>
<p> <input type="checkbox"/> Key Concept <input checked="" type="checkbox"/> Practice <input checked="" type="checkbox"/> Crosscutting Concept </p> <p>Notes: <i>As students are reading Can You Change It Back?, circulate to listen for their predictions and reactions to each substance. You will want to make sure that students are taking time to make predictions before turning the page. Listen to hear if students are basing their predictions on evidence and prior knowledge. After students have completed a section, check in about what they learned. Are they understanding that heating and cooling causes changes? Do they remember as they read what they are learning about each substance?</i> </p>	<p> <i>Tristian</i> <i>Trent</i> <i>Wanda</i> <i>Zena</i> </p>	<p> <input type="checkbox"/> In the moment <input type="checkbox"/> In upcoming activity <input type="checkbox"/> Outside of lesson </p> <p>Notes:</p>	<p> <input type="checkbox"/> Keep an eye on certain students <input type="checkbox"/> Provide additional instruction <input type="checkbox"/> Revisit an activity </p> <p>Notes:</p>

Model Analysis: 2.1 Activity 3

Analyzing Student Assessment Data: Refer to the “Look For” section of Lesson 2.1 Act. 3 and refer to your observation notes.

Taking action based on student data: refer to the Now what section of the 2.1 Act. 3 assessment and consider how you might adjust instruction in your classroom.

Which misconception?



Which students?

- Key Concept
- Practice
- Crosscutting Concept

Notes:

As students are reading Can You Change It Back?, circulate to listen for their predictions and reactions to each substance. You will want to make sure that students are taking time to make predictions before turning the page. Listen to hear if students are basing their predictions on evidence and prior knowledge. After students have completed a section, check in about what they learned. Are they understanding that heating and cooling causes changes? Do they remember as they read what they are learning about each substance?

*Tristian
Trent
Wanda
Zena*

When?

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

Notes:

If students are not taking the time to make predictions verbally, you may wish to ask them to record their predictions and then, to record whether or not they were confirmed by what they read. If students are not easily grasping the concept that substances can change when they are heated or cooled, you may choose to reread certain sections of the book after the partner read.

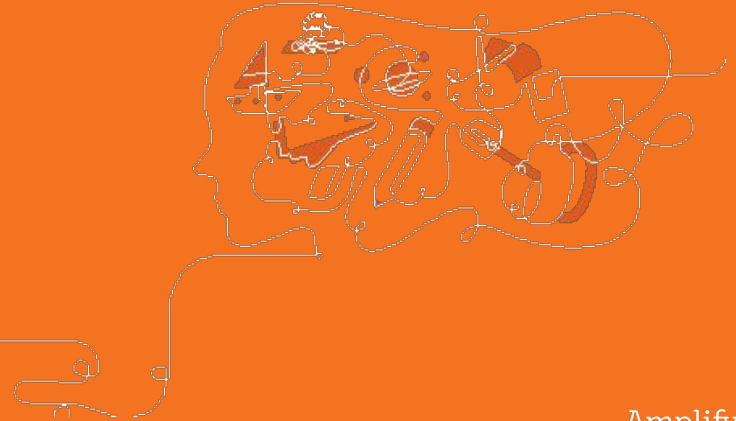
How?

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

Notes:

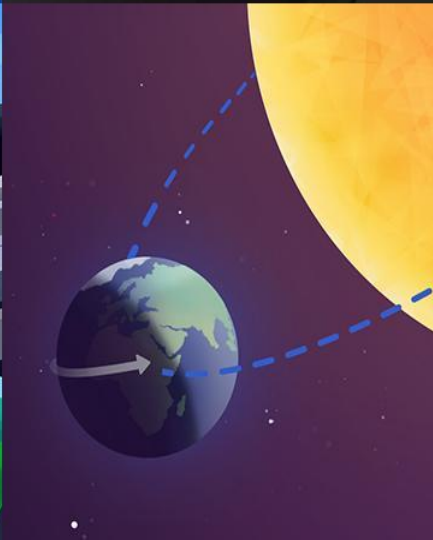
Coach students listed after 2.1 Act 3

Resources for Tailoring Instruction



How do I tailor instruction for my classroom?

