

# Middle school course curriculum structure

## Middle School Curriculum New York City Edition

### Grade 6

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

### Grade 7

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

### Grade 8

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

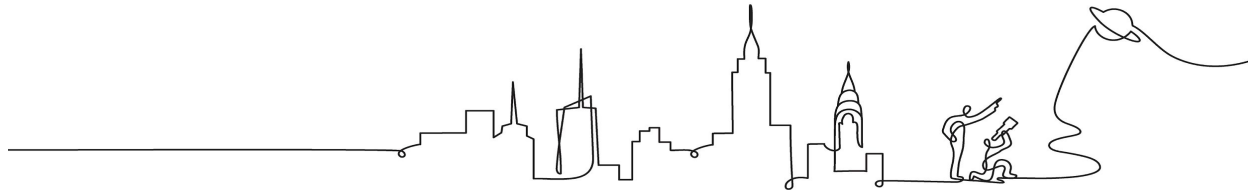


# Welcome to Amplify Science!

Follow the directions below as we wait to begin.

1. Please log in to your Amplify Account.
2. In the chat, share your name, school, your most current instructional context (remote/hybrid/in-person), & how many years you've been teaching Amplify Science.

*(Example: Reshma, H, 2)*



# Amplify Science

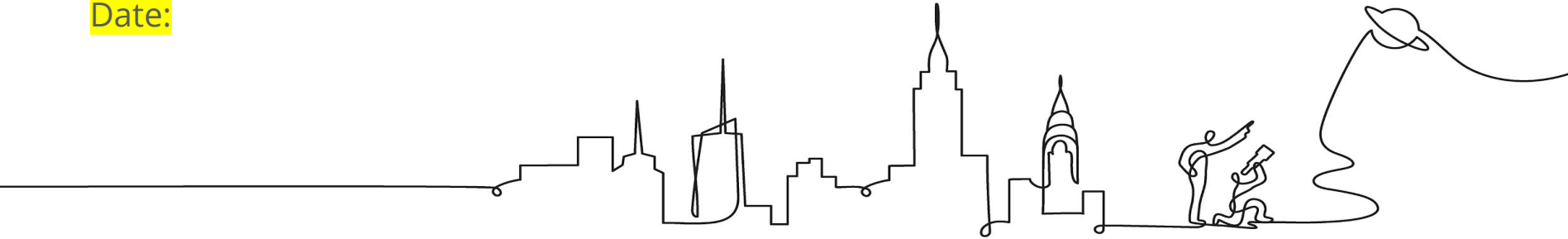
New York City

## Amplify Science Planning for Next Year

8th grade teacher session

Presenter Name:

Date:

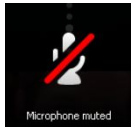


# Remote Professional Learning Norms



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/8a31e095506df8a2015256f88ab544\_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

# Overarching goals

By the end of this 3-hour workshop, you will be able to:

- Reflect on your implementation of Amplify Science in the targeted areas of digitally-enhanced learning, supporting diverse learners, & disciplinary literacy.
- Utilize these reflections to begin targeted planning at the unit & lesson level for the upcoming school year.





# Plan for the day

- **Framing the day**
  - **Welcome and introductions**
  - **Anticipatory activity**
- Targeted Implementation Reflection
  - Digitally-enhanced learning
    - Remote/Hybrid Resources Utilization
  - Reaching diverse learners
    - Utilizing Embedded Assessments
    - Culturally Linguistically Responsive Teaching
  - Science & Literacy
    - Accessing Complex Texts
    - Supporting Academic Discourse
    - Writing In Science
- Guided Planning
  - Unit internalization protocol
  - Chapter & Lesson-level internalization
    - Planning & pacing
- Closing
  - Reflection & additional resources
  - Survey

# Anticipatory activity

## Reflect & share

- Complete your **self-assessment**
- Then, on the **Jamboard**, “post” the “**I do**” statement you identify as your **greatest strength**

Step #1

### Self-inventory: choosing an area of focus for planning

Directions: Use the statements to help guide your areas of strength & support for guided planning.

Statements	I don't	I try	I do
1. I can utilize <b>digital resources</b> to enhance instruction.			
2. I can administer <b>assessments embedded</b> within instruction.			
3. I can utilize <b>data</b> gathered from <b>formative assessments</b> to guide my instruction.			
4. I can adjust my instruction to respond to the unique <b>cultural &amp; linguistic</b> needs, strengths, and backgrounds of my students.			
5. I can support my students in deconstructing <b>complex scientific texts</b> in order to bolster scientific understanding			
6. I can implement <b>discourse routines</b> in order to support students developing scientific understanding.			
7. I can adjust <b>questioning strategies</b> to support students' scientific inquiry.			
8. I can scaffold students writing of <b>scientific arguments</b> & explanations.			

Step #2

Page 1

Jamboard





Questions?



# Plan for the day

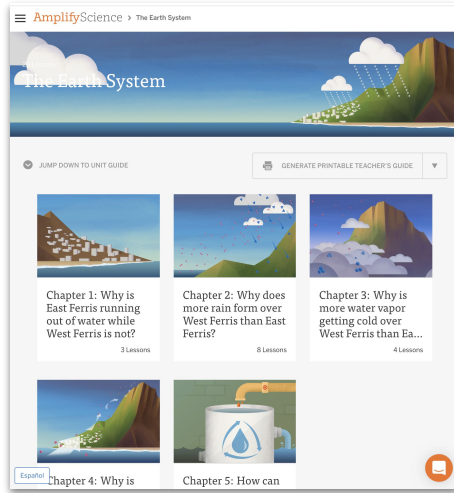
- Framing the day
  - Welcome and introductions
  - Anticipatory activity
- **Targeted Implementation Reflection**
  - **Digitally-enhanced learning**
    - **Remote/Hybrid Resources Utilization**
  - Reaching diverse learners
    - Utilizing Embedded Assessments
    - Supporting ELLs
  - Science & Literacy
    - Accessing Complex Texts
    - Supporting Academic Discourse
    - Writing In Science
- Guided Planning
  - Unit internalization protocol
  - Chapter & Lesson-level internalization
    - Planning & pacing
- Closing
  - Reflection & additional resources
  - Survey

# AmplifyScience@Home

A suite of resources designed to make extended remote and hybrid learning easier for teachers and students.



# Resource options



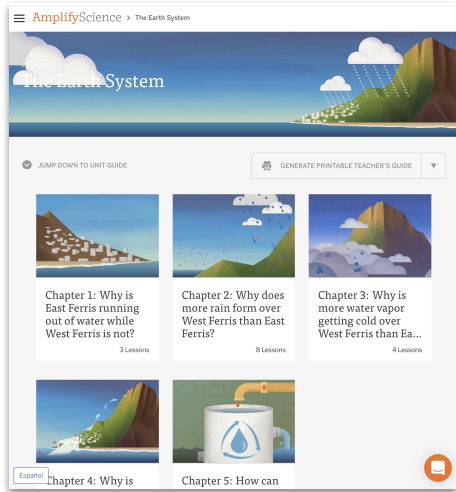
Original Amplify  
Science curriculum



Amplify Science@Home

# Resource options

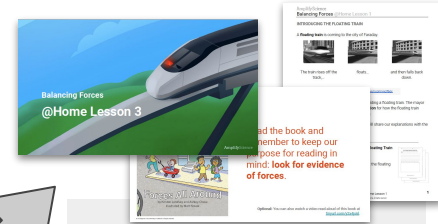
## Related but unique resources



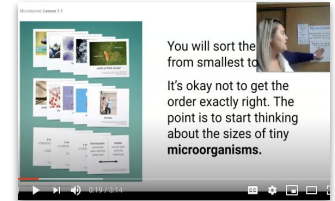
Original Amplify Science curriculum



Amplify Science@Home



@Home Units



@Home Videos

# Targeted reflection

We'll reflect on each area, following this structure:

- ❑ Brief overview of area/topic
- ❑ Model activity
- ❑ Reflect & share insights



# Collaborative reflection: **digitally-enhanced learning**

On the slides, enter:

- ❑ Successes
- ❑ Tools & strategies you found helpful
- ❑ Challenges
- ❑ Your next steps in this area

Digitally-enhanced learning	
Successes	Tools/strategies you found helpful
Challenges	Your next steps in this area



Questions?





