

# 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 1- Light and Sound

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

The image illustrates a dual-window setup for a webinar. On the left, a window titled "Meet - Etiwanda Grade 7 N" is shown, displaying a Google Meet interface. An orange arrow labeled "Window #1" points to this window. On the right, a window titled "Amplify Curriculum" is shown, displaying the Amplify Science curriculum page for Lesson 1.2: Using Fossils to Understand Earth. An orange arrow labeled "Window #2" points to this window. An inset in the top left shows a mouse cursor clicking the maximize button in the window title bar.

**Window #1:** Google Meet interface showing a meeting link: `meet.google.com/hcs-dxpk-wrm?aut...`

**Window #2:** Amplify Science curriculum page for Lesson 1.2: Using Fossils to Understand Earth. The page includes a lesson brief, materials and preparation, and digital resources.

**Lesson 1.2: Using Fossils to Understand Earth**

**Lesson Brief (4 Activities)**

- 1 WARM-UP Warm-Up
- 2 TEACHER-LED DISCUSSION Introducing Mesos

**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

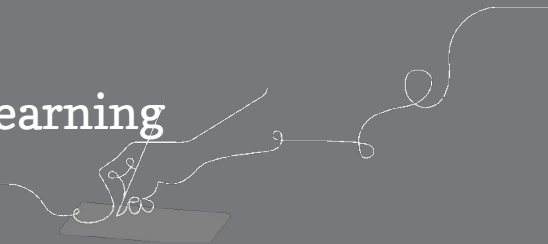
**Digital Resources**

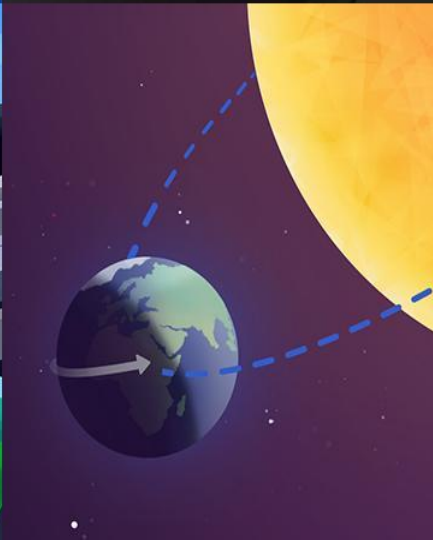
- All Projections
- Completed Scientific Argumentation Wall Diagram
- Video: Meet a Paleontologist
- The Ancient Mesosaurus