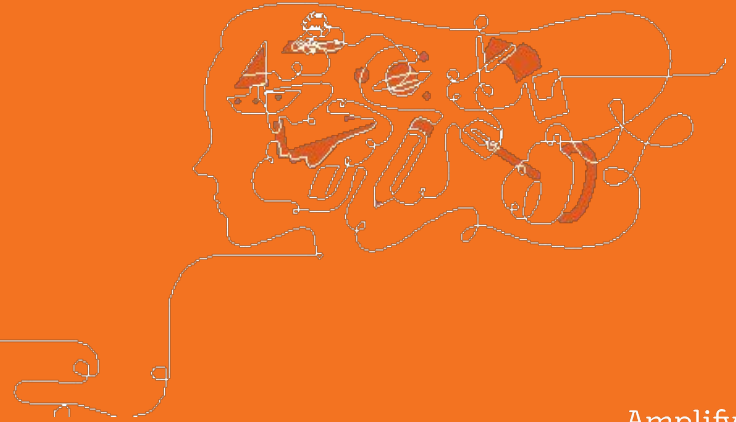
- Group students according to ability level
- Use the “Look For” and “Now what” tools to provide support based on formative assessment data
- Use the differentiation brief within each lesson
- Pull intervention suggestions from the student online component



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 - Reflection/Survey

Multimodal Instruction



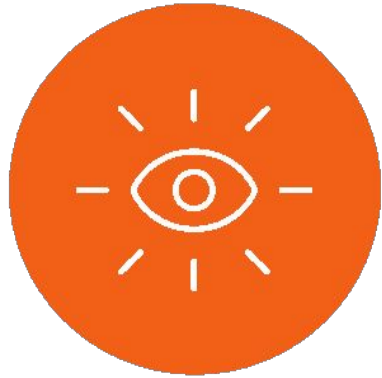
Multimodal, phenomenon-based learning

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.