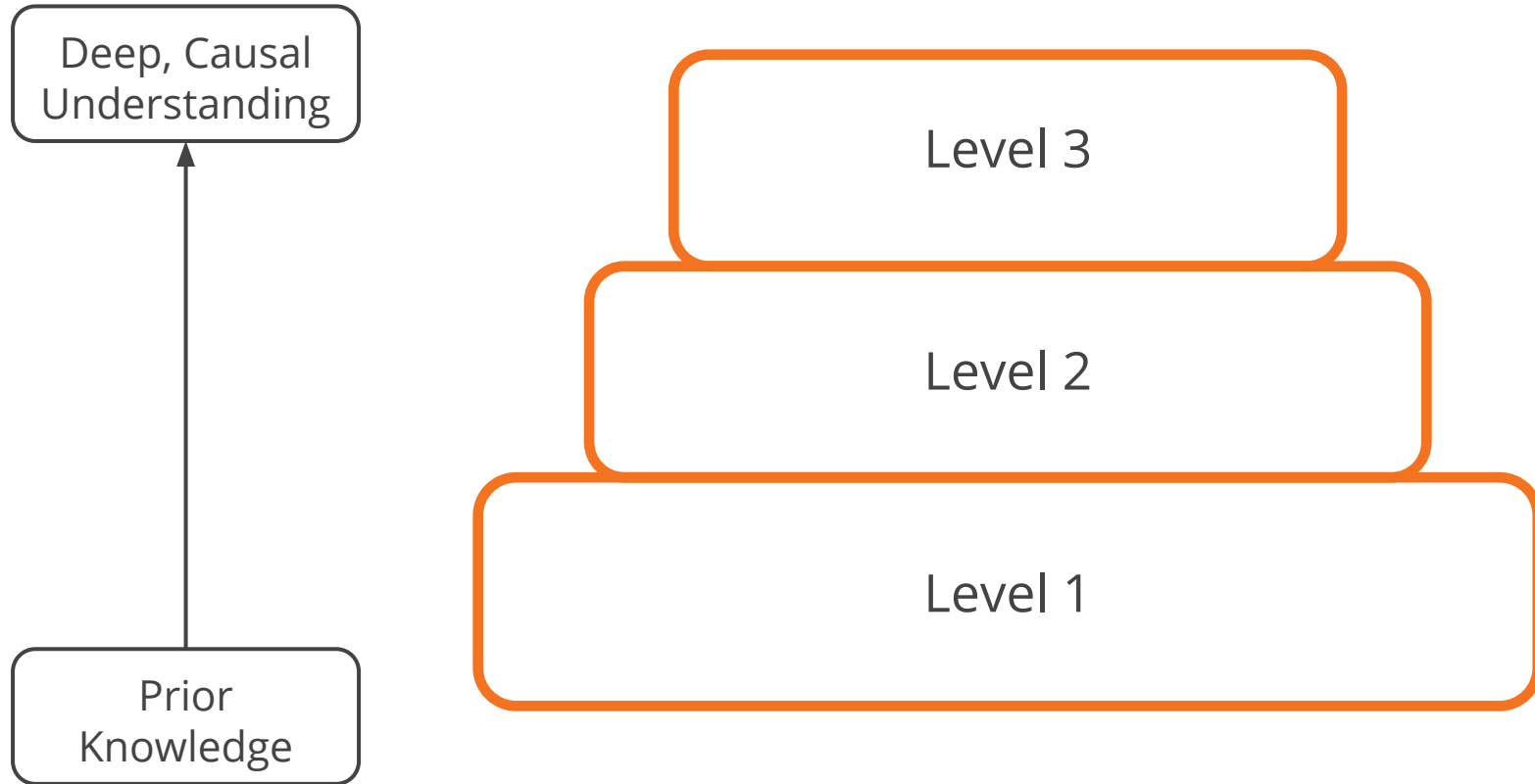
# Plan for the day

- Framing the day
  - Welcome and introductions
  - Anticipatory activity
- **Targeted Implementation Reflection**
  - Digitally-enhanced learning
    - Remote/Hybrid Resources Utilization
  - **Reaching diverse learners**
    - **Utilizing Embedded Assessments**
    - **Culturally Linguistically Responsive Teaching**
  - Science & Literacy
    - Accessing Complex Texts
    - Supporting Academic Discourse
    - Writing In Science
- Guided Planning
  - Unit internalization protocol
  - Chapter & Lesson-level internalization
    - Planning & pacing
- Closing
  - Reflection & additional resources
  - Survey

# Utilizing Embedded Assessments



# Progress Build: A unit-specific learning progression



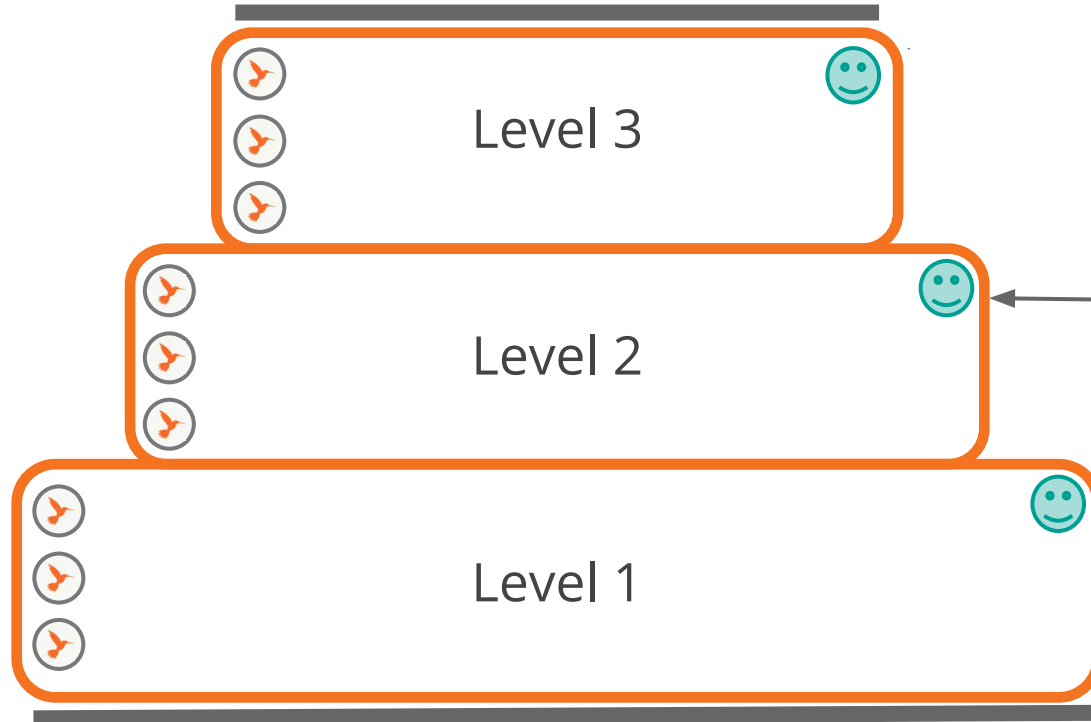
# Assessment System



Deep, Causal Understanding



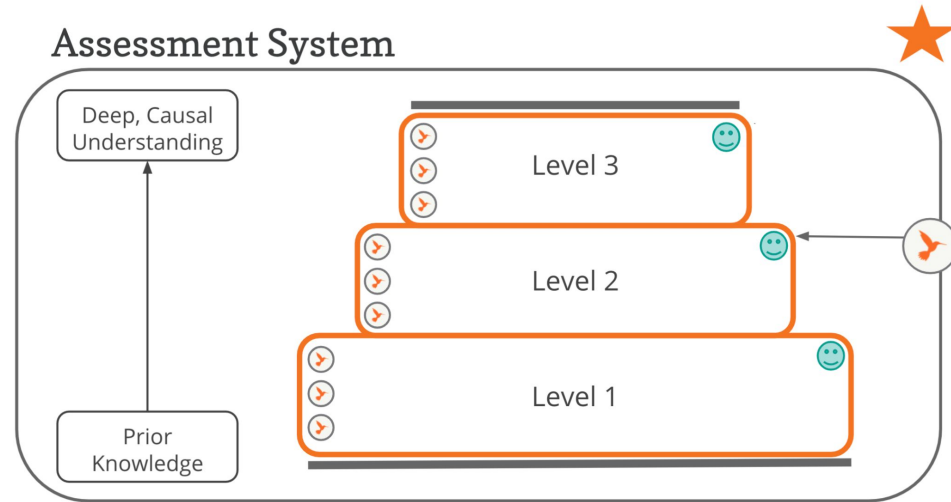
Prior Knowledge



# Assessment System Reflection

There are many assessment opportunities in each Amplify Science unit.

**Question:** What does having this quantity of assessment opportunities do for students? For teachers?



# On-the-Fly Assessments

- ❑ Occurs throughout the lessons
- ❑ Three-dimensional tasks that span a range of modalities
- ❑ Provides evidence of how a student is coming to understand core concepts and developing dexterity with SEPs and CCCs
- ❑ Designed to help a teacher make sense of student activity during a learning experience
- ❑ Contains Look For / Now What resource for analyzing student responses

# 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 ?

# Data Collection Tool Sample

## Lesson 1.5 Activity 3: Modeling the Relationship Between Atmosphere and Climate

Look For 1: Shows correct atmospheric trends

Look For 2: Shows trends correlate with increased surface energy absorption

(X indicates student did not demonstrate Look For.)