# 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





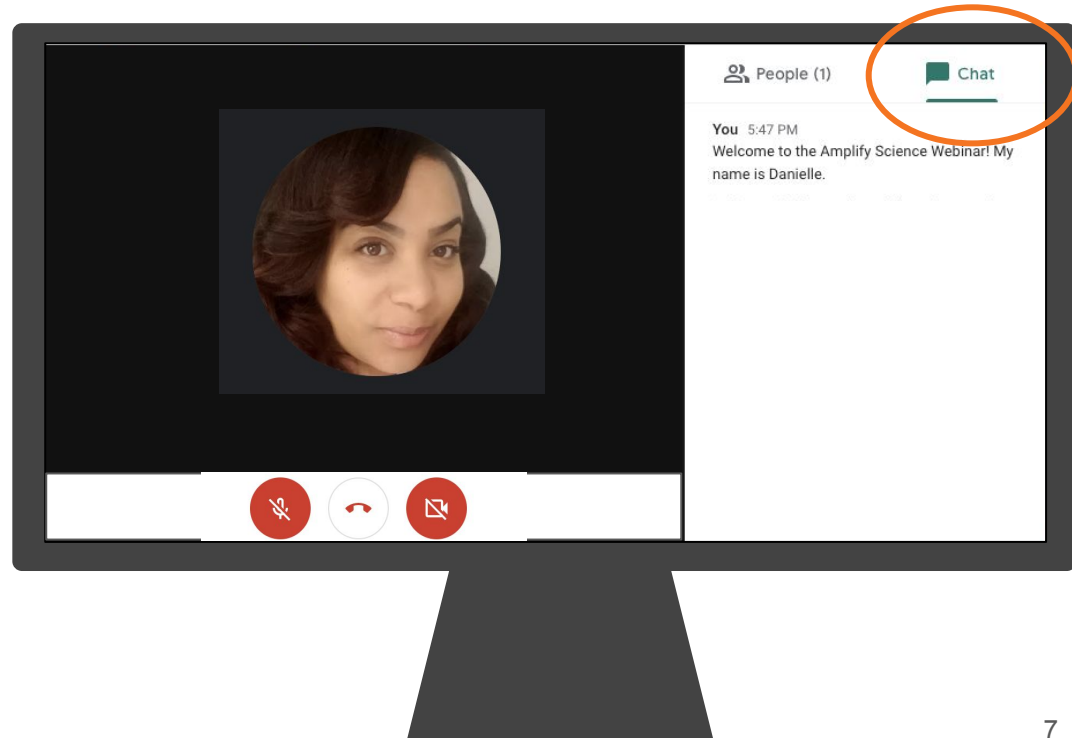
# Plan for the day

- **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

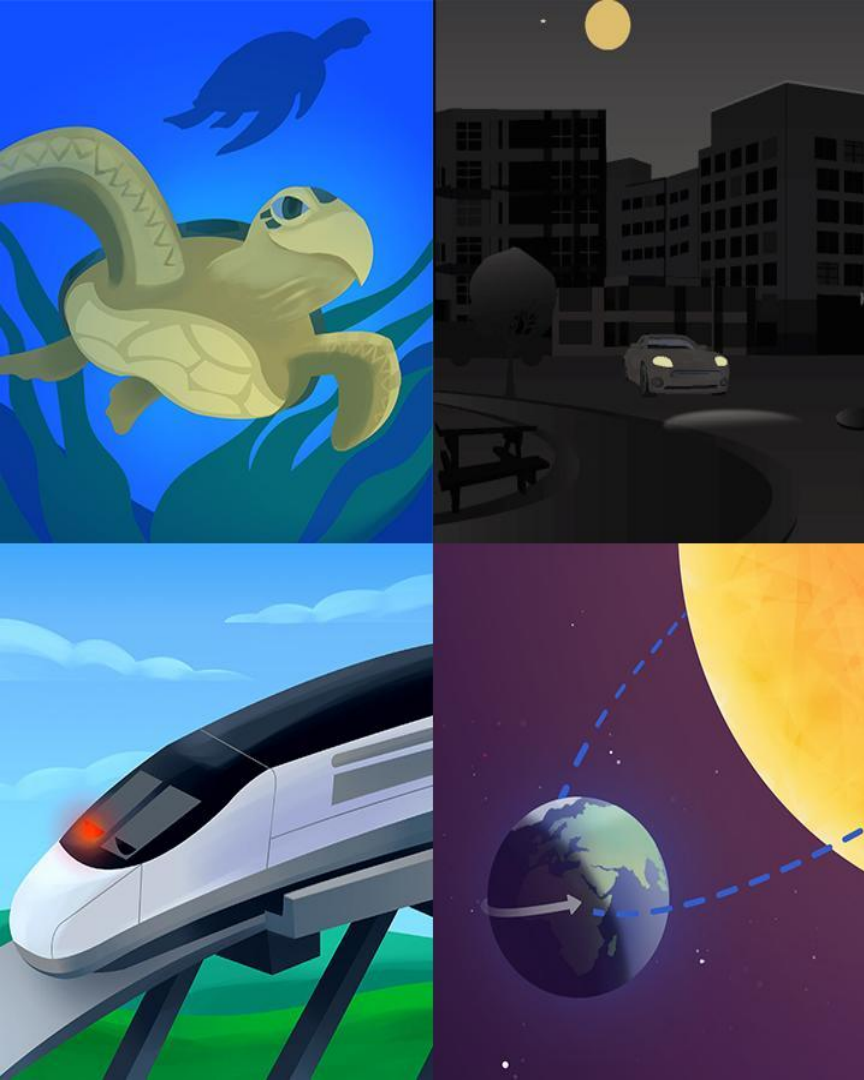
Idea

Idea

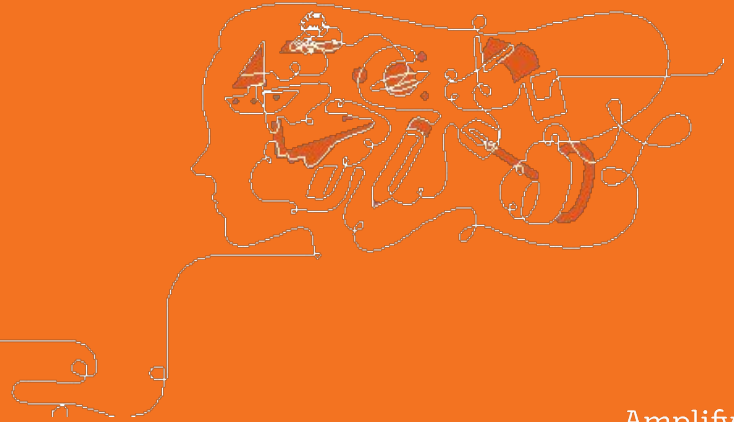


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# Credible, Actionable, Timely



# 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

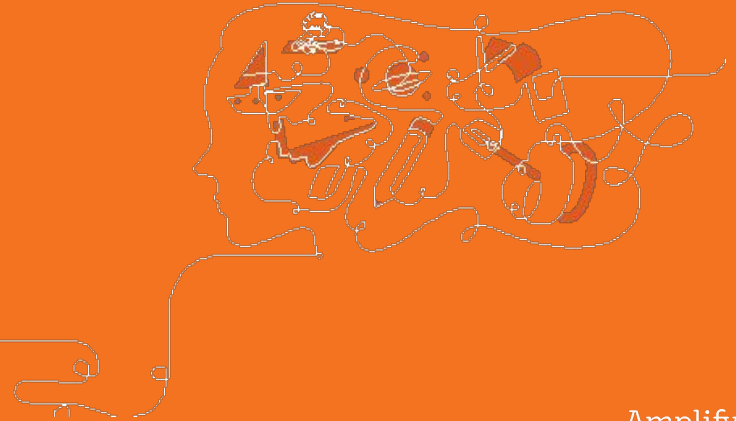
# Assessment System

- 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

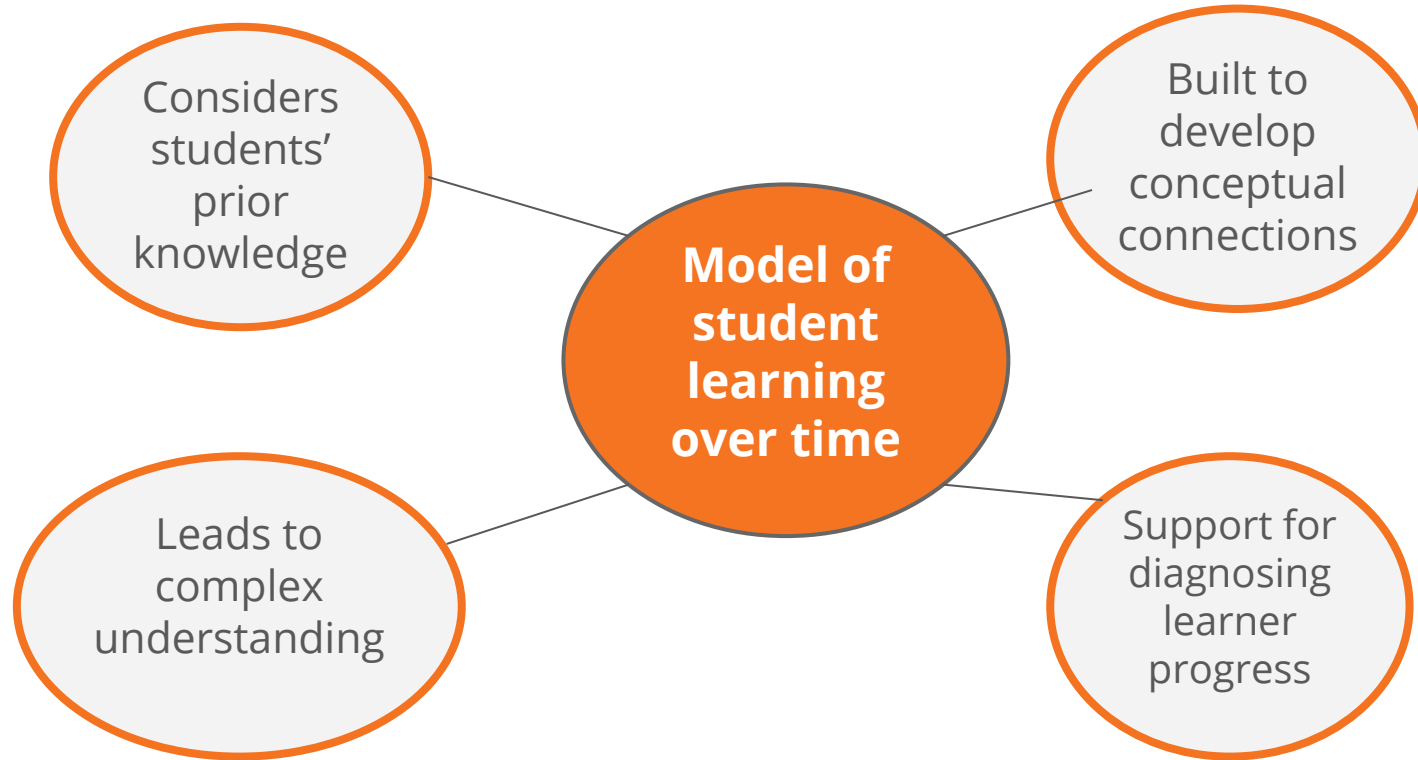


# What is Formative Assessment?

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.