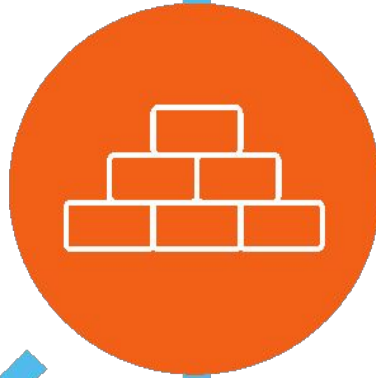
Amplify Science approach



**Introduce a phenomenon
and a related problem**



**Collect evidence from
multiple sources**



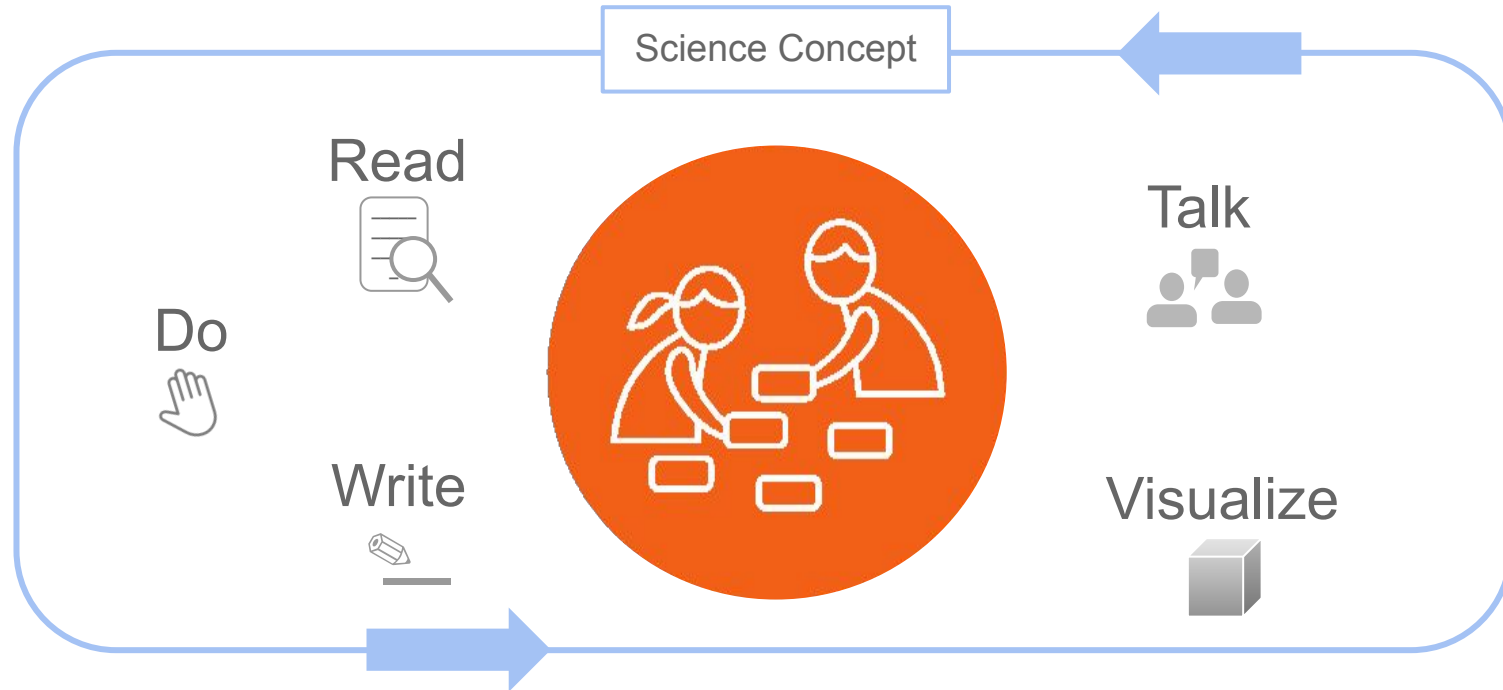
**Build increasingly
complex explanations**



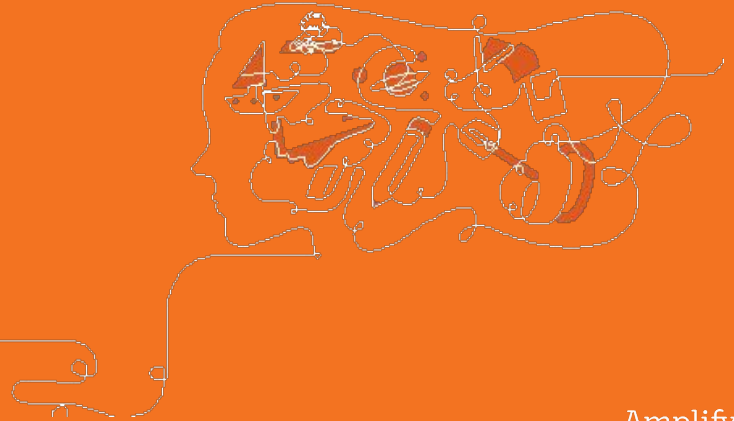
**Apply knowledge
to a different context**

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?