Student	LF1	LF2	Notes
Samya	X		CO2 decreasing
Devon	X		High amounts of sulfur dioxide, then high amounts of methane
Iyakiel			
Dantaijia			
Samuel		X	Increasing CO2, but decreasing energy absorption
Alexcya			
Sallie	X		Showed increasing sulfur dioxide
Nevaeh B.	X	X	Decreasing methane and decreasing energy absorption. Explanation said that the air is hotter, so the surface must be cooler.
Salvador			
Yanailis			
Michelle			
Nevaeh Y.			
Corey			
Khadijah			
Victoria			
Kalii			
Andrew			
Kai'Aisja			
Nehemiah			
Oscar			





Questions?

# Culturally Linguistically Responsive Teaching



The Amplify Science curriculum was developed with supporting diverse learning needs in mind.



Two overarching conceptual frameworks informed Amplify Science's approach to ensuring access and equity for all students:

Universal Design for Learning & Culturally Linguistically Responsive Teaching.



# 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.



Source: (l): Aaron Yaazie; (um): Kyle Spradley/ University of Missouri; (lm) Dr. Grace O'Connell; (ur) Jane Rigby; (lr) Tina Shelton/ John A. Burns/ University of Hawaii at Manoa

# Culturally and linguistically responsive teaching

**Think, type, chat:** What have you leveraged from the Amplify curriculum to support culturally and linguistically responsive teaching?

## CULTURALLY AND LINGUISTICALLY RESPONSIVE TEACHING PRINCIPLES

- ∨ Promote a positive disposition toward diversity: +
- ∨ Leverage students' cultural and experiential backgrounds: +
- ∨ Value language diversity and multilingualism: +
- ∨ Cultivate students' development of the language of science: +

# Differentiation strategies to support ALL students

t.rsinha-das@tryamplify.net

Log Out

Go To My Account ⚙️

Classroom Language Settings

LEA Resources

LA Science Program Guide

Science Program Guide

Help

Interim Assessments

Program Hub

## 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

# Differentiation in Amplify Science

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





# 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

# Model activity

As you observe activity, focus on your successes, challenges, & next steps from this area of your self-inventory

1,2,3,4

## Self-inventory: choosing an area of focus for planning

**Directions:** Use the statements to help guide your areas of strength & support for guided planning.

Statements	I don't	I try	I do
1. I can utilize <b>digital resources</b> to enhance instruction.			
2. I can administer <b>assessments embedded</b> within instruction.			
3. I can utilize <b>data</b> gathered from <b>formative assessments</b> to guide my instruction.			
4. I can adjust my instruction to respond to the unique <b>cultural &amp; linguistic</b> needs, strengths, and backgrounds of my students.			
5. I can support my students in deconstructing <b>complex scientific texts</b> in order to bolster scientific understanding.			
6. I can implement <b>discourse routines</b> in order to support students developing scientific understanding.			
7. I can adjust <b>questioning strategies</b> to support students' scientific inquiry.			
8. I can scaffold students writing of <b>scientific arguments</b> & explanations.			



19 Lessons

# Evolutionary History

## Is this Mystery Fossil more closely related to wolves or to whales?

Students act as student paleontologists to discover the evolutionary history of a mystery fossil. Is this species more closely related to wolves or whales, and how did all three species change over time? Students learn how to interpret similarities and differences among fossils, they investigate how natural selection can lead to one population becoming two different species, and also investigate evolution over vast periods of time.

# Evolutionary History: Advisory Committee

The problem students

This is what students did before the model activity...

Evidence sources and reflection opportunities

Key concepts

Application of key concepts to the problem

Explanation that students can make to answer the Chapter 1 Question

2

Is this Mystery Fossil more closely related to wolves or whales?

Here's what students need to figure out...

Where in the museum does this new fossil belong?

Why do different species share similar structures? (1.3, 1.4, 1.5)

- Examine body structures of different species and group species based on similarities (1.2)
- Read "How You are Like a Blue Whale" (1.3)
- Revisit "How You are Like a Blue Whale" (1.4)
- Use the Sim to find two species that share a common body structure on an evolutionary tree (1.4)

- Species inherit their body structures from their ancestor populations. (1.4)
- Body structures that are shared between two species are evidence that these two species inherited the shared structures from a common ancestor population. (1.4)

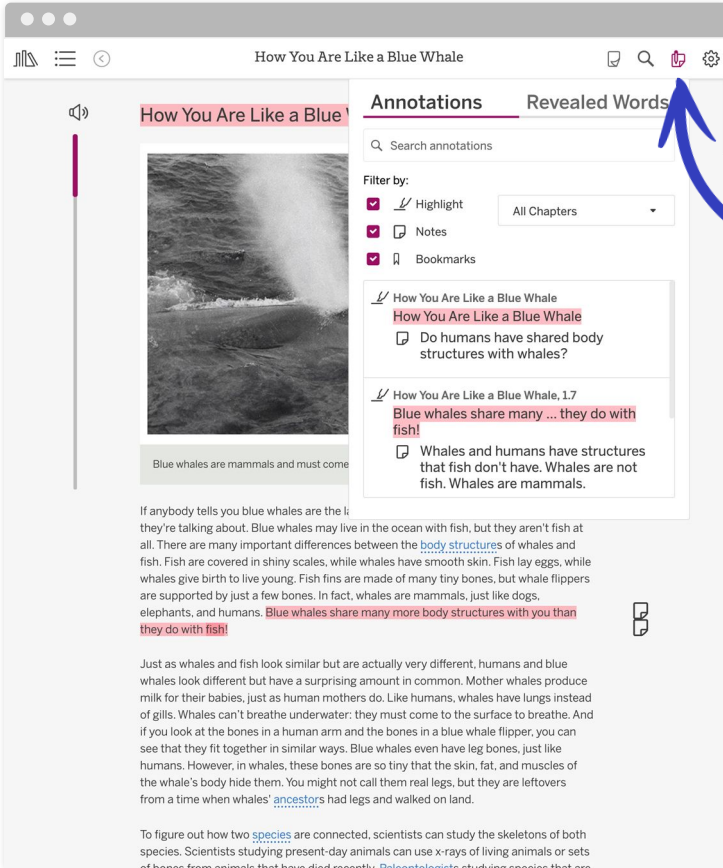
- Discuss claims about where in the museum the mystery fossil belongs based on new evidence (1.5)
- Analyze structural similarities among wolves, whales, and the mystery fossil and consider what a body structures a common ancestor might have had (1.5)
- Use the Modeling Tool to show a likely common ancestor based on structures shared between two model species (1.5)

The Mystery Fossil should be placed with either the whales in the Whale exhibit or the wolves in the Carnivore exhibit. This is because the fossil shares many similar structures with both wolves and whales. Traits, such as body structures, are passed down from parents to offspring. When two species have many similar structures, this is evidence that both species descended from a common ancestor population with those structures. The Mystery Fossil likely shares a common ancestor population with both wolves and whales.

## **Activity 3**

# Discussing Annotations





How You Are Like a Blue Whale

Annotations Revealed Words

Search annotations

Filter by:

- Highlight All Chapters
- Notes
- Bookmarks

How You Are Like a Blue Whale  
How You Are Like a Blue Whale  
Do humans have shared body structures with whales?

How You Are Like a Blue Whale, 1.7  
Blue whales share many ... they do with fish!  
Whales and humans have structures that fish don't have. Whales are not fish. Whales are mammals.

How You Are Like a Blue Whale

Blue whales are mammals and must come

If anybody tells you blue whales are the li they're talking about. Blue whales may live in the ocean with fish, but they aren't fish at all. There are many important differences between the body structures of whales and fish. Fish are covered in shiny scales, while whales have smooth skin. Fish lay eggs, while whales give birth to live young. Fish fins are made of many tiny bones, but whale flippers are supported by just a few bones. In fact, whales are mammals, just like dogs, elephants, and humans. Blue whales share many more body structures with you than they do with fish!

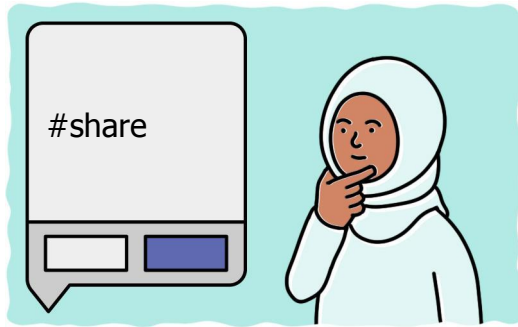
Just as whales and fish look similar but are actually very different, humans and blue whales look different but have a surprising amount in common. Mother whales produce milk for their babies, just as human mothers do. Like humans, whales have lungs instead of gills. Whales can't breathe underwater: they must come to the surface to breathe. And if you look at the bones in a human arm and the bones in a blue whale flipper, you can see that they fit together in similar ways. Blue whales even have leg bones, just like humans. However, in whales, these bones are so tiny that the skin, fat, and muscles of the whale's body hide them. You might not call them real legs, but they are leftovers from a time when whales' ancestors had legs and walked on land.