# Light and Sound Progress Build

Deep, causal understanding



Prior knowledge

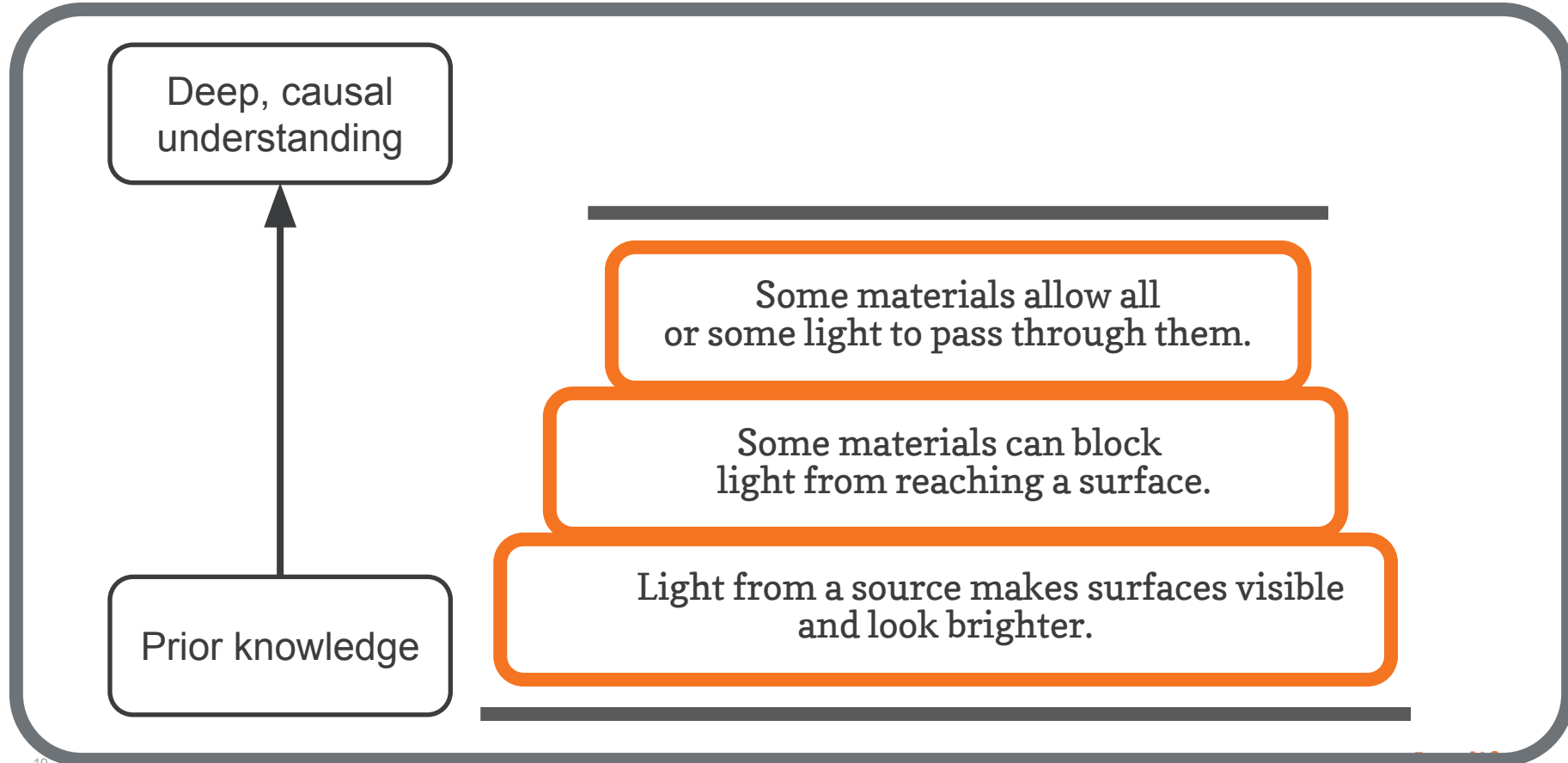
Some materials allow all or some light to pass through them.

Some materials can block light from reaching a surface.

Light from a source makes surfaces visible and look brighter.

*What new ideas are added at each level?*

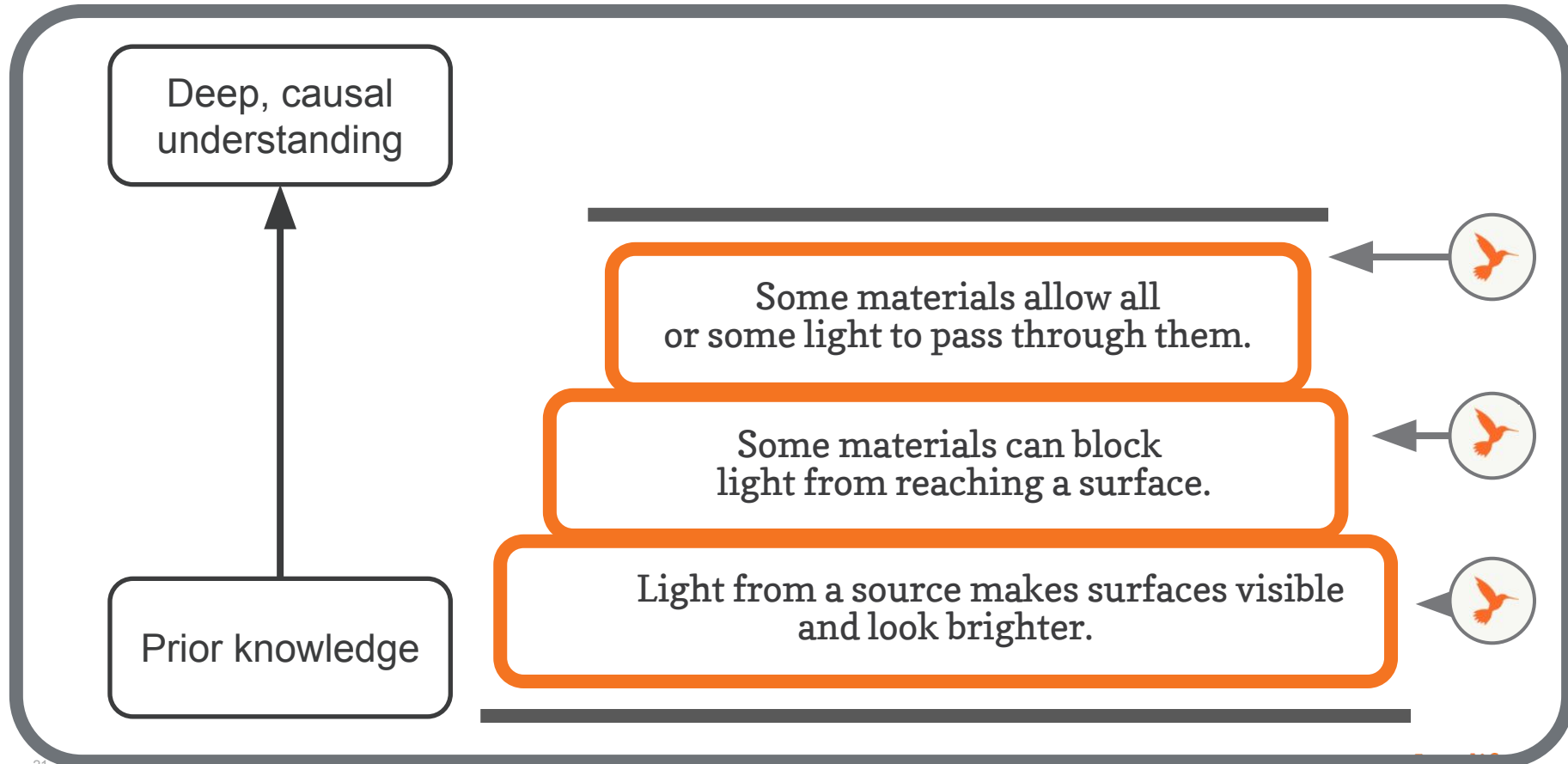
# Pre and End of Unit Assessments



# 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



# 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



Some materials allow all some light to pass through them.



Some materials can block light from reaching a surface.



Light from a source makes surfaces visible and look brighter.

# 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

Some materials allow all  
or some light to pass through them. 😊

Some materials can block  
light from reaching a surface. 😊

Light from a source makes surfaces  
visible and look brighter. 😊

# Portfolio Assessments

Deep, causal  
understanding



Prior knowledge

---

Some materials allow all  
or some light to pass through them.

Some materials can block  
light from reaching a surface.