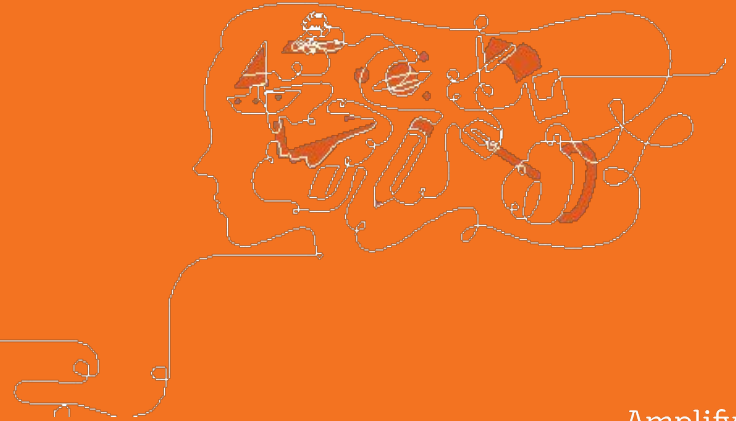
	Kindergarten - Grade 1	Grades 2-5
Discourse routines	<p>Students engage in informal partner, small group, and full class talk as well as with Shared Listening, a structured discourse routine.</p> <p>To work towards answering each Chapter question, students first compose responses orally with a Language 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 2.1 Specific Differentiation

Specific Differentiation Strategies for Students Who Need More Support

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 30, Getting Ready to Read: *Can You Change It Back?*, in the Investigation Notebook. Review the directions and 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.

Strategic partnering. Thinking about reading partners in advance can be useful in supporting struggling readers. You may want to pair a reader who needs more support with a partner who is a slightly more fluent reader. You may also want to provide pairs with more time to read.

Specific Differentiation Strategies for Students Who Need More Challenge

Additional writing opportunity. At the end of the lesson, you can have students select predictions that they recorded in their notebooks and have them write a few sentences that more fully describe the rationale for their prediction. Encourage students to use the following vocabulary in their writing: *freeze, melt, solid, liquid, property, substances*.

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 31–32, Reading Reflection: Can You Change It Back?, in the Investigation Notebook) invites students to describe the properties of substances before and after heating or cooling, and to tell whether or not the substances change back to the way they were before.

Partner Reading. Reading with a partner provides opportunities for students to assist each other with reading—with using the reading strategy modeled by the teacher, with decoding, and with comprehension. Partner Reading encourages discussion of the text during reading, which aids comprehension.

Supportive visuals in the book. The illustrations in the book are designed to clarify the meaning of the text and should support students who struggle with reading comprehension.

Potential Challenges in This Lesson

Reading-centered. Reading science texts may be new for many students, and doing so can be challenging for anyone. Additionally, the strategy of predicting while reading may be unfamiliar to some students. Consider if any of your students would benefit from extra reading instruction or pre-teaching in order to be successful with this lesson's activities.

Specific Differentiation Strategies for English Learners

Multiple meaning words. Words with multiple meanings may present an obstacle for English learners. To help avoid confusion, before reading, explain that some words have more than one meaning. Discuss some examples likely to be familiar such as *can* or *stick*. Then, have pairs work together to complete the optional activity on page 33, Multiple Meaning Words, in the Investigation Notebook.

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 76–77, Glossary, in the *Properties of Materials* Investigation Notebook to see Spanish translations and definitions. Encourage students to refer to this glossary as needed throughout the unit.

Additional discussions of prior knowledge. Seeing pictures of the same substance looking quite different depending on whether it has been heated or cooled may be confusing for students whose background knowledge does not include examples of this natural transformation of substances. Inviting a discussion about substances that are commonly heated and cooled prior to reading *Can You Change It Back?* may activate prior knowledge for students that they can then draw from. Additionally, it will provide the teacher with a better understanding of what background knowledge students have of the phenomenon.