To figure out how two species are connected, scientists can study the skeletons of both species. Scientists studying present-day animals can use x-rays of living animals or sets of bones from animals that have died recently. Paleontologists study species that are

Next, you'll look over your annotations and choose some to discuss.

Let's talk about the different hashtags you'll use to select your annotations.

# Discussing Annotations



## Step 1: Prepare to Share

Choose an interesting question or connection to share with a partner.

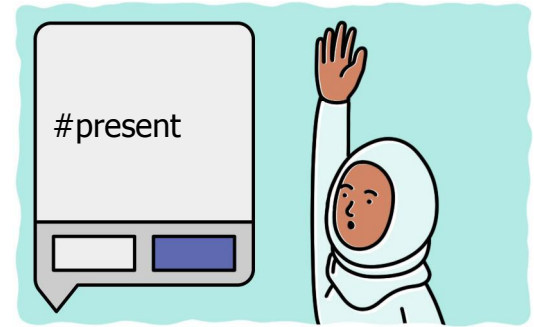
Tag it with **#share**.



## Step 2: Discuss

Talk about your chosen annotation with a partner.

Tag it with **#discussed** if you were able to resolve your questions.



## Step 3: Prepare to Present

Choose an interesting idea or unanswered question to present to the class.

Tag it with **#present**.

## Discussing Annotations

### Discussing Annotations

1. Look over your annotations on the "How You Are Like a Blue Whale" article. Pick one or two of your annotations to share with a partner. Then, edit the annotations and add the tag "#share."
2. Discuss the tagged annotations with your partner. After your discussion, edit these annotations and change the tag to "#discussed."
3. Now, choose a question or

### Discussing Annotations

#### #share

---

Carefully choose an interesting annotation (comment, question, connection, vocabulary word) you'd like to share with your partner and add #share to this annotation.

#### #discussed

---

Add #discussed to your annotation if you feel that you and your partner have resolved a question OR if your discussion gave you a deeper understanding about something in the article.

#### #present

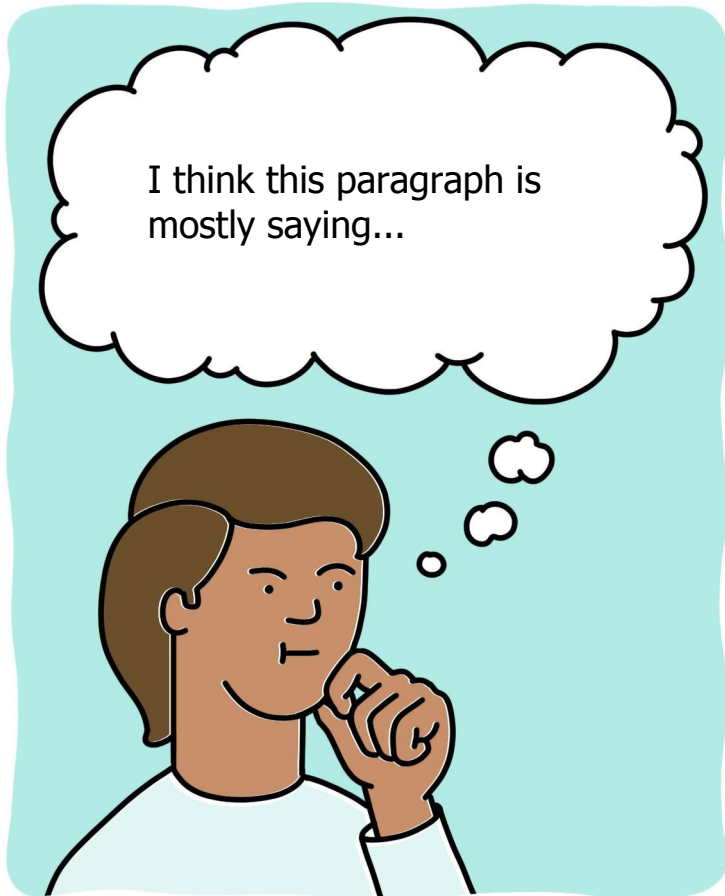
Add #present to your annotation to mark any unresolved questions or ideas you would like to present to the class.



Let's discuss some of your annotations as a class.



What **connections** did you make, or what **unanswered questions** do you still have about the article?



Do you think the strategy of **summarizing** was useful?

Why or why not?


Discussing Annotations

---

Reflecting on Annotations

Review your annotations and record something about the text that you discussed with your partner. Then press NEXT in order to submit your article.

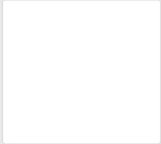
How You Are Like a Blue Whale



Blue whales are mammals and must come to the ocean's surface to breathe. NOAA

If anybody tells you blue whales are the largest fish on Earth, they don't know what they're talking about. Blue whales may live in the ocean with fish, but they aren't fish at all. There are many important differences between the [body structures](#) of whales and

What is something about the text that you discussed with your partner?





**Review** your annotations, and then **answer** the reflection question.



Let's discuss how the information in the article relates to our question.

**Investigation Question:**

Why do different species share similar structures?

## Vocabulary



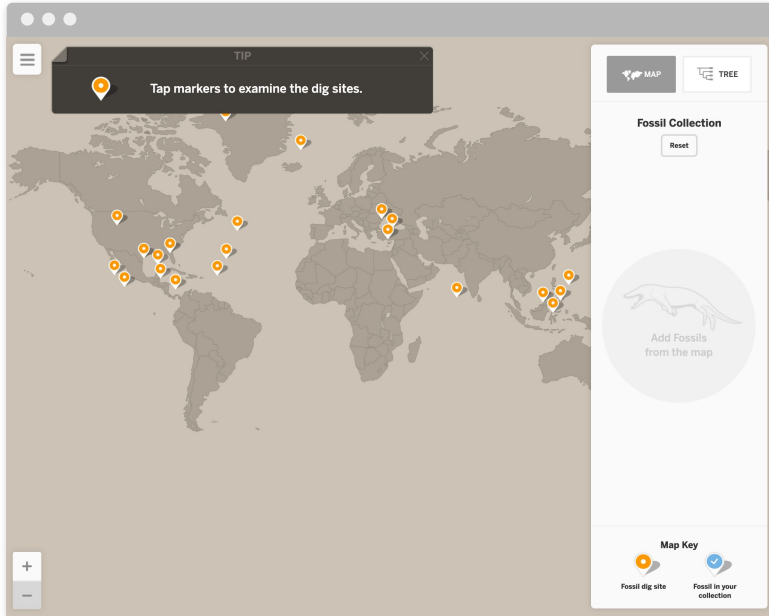
**evolution**

the process by which species adapt to environmental changes  
over a very long time

## **Activity 4**

# Introducing the Evolutionary History Simulation





In this unit, you'll use the *Evolutionary History* **Sim** to see how the museum's fossils are related and to think about evolution.

I'll show you a demonstration.

TIP Tap markers to examine the dig sites.

MAP TREE

Fossil Collection

Reset

Add Fossils from the map

Map Key

Fossil dig site Fossil in your collection



Let's press **Study** to learn more about this fossil. There are three tabs in the Study window: Exhibit, Appearance, and Structures.

The screenshot shows a digital interface for studying a fossil. The background is a world map with several orange location pins. A central pop-up window is titled "Tiktaalik" and has a "Study" button. Below the title are three tabs: "Exhibit" (which is circled in blue), "Appearance", and "Structures". The "Exhibit" tab is active, showing a photograph of a fossilized fish skeleton. Below the image is a text box with the following text: "Tiktaalik (tick-TALL-ick) lived 375 million years ago. Fossil evidence shows that these creatures shared many traits with fishes, such as scales, fins, and gills. However, they also shared traits with land mammals, such as a neck, ribs, and bones called the radius and ulna. They probably spent most of their time in shallow water near the shores, hiding from predators and hunting for their food. Tiktaalik ranged in size from one to three meters long." At the bottom of the text box is a blue "In Your Collection" button. To the right of the main window is a sidebar with a "MAP" button, a "TREE" button, and a "Fossil Collection" section with a "Reset" button. Below that is a smaller version of the "Tiktaalik" study window. At the bottom right is a "Map Key" section with two icons: an orange pin labeled "Fossil dig site" and a blue pin labeled "Fossil in your collection".