Light from a source makes surfaces  
visible and look brighter.

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# Investigation Assessments



Deep, causal understanding



Prior knowledge

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Some materials allow all or some light to pass through them.

Some materials can block light from reaching a surface.

Light from a source makes surfaces visible and look brighter.

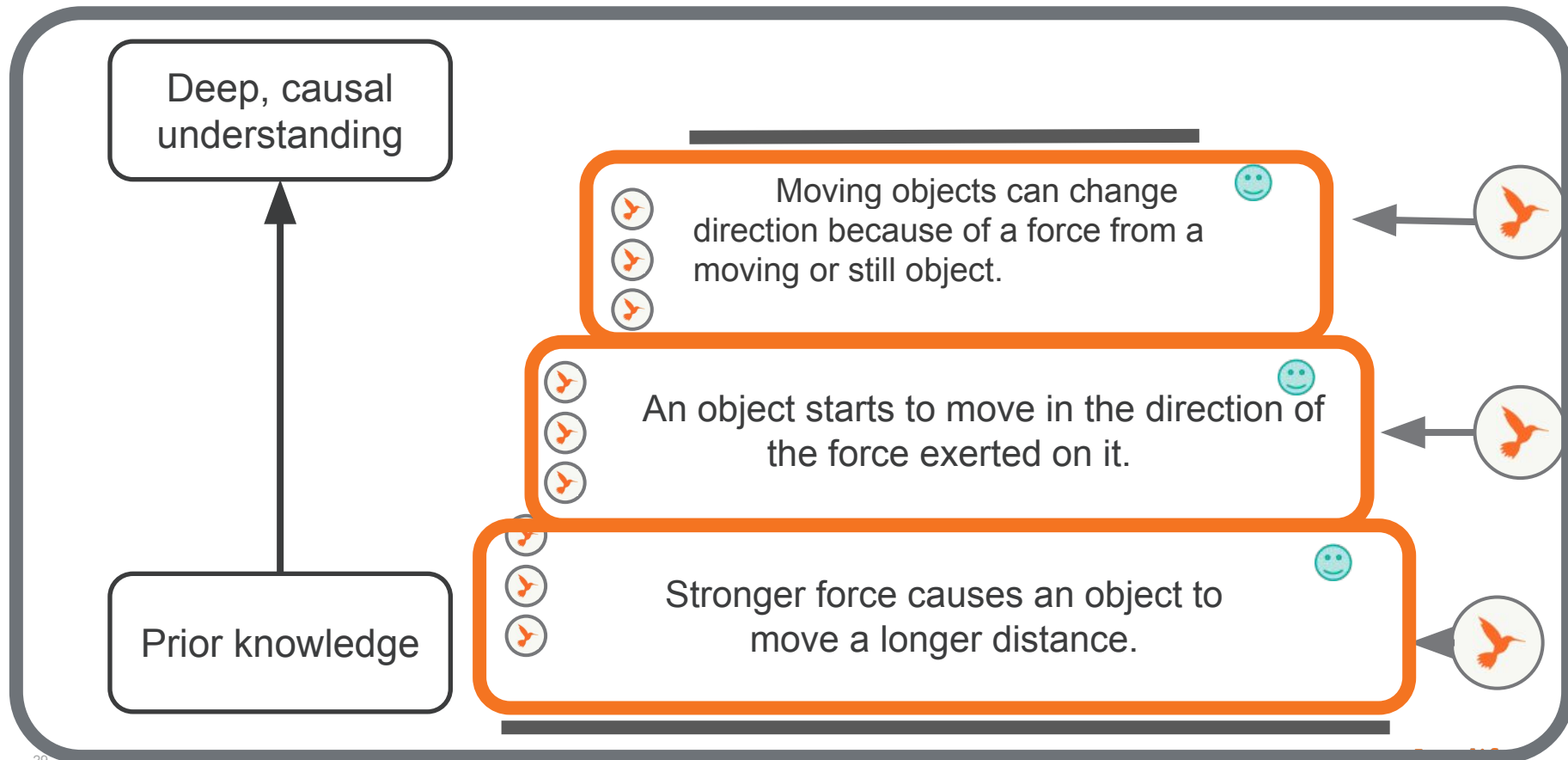
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# Investigation Assessments



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
<b>Lesson 1.1:</b> 3-D Performance Task: Scientific Explanation	<b>DCI:</b> <ul style="list-style-type: none"><li>• PS3.A: Definitions of Energy</li></ul> <b>SEPs:</b> <ul style="list-style-type: none"><li>• Practice 1: Asking Questions and Defining Problems</li><li>• Practice 6: Constructing Explanations and Designing Solutions</li></ul> <b>CCC:</b> <ul style="list-style-type: none"><li>• Systems and System Models</li></ul>	<b>Coherence Flowcharts</b>
<b>Assessment Type:</b> Pre-Unit Assessment		<b>Copymaster Compilation</b>
<b>Evaluation Guidance:</b> <ul style="list-style-type: none"><li>• 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.</li><li>• Possible Student Responses</li></ul>		<b>Flextension Compilation</b>
		<b>Investigation Notebook</b>
		<b>Multi-Language Glossary</b>
		<b>NGSS Information for Parents and Guardians</b>

## 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

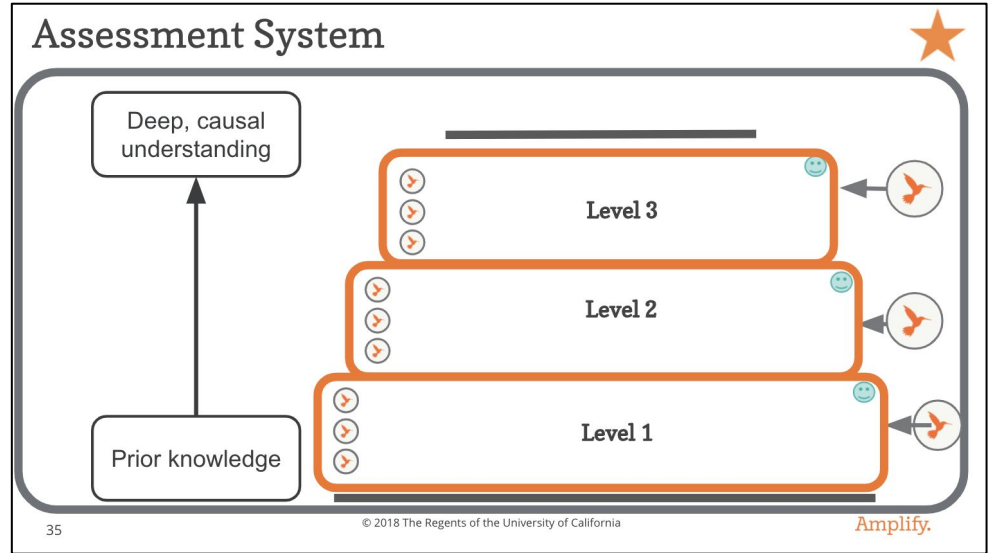
#### On-the-Fly Assessment 1: Synthesizing Information