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)

English-Arabic Glossary	
design: to try to make something new that people want or need	حل: شيء ما يساعد الناس على فعل ما يريدون تصميم: محاولة بناء شيء جديد يريدونه الناس أو يحتاجونه
direction: the way something is facing or moving, such as left, right, toward you, or away from you	اتجاه: المسار الذي يستقبله شيء ما أو يمضي نحوه مثل اليسار أو اليمين أو المضي تحرك أو بعيدًا عنك
distance: how far it is between two things	مسافة: البعد بين شيئين اثنين
exert: to cause a force to act on an object	بذل: يوقع قوة للتأثير على جسم ما
engineer: a person who makes something in order to solve a problem	مهندس: شخص يقوم بشيء ما لحل إحدى المشكلات
force: a push or a pull	قوة: فعل الدفع أو السحب
object: a thing that can be seen or touched	جسم: شيء يمكن رؤيته أو لمسه

Pulls—English-Arabic Glossary
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Pushes and Pulls—English-Arabic Glossary **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)

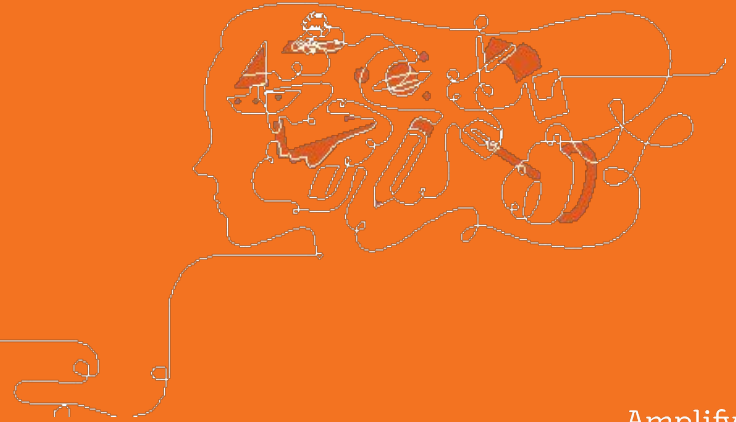


Reflect and Share



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?