# Introducing the Evolutionary History Simulation

---

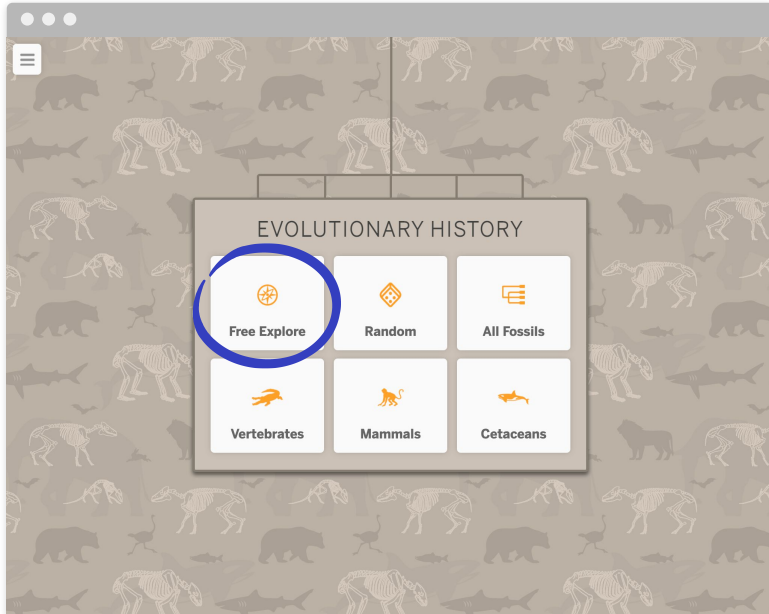
Exploring the *Evolutionary History* Simulation

Open the [Evolutionary History Simulation](#) in Free Explore mode and explore the Sim.

# Activity 5

# Homework





For this activity, you will open the Sim in **Free Explore** mode.

As you explore, you'll answer a series of questions about different things the Sim can do.

# Homework

---

## Exploring the *Evolutionary History* Sim

Open the [Evolutionary History Sim](#) in Free Explore mode and complete the scavenger hunt questions below.

1. In Map View, what happens when you press one of the orange markers?

You see a particular fossil discovery at that location.

You see what city is located in that part of the world.

# End of Lesson



THE LAWRENCE  
HALL OF SCIENCE  
UNIVERSITY OF CALIFORNIA, BERKELEY

Amplify.

Published and Distributed by Amplify. [www.amplify.com](http://www.amplify.com)

# Reflect & discuss

How does this model activity demonstrate & offer opportunities to

- ❑ Utilize digital resources to enhance instruction?
- ❑ Administer assessments embedded within instruction?
- ❑ Utilize data gathered from formative assessments to guide instruction?
- ❑ Adjust instruction to respond to the unique cultural & linguistic needs, strengths, and backgrounds of students?



# Collaborative reflection: reaching diverse learners

On the slides, enter:

- ❑ Successes
- ❑ Tools & strategies you found helpful
- ❑ Challenges
- ❑ Your next steps in this area

Reaching diverse learners	
Successes	Tools/strategies you found helpful
Challenges	Next steps in this area

Consider statements #1-4 on your self-inventory





Questions?



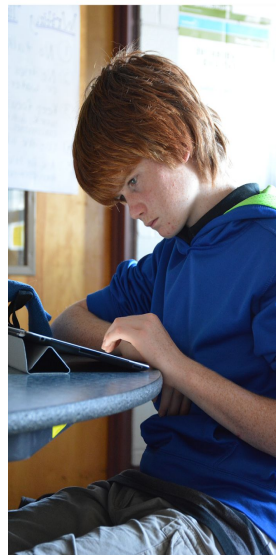
# Plan for the day

- Framing the day
  - Welcome and introductions
  - Anticipatory activity
- **Targeted Implementation Reflection**
  - Digitally-enhanced learning
    - Remote/Hybrid Resources Utilization
  - Reaching diverse learners
    - Utilizing Embedded Assessments
    - Culturally Linguistically Responsive Teaching
  - **Science & Literacy**
    - **Accessing Complex Texts**
    - **Supporting Academic Discourse**
    - **Writing In Science**
- Guided Planning
  - Unit internalization protocol
  - Chapter & Lesson-level internalization
    - Planning & pacing
- Closing
  - Reflection & additional resources
  - Survey

# Science & Literacy

## Guiding Principles for Disciplinary Literacy in Amplify Science

1. Students can acquire literacy expertise through the pursuit of science knowledge and by engaging in scientific and engineering practices.
2. Attention to disciplinary literacy instruction should begin as soon as students enter school and should continue throughout the grades.
3. Participation in a community is key to acquiring disciplinary expertise and literacy.
4. Argumentation and explanation are the central enterprises of science and, thus, these practices are the focus of reading, writing, and speaking in science.



# Accessing complex texts



# A typical Active Reading sequence

First Read

Independent,  
followed by  
paired and  
whole class  
discussion

Second Read

Reading for a  
teacher-directed  
purpose, followed  
by a paired,  
complementary  
activity

Third Read

Diving into the  
text for other,  
content-related  
purposes

Students read each article twice  
The first read is always to annotate  
(questions, connections, comments, etc.)



## Science and Engineering Practices

### 8. Obtaining, Evaluating, and Communicating Information

Subsequent reads are for a particular purpose

- To examine a specific visual representation
- To answer a question
- To find evidence to support a claim, or
- To draw conclusions across texts, etc.

# Active Reading

# Support for reading complex text

## During various reading experiences

- Variety of reading experiences:
  - Short articles, homework, evidence cards, student notebook / digital platform
- Students are expected to continue using the basic components of Active Reading during these alternate reading experiences;
  - encouraged to annotate and are
  - often provided with guiding questions



Questions?



# Supporting academic discourse



# Speaking and Listening in Amplify Science

Amplify provides many authentic opportunities, both informal & formal/structured, for speaking and listening as students refine their thinking and communicate their ideas to various audiences. Throughout the Amplify curriculum, students use discussion to construct explanations and join in oral argumentation.



# Speaking and Listening in Amplify

- There are many informal opportunities for students to engage with one another as almost every activity in Amplify is meant to be conducted with a partner or small group.
- The primary formal opportunity for student discourse is the Science Seminar for student discourse. Two others are:

---

# Goals for the Science Seminar Sequence

- Apply content knowledge (DCI's and CCC's) gained throughout the unit to address a new scientific problem
- Highlight practices: making arguments from evidence, constructing explanations, analyzing data, communicating information
- Three-dimensional assessment opportunity
- Engagement: student-centered, open-ended, novel context
- Nature of science: questions with no clear answer