**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?

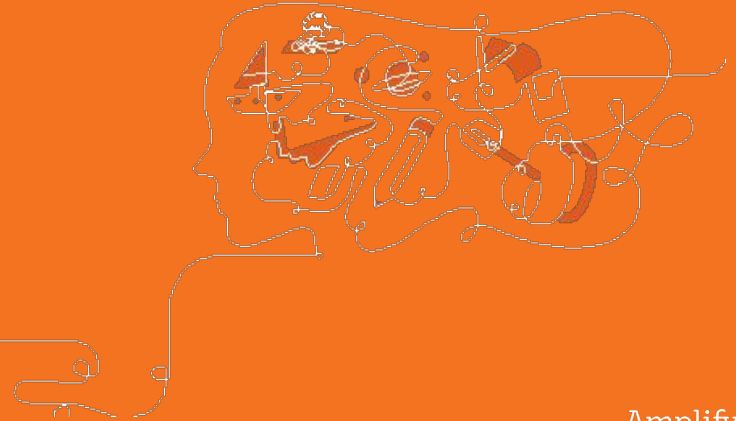
**Now what?** If students are having trouble getting started with synthesizing, or if they are connecting the reading to unrelated information, provide some additional models. You may wish to provide examples that combine information from the first section of *Systems* with information from other sources.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





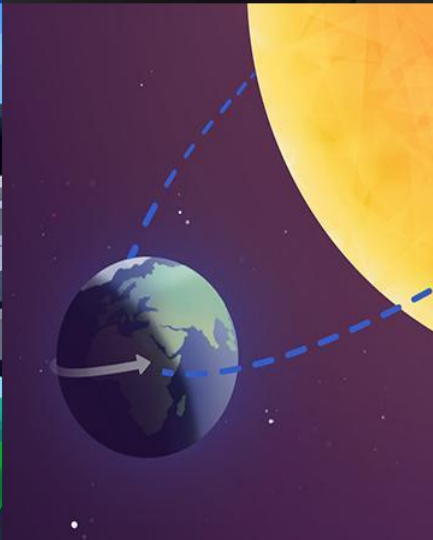
# How can you monitor students progress?

- 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 ***Light and Sound*** unit is Cause and Effect. In their role as light and sound engineers, students delve deeply into investigating light and sound as they learn to design stencils to project for a traveling puppet-theater company's scenes and learn to design sound sources to accompany their scenes. Students conduct simple tests to gather evidence to support or refute their ideas about causes. Students return to the idea of cause and effect again and again throughout the unit, through a variety of modalities.

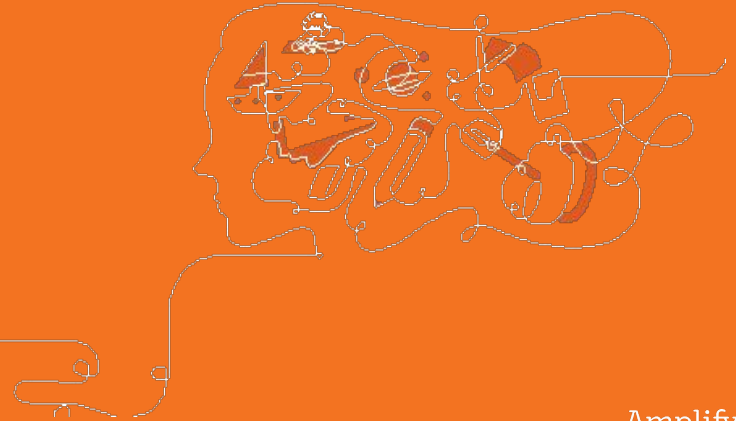
- **Do.** Students have multiple opportunities to explore connections between observable causes and effects, such as exploring how to make surfaces brighter, exploring how to make shadows on a surface, and observing the effects of different materials placed in front of a light source.
- **Talk.** Each of these explorations is followed by opportunities for student-to-student talk, through which students develop an understanding of the mechanisms that connect those causes to their effects: light coming from sources and the materials that block the light or allow the light to pass through.
- **Read.** In *Let's Test!*, students read about two children who are trying to find the right material to shade their lemonade stand. Students reflect on how the children in the book are figuring out the effects of using different materials in their tests.
- **Write.** Students connect causes and effects in oral and written explanations with the support of explanation language frames—sentence structures that support linking specific causes and mechanisms to effects by using the words *so* or *because*.
- **Visualize.** Through participating in kinesthetic models and constructing diagrams, students work to visualize how different materials interact with light and how those interactions result in different areas of brightness on a surface.



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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



# Light and Sound: Lesson 1.2 Overview

## Lesson Goal:

The purpose of this lesson is to draw on students' previous experiences and to connect to their hands-on explorations and reading explorations to understand that most places, even those that seem dark, usually have some source of light and that you need this light to see.

### Activity 1: Reviewing Engineering with Vocabulary

- Students learn to play Rugby. They practice the game, and then start to use their own words to describe the ball's movements.

### Activity 2: Exploring How Dark it Can Get

- Students explore how dark they can make the inside of the classroom and observe whether or not they can still see in that darkness.

### Activity 3: Reading: Can You See in the Dark?

- The teacher reads aloud *Can You See in the Dark?* Students are introduced to the practice of asking questions to gather additional information.

### Activity 4: Introducing the What We Know About a Light

- The teacher begins to create the What We Know about Light chart with student input.


# Planning for an Upcoming Assessment

1. Choose an upcoming assessment for your unit.

2. Plan using the template or your note catcher.

Unit:			
Lesson:			
<b>Analyzing student data:</b> refer to the Look for section of the Lesson ____ assessment. <i>(If using the @Home Units refer to the chapter assessment considerations).</i>		<b>Taking action based on student data:</b> 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 3

Analyzing Student Assessment Data: Refer to the “Look For” section of Lesson 1.2 Act. 3 and refer to your observation notes.		Taking action based on student data: refer to the Now what section of the 1.2 Act. 3 assessment and consider how you might adjust instruction in your classroom.	
Which misconception? 	Which students?	When?	How?
<ul style="list-style-type: none"> <li><input type="checkbox"/> Key Concept</li> <li><input type="checkbox"/> Practice</li> <li><input checked="" type="checkbox"/> Crosscutting Concept</li> </ul> <p>Notes:  <i>Students have not yet been given much instruction on how to ask questions about science content and the books they read. Note whether or not students are using question words and asking questions, rather than making comments and connections. You can also observe if students' questions are relevant to the content.</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"> <li><input type="checkbox"/> In the moment</li> <li><input type="checkbox"/> In upcoming activity</li> <li><input type="checkbox"/> Outside of lesson</li> </ul> <p>Notes:</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Keep an eye on certain students</li> <li><input type="checkbox"/> Provide additional instruction</li> <li><input type="checkbox"/> Revisit an activity</li> </ul> <p>Notes:</p>

# Model Analysis: 1.2 Activity 3

Analyzing Student Assessment Data: Refer to the “Look For” section of Lesson 1.2 Act. 2 and refer to your observation notes.

Taking action based on student data: refer to the Now what section of the 1.2 Act. 2 assessment and consider how you might adjust instruction in your classroom.

Which misconception?



Which students?

- Key Concept
- Practice
- Crosscutting Concept

Notes:

*The focal comprehension strategy in this unit is visualizing by using information read or seen in books. Student should reference elements in an image and talk or gesture to describe movement.*

*Tristian  
Trent  
Wanda  
Zena*

When?