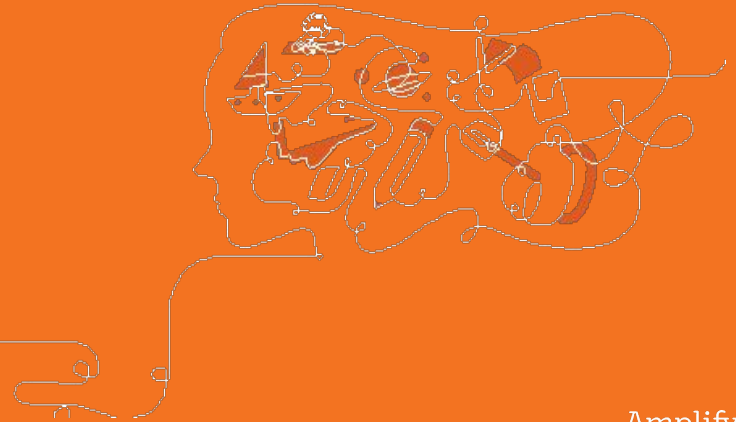
A Differentiation

C Do, Talk, Read,
Write, Visualize

B Universal Design
for Learning

D All of the Above

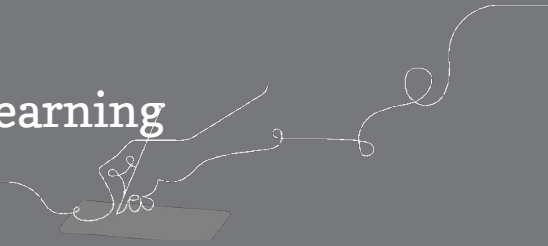
Closing/ Reflection



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

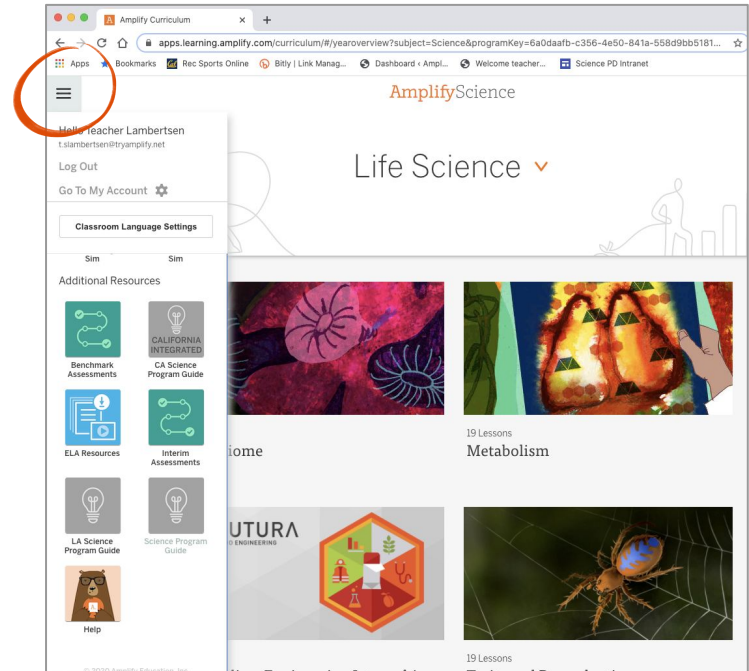
- Login information
- Pacing guides
- Getting started guide
- NYC Companion Lessons
- **Resources from PD sessions**
- And much more!

Amplify Science Program Hub

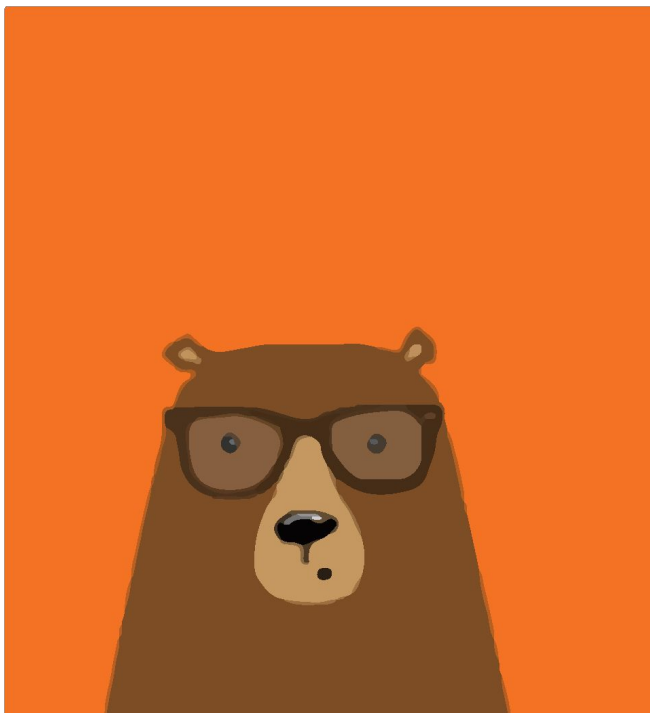
A new hub for Amplify Science resources

- **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



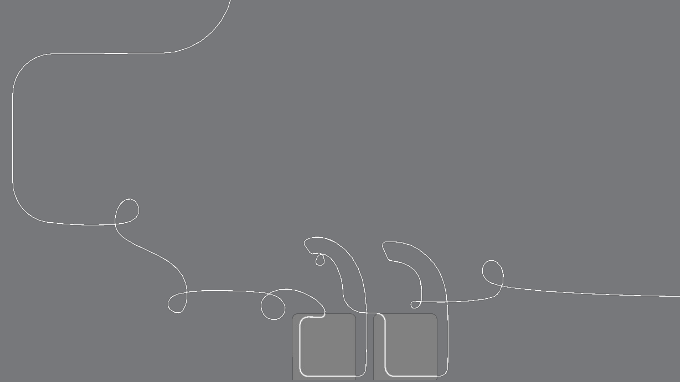
800-823-1969



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?