# Science Seminar: Remote/Hybrid



Considering claims and evidence



Participating in the Science Seminar

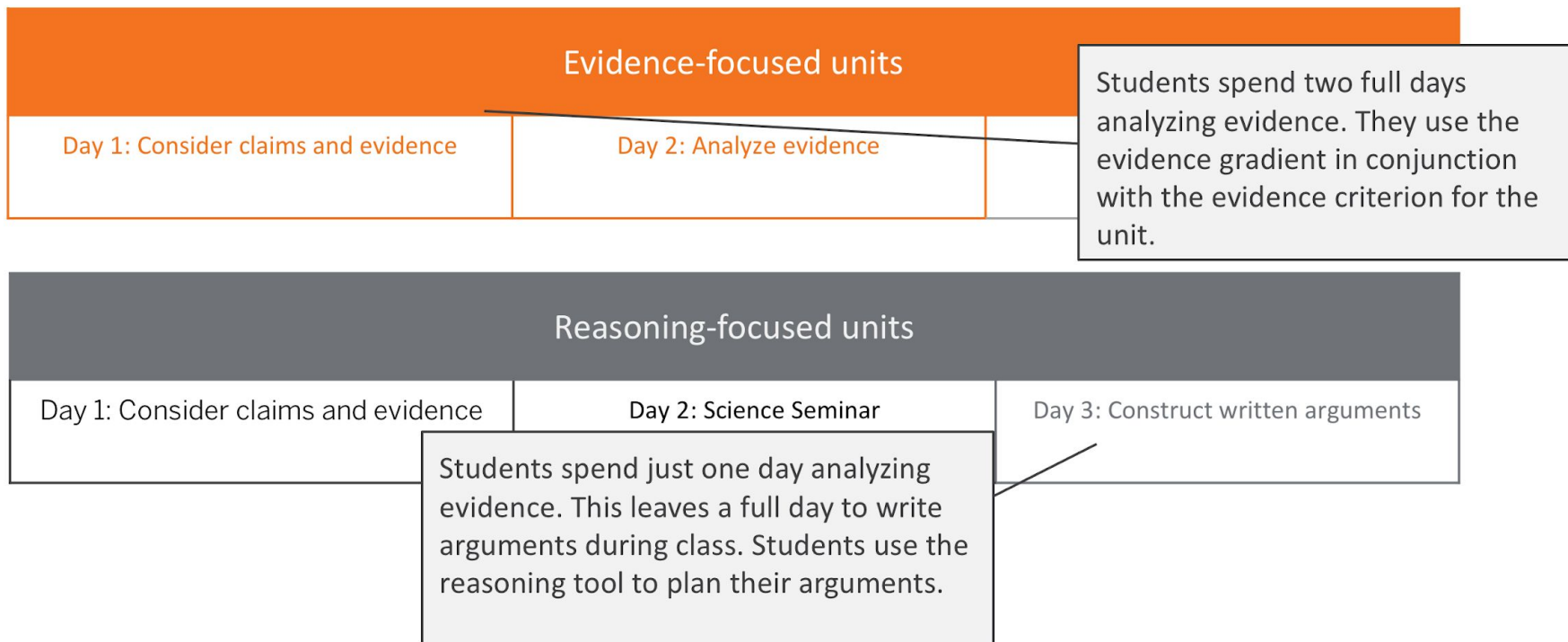


Writing an argument



# Science Seminar sequence:

## Evaluating evidence focus vs. reasoning focus



# What is academic discourse?

## Academic language

- Identify...
- What is...?
- List...
- Students use tier 1 and 2 vocabulary

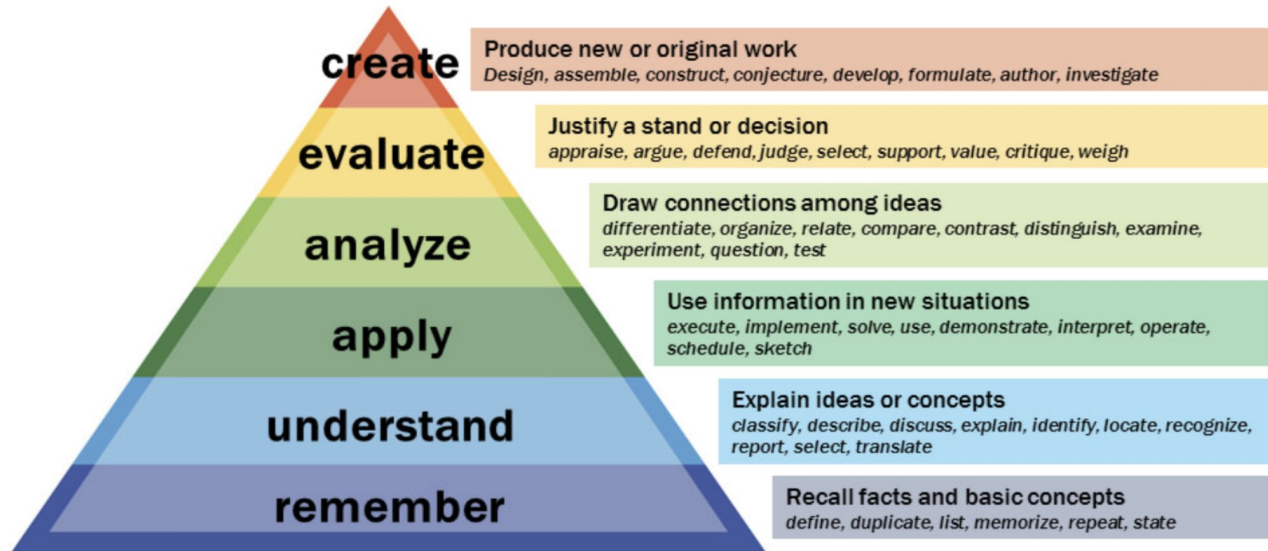
## Academic discourse

- Prove/disprove with evidence...
- What would happen if....how do you know?
- Explain how this connects to...
- Students use tier 2 & 3 vocabulary

How can strategic teacher questions throughout the lesson promote a higher level of student academic discourse?

**Questioning Strategies** - In order to engage all learners in the classroom, ensuring everyone has the opportunity to participate in discussions and do the important thinking when a question is posed, teachers use a variety of questioning strategies along Bloom's Taxonomy. Questions are pre-planned prior to the lesson and specifically aligned to the learning objectives and differentiated student needs.

## Bloom's Taxonomy





# Bloom's Taxonomy

<p><b>1</b></p> <p><b>Knowledge</b></p> <p>Identification and recall of information</p>	<p>define fill in the blank list identify</p>	<p>label locate match memorize</p>	<p>name recall spell</p>	<p>state tell underline</p>
<p><b>2</b></p> <p><b>Comprehension</b></p> <p>Organization and selection of facts and ideas</p>	<p>convert describe explain</p>	<p>interpret paraphrase put in order</p>	<p>restate retell in your own words rewrite</p>	<p>summarize trace translate</p>
<p><b>3</b></p> <p><b>Application</b></p> <p>Use of facts, rules, and principles</p>	<p>apply compute conclude construct</p>	<p>demonstrate determine draw find out</p>	<p>give an example illustrate make operate</p>	<p>show solve state a rule or principle use</p>

# Bloom's Taxonomy

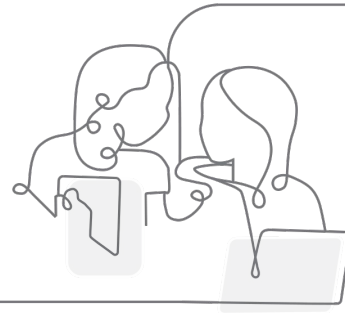
<p><b>4</b> Analysis</p> <p>Separating a whole into component parts</p>	<p>analyze categorize classify compare</p>	<p>contrast debate deduct determine the factors</p>	<p>diagram differentiate dissect distinguish</p>	<p>examine infer specify</p>
<p><b>5</b> Synthesis</p> <p>Combining ideas to form a new whole</p>	<p>change combine compose construct create design</p>	<p>find an unusual way formulate generate invent originate plan</p>	<p>predict pretend produce rearrange reconstruct reorganize</p>	<p>revise suggest suppose visualize write</p>
<p><b>6</b> Evaluation</p> <p>Developing opinions, judgements, or decisions</p>	<p>appraise choose compare conclude</p>	<p>decide defend evaluate give your opinion</p>	<p>judge justify prioritize rank</p>	<p>rate select support value</p>

## To make connections within a unit of study, ask students to:

- **Remember:** What are we figuring out in this unit? What do you already know?
- **Understand:** Describe how this lesson activity is connected to the unit/chapter/investigation question?
- **Apply:** Use the unit vocabulary to enhance your scientific explanation.
- **Analyze:** What information can you use from the Simulation to support your explanation or argument? Describe how the ideas / concepts fit together?
- **Evaluate:** Defend your claim with at least two sources of evidence. Critique the argument of a peer and provide feedback on their supporting evidence.
- **Create:** Design a model to support the solution.

# Questioning in Amplify Science

- ❑ clarify understanding
- ❑ justify claims
- ❑ verify evidence
- ❑ accessing prior knowledge
- ❑ uncovering misconceptions



# Questioning Strategies

## Open-Ended Questions to Facilitate Student Thinking & Discourse

- Questions to assess students' knowledge and skills
- Questions to promote student-to-student discourse
- Questions to guide student learning

### Questioning Strategies for Grades 6–8

#### Overview of the Role of Open-Ended Questioning

Repeated opportunities for students to listen to and speak with others are essential for promoting deep thinking and learning in science. Meaningful teacher-initiated questions create a rich context for promoting open-ended student dialogue and discussion. The *Science Framework for California Public Schools* explains that “Simply providing opportunities to talk is not enough. Effective questioning can scaffold student thinking” (*California Science Framework*, 2016, Chapter 11, p. 21). The Framework suggests that “Teacher-initiated questions are key to helping students expand their communication, reasoning, arguments, and representation of ideas in science” (*California Science Framework*, 2016, Chapter 11, p. 21). The types of questions that teachers pose are instrumental in supporting student understanding. The Framework calls for more open-ended teacher questioning that “prompts and facilitates students’ discourse and thinking” and less teacher questioning that prompts “students to seek a confirmatory right answer” (*California Science Framework*, 2016, Chapter 11, p. 6).

The Amplify Science Teacher’s Guide is infused with opportunities for students to discuss their developing ideas in response to open-ended prompts. Questions to promote student thinking and discussion are purposefully built into the Teacher’s Guide instructional steps and Teacher Support notes that surround all our hands-on and reading activities. In addition, all units include discourse routines (e.g., Shared Listening, Think-Draw-Pair-Share, Write and Share, Word Relationships) that provide opportunities for students to use focal unit vocabulary as they think and talk with partners and the class about their understanding of key science content and practices. Many of the On-the-Fly Assessment suggestions provided throughout each unit offer open-ended follow-up questions that can be used to probe student thinking and formatively assess student understanding of the content. In addition, each unit includes multiple opportunities for students to respond to open-ended questions through additional modalities (e.g., in writing, with diagrams, through a kinesthetic model).

While the prompts embedded in each of the opportunities mentioned above provide fertile ground for student discussion, continued use of flexible, open-ended questions is invaluable for assessing students’ knowledge and skills, promoting student-to-student discourse, and guiding student learning. A collection of grade-appropriate questions follows that can be used for these purposes. You will also find a list of activity types included within the Amplify Science curriculum that are particularly conducive to the use of these questions. You may choose to print out these questions and activity types for reference throughout your instruction.