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

Notes:

*If students are not using question words, consider writing “How?” “What?” “Where?” “When?” and “Why?” on a chart or on the board as a reference to help students. You might also post language frames. You may consider rereading sections of *Can You See in the Dark?* and offering examples of questions and non-questions to help students determine which is asking a question (e.g., *Where is the light coming from in the theater?* vs. *There is a lot of light in the theater.*)*

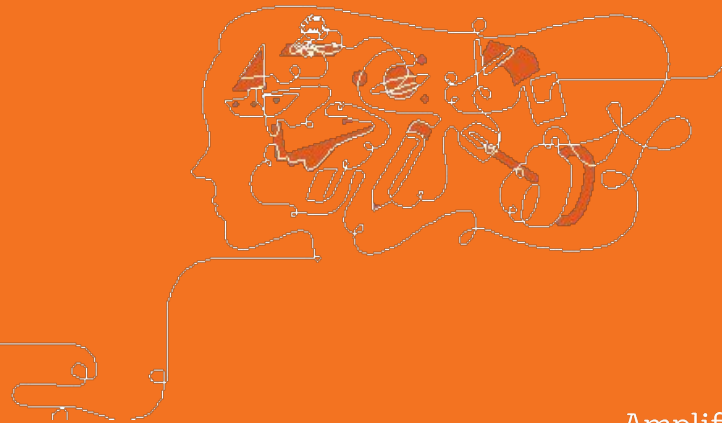
How?

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

Notes:

*Coach students listed after 1.2 Act 3*

# Resources for Tailoring Instruction

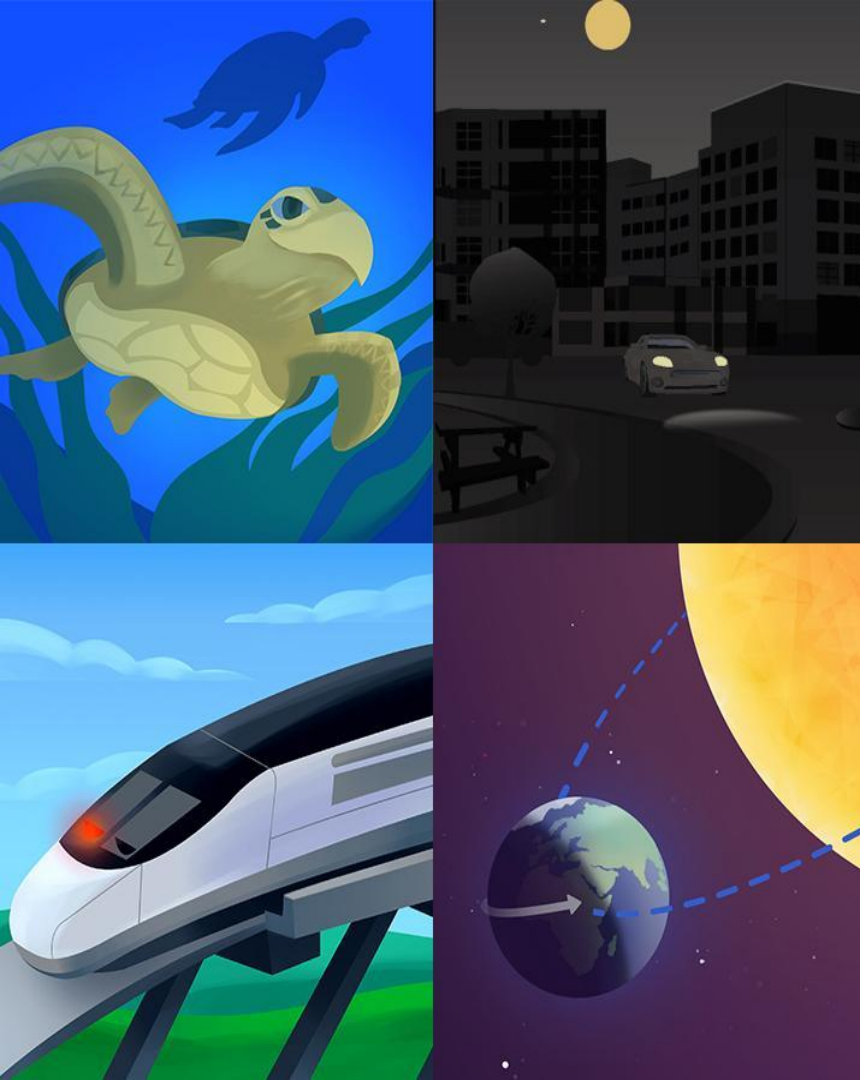


# How do I tailor instruction for my classroom?

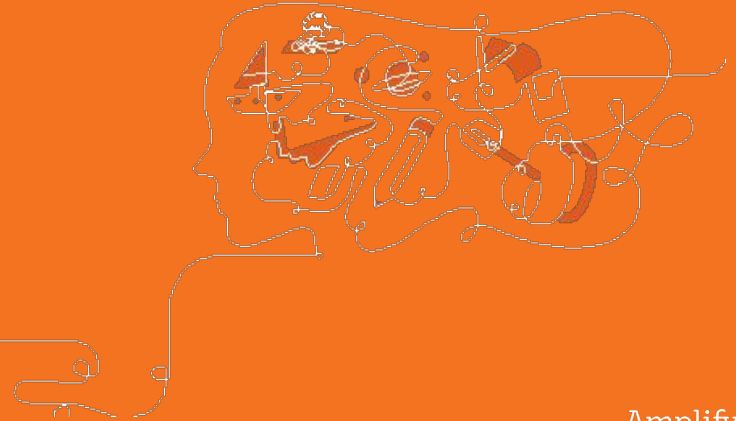
- Group students according to ability level
- Use the “Look For” and “Now what” tools to provide support based on formative assessment data
- Use the differentiation brief within each lesson
- Pull intervention suggestions from the student online component

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# Multimodal Instruction





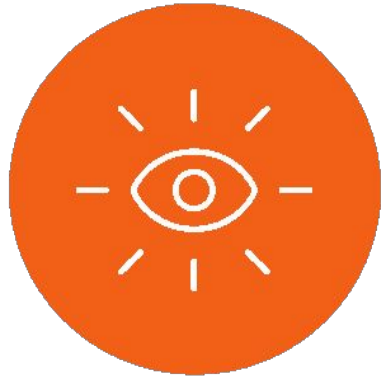
# Multimodal, phenomenon-based learning

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.