© The Regents of the University of California. All rights reserved.

© The Regents of the University of California. All rights reserved.

© The Regents of the University of California. All rights reserved.

# The Hallmarks of Advanced Literacy: A Common Set of Instructional Practices



## Hallmark 2 of Advanced Literacies Instruction: Classroom Discussion

...fostering engagement by focusing on building student autonomy and collaboration produces greater gains in achievement and we know that talk-based learning tasks and projects can do exactly this—when there is choice, roles, and collaboration involved, they are a great way to promote students' sense of autonomy as learners.

Nonie K. Lesaux, PhD & Emily Phillips Galloway, EdD



Questions?

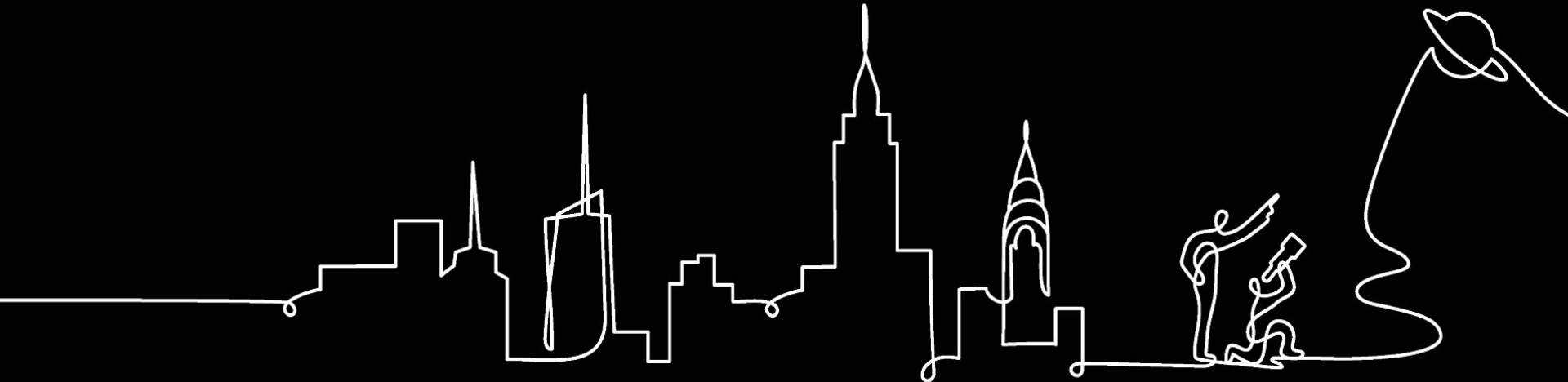


# Writing in Science



# Writing in Amplify Science

Purposeful, communicative writing is an integral part of the Amplify Science curriculum. Students write daily for many different purposes.



# Why do students write in Amplify Science?

- To activate background knowledge
- To reflect on understanding
- To communicate
  - To explain
  - To persuade
- To record data / observations
- To have a record of your own thinking

“Small writes” prompt students to **synthesize** new understandings with existing conceptual knowledge.

Examples: daily warm-ups & evidence card annotations



As they gather evidence, students engage in writing and discussion. They make sense of evidence they gather through these through small writes.

Writing is a **key part of the multimodal approach** as students figure out a phenomenon.



# Example

Writing across a chapter: different purposes for writing in *Oceans, Atmosphere and Climate* Chapter 2

Lesson 2.1	Lesson 2.2	Lesson 2.3
<p>Warm-up</p> <p>Annotate article (first read)</p>	<p>Warm-up</p> <p>Annotate article (second read)</p> <p>Provide evidence to support a claim</p>	<p>Warm-up</p> <p>Record data during hands-on investigation</p> <p>Explain results</p> <p>Record data during sim</p> <p>Explain sim data</p>
<p>Reflect on reading</p>	<p>Record sim observ.</p> <p>Explain current model</p>	<p>Explain sim data</p>

## KEY

Record data /  
observations

Reflect on  
understanding or  
activate background  
knowledge

Annotate

Explain

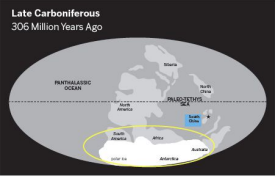
Persuade

# The “big write” : Science Seminar final written argument

Students’ argumentation writing is scaffolded in many significant ways. For example, for units where Reasoning is a focus, the Reasoning Tool was conceived of as a scaffold for supporting students in thinking about and identifying the reasoning that would be needed to make a convincing argument.



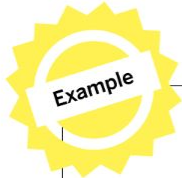
# Reasoning Tool

Evidence	This matters because . . . (How does this evidence support the claim?)	Therefore, . . . (claim)
<p><i>Evidence card D</i></p> <div data-bbox="104 416 625 683" style="border: 1px dashed black; padding: 5px;"><p>Evidence Card D: Polar Ice</p><p>Late Carboniferous 306 Million Years Ago</p><p>During the late Carboniferous period, the polar ice cap was larger than it is today.</p></div>	<p>The current that flowed from the South pole past South China would have gotten really cold. It would have been colder than the air and the air would have transferred a lot of energy and cooled down.</p>	<p>South China was cooler than it is today.</p>



# Using the Reasoning Tool to Support Your Claim

- Circle your strongest piece of evidence.
- Draw an X over those pieces of evidence that you do not plan to use in your argument.
- Draw an arrow to connect pieces of evidence that go together.



Evidence	This matters because . . . (How does this evidence support the claim?)	Therefore, . . . (claim)
Sample Evidence Card A	Your ideas about how the evidence supports the claim	Your claim
<del>Sample Evidence Card B</del>	<del>Your ideas about how the evidence supports the claim</del>	
Sample Evidence Card C	Your ideas about how the evidence supports the claim	

# Scientific Argument Sentence Starters

An additional scaffold

## Describing evidence:

The evidence that supports my claim is...

My first piece of evidence is...

Another piece of evidence shows that...

## Describing how evidence supports a claim:

If \_\_\_\_\_, then...

This change caused...

The effect of this change was...

This is important because...

Since...

Based on the evidence, I conclude that...

This claim is stronger because...

# Using the Reasoning Tool to Write an Argument

## State your claim.

I support Claim \_\_ , which states that South China during the late Carboniferous was . . .

## Describe the evidence.

In the late Carboniferous, South China . . . (Evidence Card \_\_ ). Another evidence card shows . . .

## Explain how the evidence supports the claim.

Together, this evidence shows . . .

Some of the most challenging aspects of scientific argumentation are providing **sufficient high quality evidence** and using **reasoning** to make clear the connections between pieces of evidence and the claim.

The science seminar sequence provides **scaffolds** for these challenges.



# Rubrics for Assessing Students' Final Written Arguments

## Three-dimensional

- Rubric 1: Assessing Students' Understanding of **Science Concepts (DCIs)** } summative
- Rubric 2: Assessing Students' Understanding of the **Crosscutting Concept of Cause and Effect** } summative
- Rubric 3: Assessing Students' Performance of the **Practice of Constructing Scientific Arguments** } formative

# Rubric 3: Assessing Students' Performance of the Practice of Constructing Scientific Arguments

- Formative rubric
- Provides suggestions for feedback
- Possible responses supporting each claim

## Criteria for a strong written argument

Takes a stance

Explanatory

Justified by the reasoned use of evidence

Employs high-quality information

Clear and well-organized

The Rubrics for Assessing Students' Final Written Arguments provide guidance you can use as you review and provide feedback on students' writing **throughout the unit.**



# Model activity

As you observe activity, focus on your successes, challenges, & next steps from this area of self-inventory



## Self-inventory: choosing an area of focus for planning

Directions: Use the statements to help guide your areas of strength & support for guided planning.

Statements	I don't	I try	I do
1. I can utilize <b>digital resources</b> to enhance instruction.			
2. I can administer <b>assessments embedded</b> within instruction.			
3. I can utilize <b>data</b> gathered from <b>formative assessments</b> to guide my instruction.			
4. I can adjust my instruction to respond to the unique <b>cultural &amp; linguistic</b> needs, strengths, and backgrounds of my students.			
5. I can support my students in deconstructing <b>complex scientific texts</b> in order to bolster scientific understanding			
6. I can implement <b>discourse routines</b> in order to support students developing scientific understanding.			
7. I can adjust <b>questioning strategies</b> to support students' scientific inquiry.			
8. I can scaffold students writing of <b>scientific arguments</b> & explanations.			



# Evolutionary History: Advising a Paleontology Museum

The problem students work to solve

Is this Mystery Fossil more closely related to wolves or to whales?

Here's what students need to do next...

reflection opportunities

Key concepts

Application of key concepts to the problem

Explanation that students can make to answer the Chapter 1 Question

Here's what students have done so far...