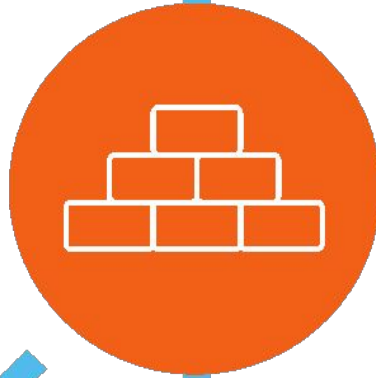
# Amplify Science approach



Introduce a phenomenon  
and a related problem



Collect evidence from  
multiple sources



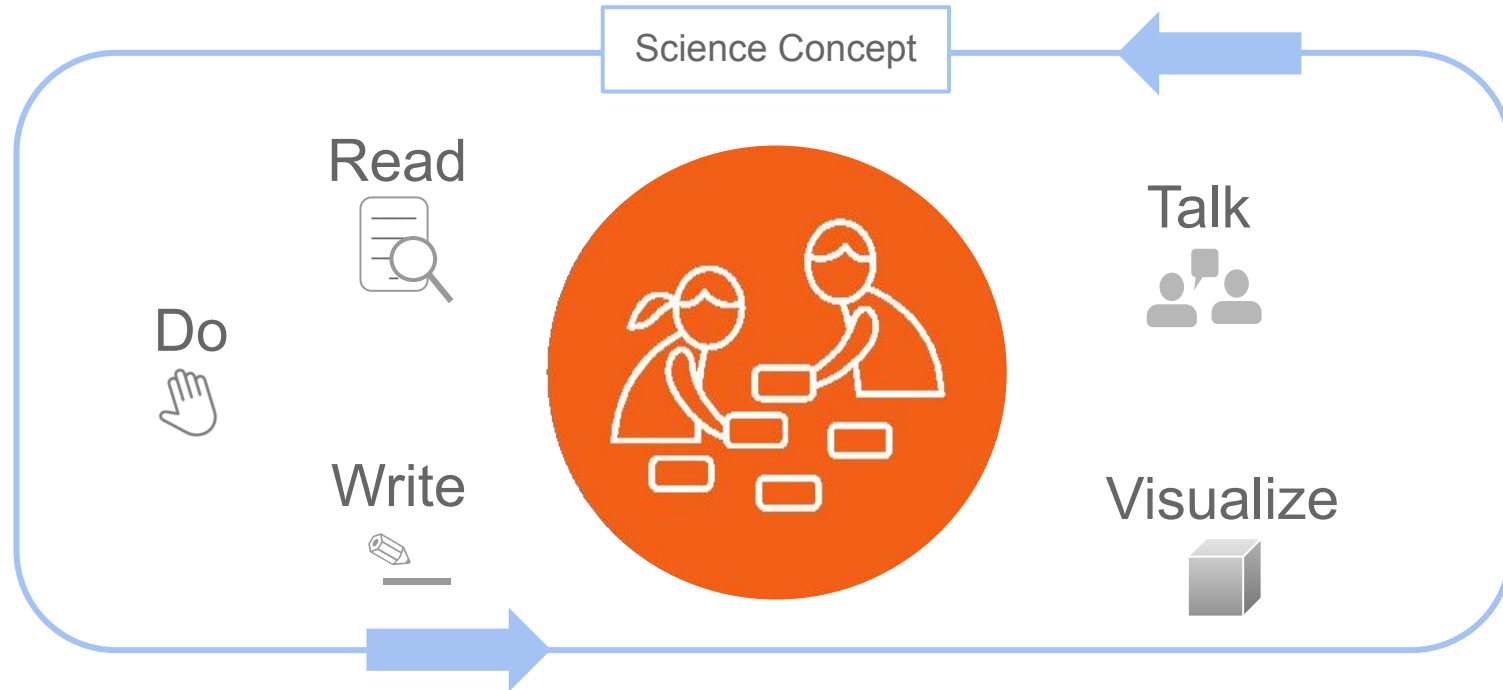
Build increasingly  
complex explanations



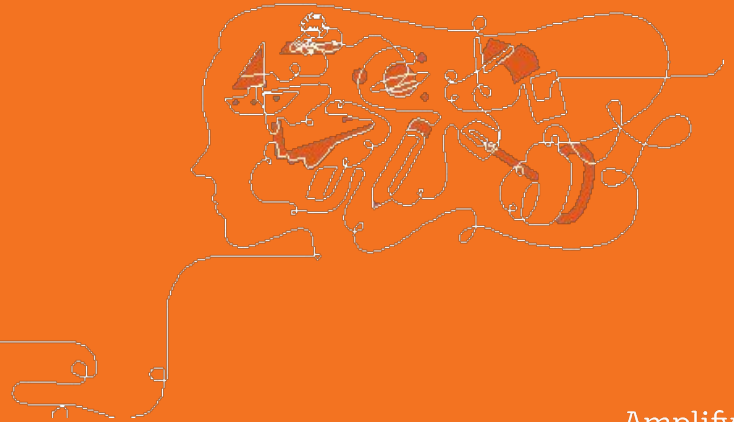
Apply knowledge  
to a different context

# 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?





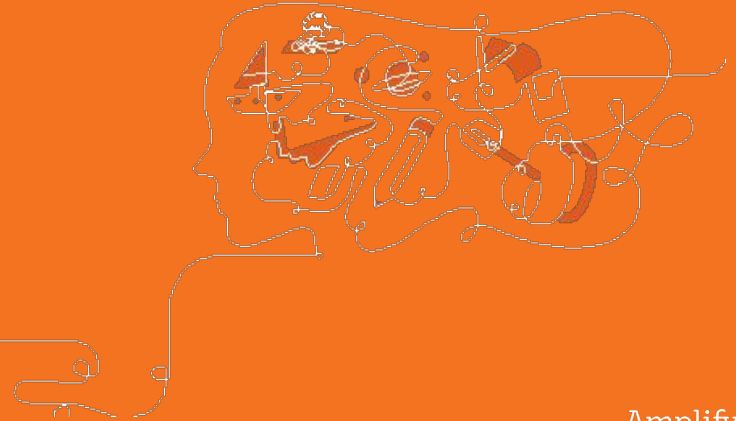
	<b>Kindergarten - Grade 1</b>	<b>Grades 2-5</b>
<b>Discourse routines</b>	<p>Students engage in informal partner, small group, and full class talk as well as with Shared Listening, a structured discourse routine.</p> <p>To work towards answering each Chapter question, students first compose responses 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"><li>• Shared listening</li><li>• Think-pair-share</li><li>• Think-draw (or write) -pair-share</li><li>• Thought swap</li><li>• Concept mapping</li><li>• Word relationships</li><li>• Building on ideas</li><li>• Evidence circles</li></ul>

# 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 a Lesson Brief. The main content area is a vertical list of menu items, each with a downward-pointing chevron icon on the right. The items are: Lesson Brief (highlighted in light green), Overview, Materials & Preparation, Differentiation (with a large orange arrow pointing to it from the right), Standards, Vocabulary, and Unplugged?. Below this list is a horizontal navigation bar with four tabs: Step-by-step, Teacher Support (which is underlined in purple), Possible Responses, and My Notes.

Lesson Brief	
Overview	▼
Materials & Preparation	▼
Differentiation	▼
Standards	▼
Vocabulary	▼
Unplugged?	▼

Step-by-step   Teacher Support   Possible Responses   My Notes

# 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

**Accessing prior knowledge.** This lesson begins by inviting students to think about a familiar place that is very bright and a familiar place that is very dark. Partners then share their ideas. Sharing these initial ideas related to light and dark places can help students mentally prepare to learn more about the topic. Reserving time to share ideas, questions, and experiences also helps students begin learning from one another.

**What We Know About Light chart.** Using a visual representation to keep track of students' growing understanding of what they read and investigate about light can serve multiple goals. It is a chance for students to practice describing the things they read about, it provides students with access to observations they may not have noticed, and it creates a public artifact that students can continually reference as they continue thinking and learning about light.

**Explicit pairing of activities.** Before students engage in the Read-Aloud of *Can You See in the Dark?*, they explore trying to make a completely dark place in the classroom. This helps students explore their conceptual understanding of light and darkness as well as rehearse and listen to language that can help them connect to new vocabulary and ideas presented in the Read-Aloud.

## Potential Challenges in This Lesson

**Reading-centered.** Reading science texts is challenging. Much of the vocabulary in *Can You See in the Dark?* may be unfamiliar to some students. Students who struggle to follow complex oral language in general may struggle with listening to the Read-Aloud in this lesson.

**Generalizing from an example to a principle.** Some students may be convinced that they were able to create completely dark places and still see. This will make it challenging for them to connect to the idea that when they can see, there is a source of light.

## Specific Differentiation Strategies for English Learners

**Preview the Read-Aloud.** English learners have a variety of resources they bring to a learning task. Often, they have topic knowledge in their primary languages. To maximize these resources, preview the book *Can You See in the Dark?* with students before the Read-Aloud. To assure that students are able to make meaning from the book, have them engage with the pictures and discuss what they notice. You may want to invite them to use their primary languages with a partner who speaks the same primary language. During this time, you can introduce key vocabulary such as *bright*, *dark*, *evidence*, *observe*, *source*, and *surface* to preview the content that will be in the book. You can also point out the cognates in Spanish for some of these words like *evidence/evidencia*, *observe/observer*, and *surface/superficie*. This preview will cue English learners to pay attention to certain information during the Read-Aloud and will increase their chances of gaining new content knowledge.

## Specific Differentiation Strategies for Students Who Need More Support

**Refer to specific strategies for English learners.** Throughout this unit, the strategies listed in the Specific Differentiation Strategies for English Learners section are often good for a variety of learners. Students who need more support for reading, writing, talking, and using academic language will often benefit from these suggestions as well.

**Providing vocabulary support for challenging text.** Reading *Can You See in the Dark?* has a large vocabulary load and may be especially challenging for English learners or students who may need more language and vocabulary support. You may want to preview the text with a small group of students, pointing out certain words such as *bright*, *observe*, *source*, and *surface* that are central to the reading. You may suggest that readers simply focus on trying to answer the question *Can you see in the dark?* by using the pictures in addition to the words as you read the book. Students will continue to be exposed to and have the opportunity to practice these words throughout the unit.

**Choose partners strategically.** Creating positive and supportive student partnerships is a crucial first step for creating the kind of classroom culture in which students feel confident and comfortable sharing their thinking. This unit provides many opportunities for student learning to occur through discussion and partner activities. Thinking ahead to create good working partnerships will be an essential component of success for these kinds of lessons.

## Specific Differentiation Strategies for Students Who Need More Challenge

**Reading the book with a partner.** You may wish to invite students to read the book with partners after the Read-Aloud. Provide all students with this opportunity as some will rely heavily on the pictures when revisiting the book, while others may take turns reading the text.

# 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	
<b>design:</b> 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
<b>direction:</b> 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
<b>distance:</b> how far it is between two things	مسافة: البعد بين شيئين اثنين
<b>exert:</b> to cause a force to act on an object	بذل: يوقع قوة للتأثير على جسم ما
<b>engineer:</b> a person who makes something in order to solve a problem	مهندس: شخص يقوم بشيء ما لحل إحدى المشكلات
<b>force:</b> a push or a pull	قوة: فعل الدفع أو السحب
<b>object:</b> a thing that can be seen or touched	جسم: شيء يمكن رؤيته أو لمسه

Pulls—English-Arabic Glossary  
© 2018 The Regents of the University of California. All rights reserved. Permission is granted to photocopy for classroom use.

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)

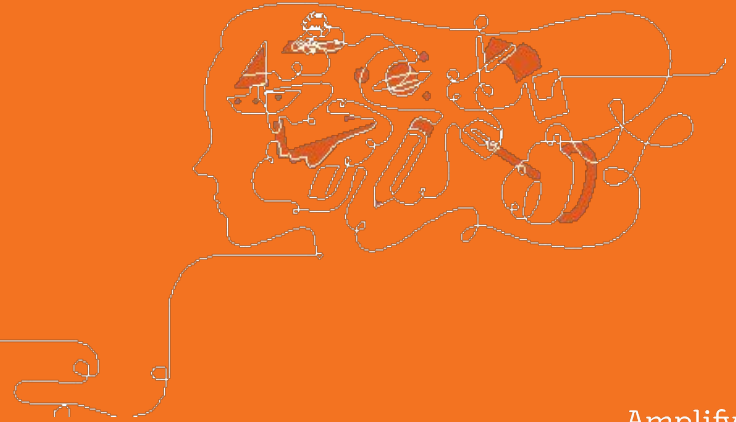


# Reflect and Share



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

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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



# Culturally and linguistically responsive teaching

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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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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

– 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?

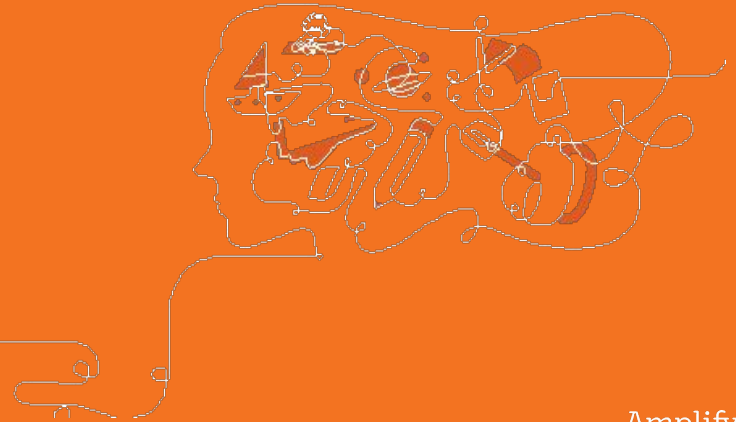
**A** Differentiation

**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

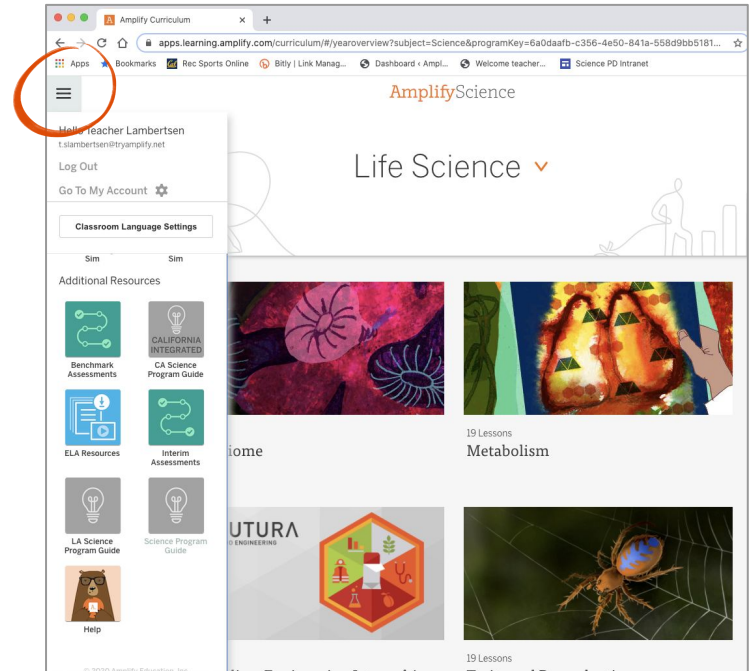
- Login information
- Pacing guides
- Getting started guide
- NYC Companion Lessons
- **Resources from PD sessions**
- And much more!

# 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](https://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](mailto:scihelp@amplify.com)



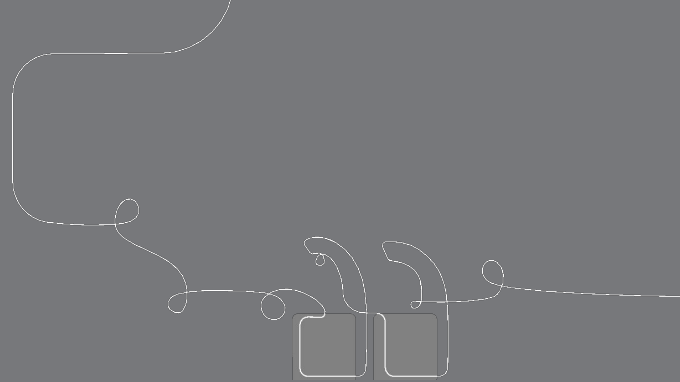
800-823-1969



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?