Where in the museum does this new fossil belong?

Why do different species share similar structures?

- Examine body structures of different species and compare species based on similarities (1.2)
- Read "How You are Like a Blue Whale" (1.3)
- Revisit "How You are Like a Blue Whale" (1.4)
- Use the Sim to find two species that share a common body structure on an evolutionary tree (1.4)



- Species inherit their body structures from their ancestor populations. (1.4)
- Body structures that are shared between two species are evidence that these two species inherited the shared structures from a common ancestor population. (1.4)

- Discuss claims about where in the museum the mystery fossil belongs based on new evidence (1.5)
- Analyze structural similarities among wolves, whales, and the mystery fossil and consider what a body structures a common ancestor might have had (1.5)
- Use the Modeling Tool to show a likely common ancestor based on structures shared between two model species (1.5)

The Mystery Fossil should be placed with either the whales in the Whale exhibit or the wolves in the Carnivore exhibit. This is because the fossil shares many similar structures with both wolves and whales. Traits, such as body structures, are passed down from parents to offspring. When two species have many similar structures, this is evidence that both species descended from a common ancestor population with those structures. The Mystery Fossil likely shares a common ancestor population with both wolves and whales.

An illustration featuring three animals against a dark green background. At the top is a large orca (killer whale) with its characteristic black and white markings. Below it is a crocodile, shown in profile, with its mouth slightly open, revealing sharp teeth. In the foreground, a wolf is depicted looking towards the viewer. The style is a flat, stylized illustration with bold outlines and a limited color palette.

**Evolutionary History**

**Lesson 1.4: Interpreting  
Evolutionary Trees**

# Activity 1

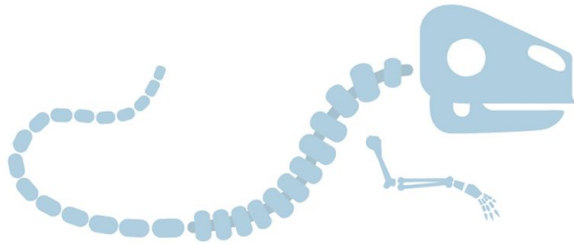
# Warm-Up



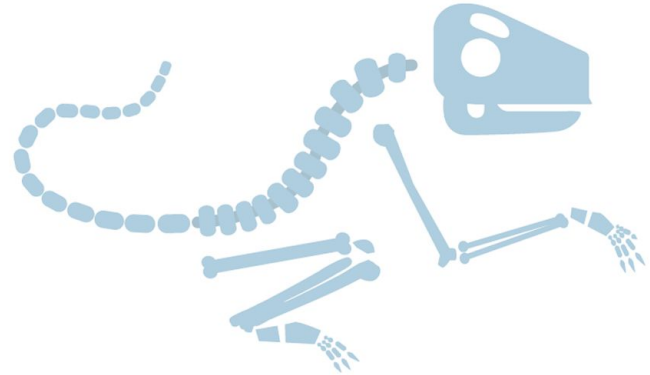
# Warm-Up

---

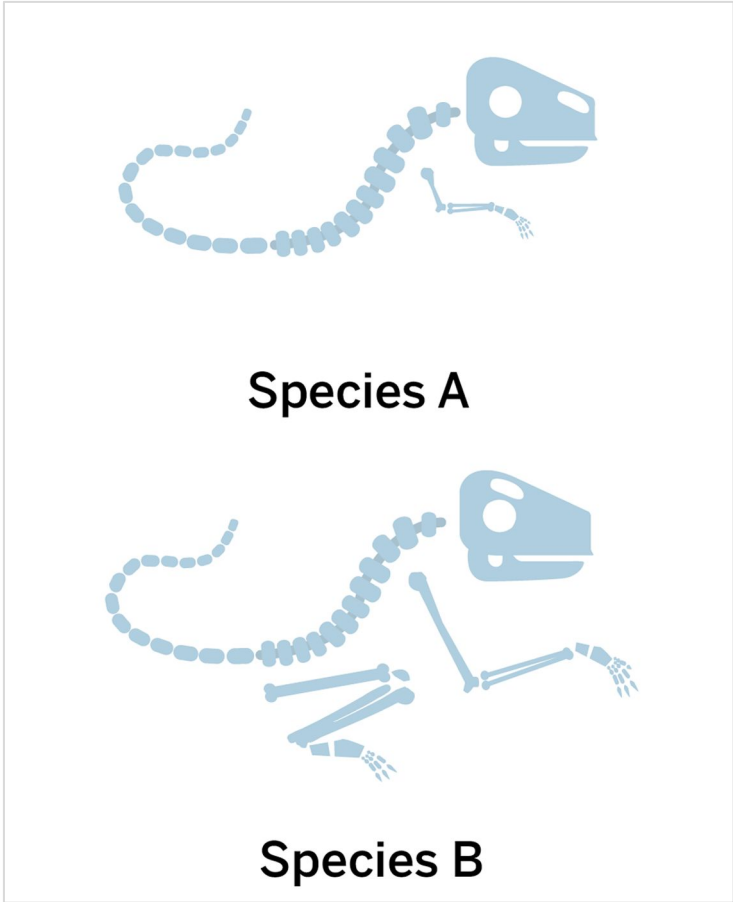
## Comparing Body Structures



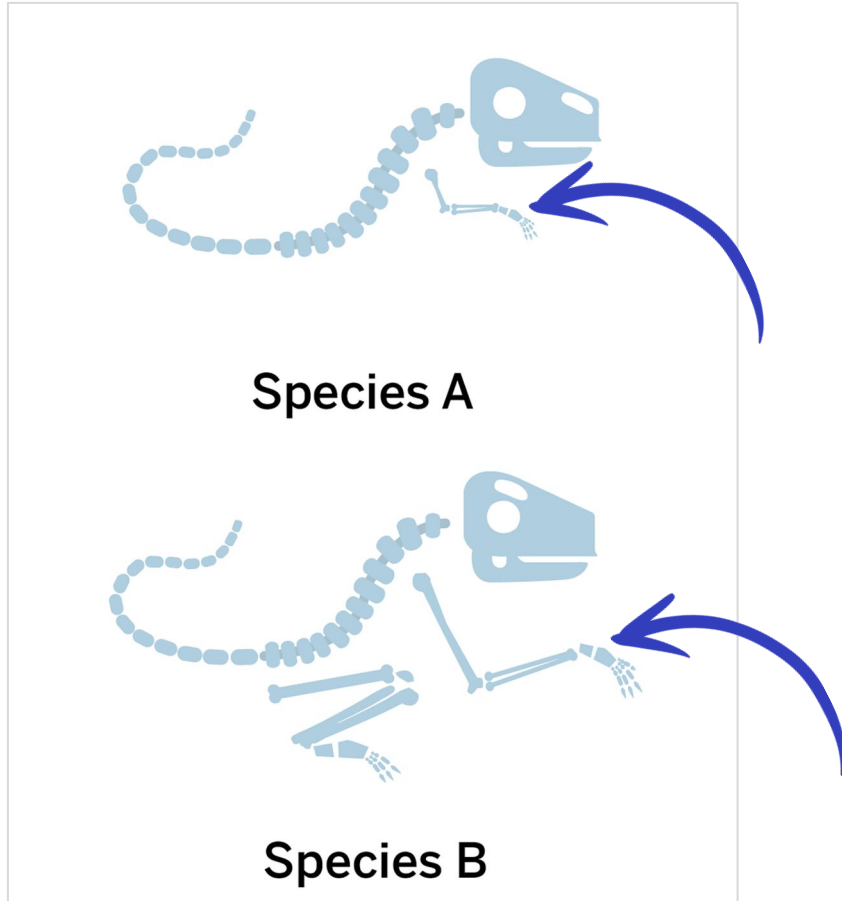
**Species A**



**Species B**



Let's discuss the **shared structures** these two imaginary species both have.



The front limbs have the same basic arrangement of bones, so they are a **shared structure**.

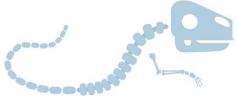
Scientists look for shared structures to decide if species are **related**.

Warm-Up

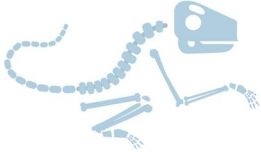
---

Common Ancestor Poll

Use your ideas from the Warm-Up to answer the following poll.



Species A



Species B

Do you think the two species from the Warm-Up have any ancestors in common?

yes

no

Next, we'll have a class poll.



Decide whether you think Species A and Species B have any **ancestors** in common.

Let's discuss the results of our poll.



Do you think the two species have any **ancestors** in common?

Explain your thinking.





## Activity 2

Second Read: “How You  
Are Like a Blue Whale”



## Vocabulary



**descendant  
species**

a more recent species that evolved from an ancestor population


## Vocabulary



**common ancestor  
population**

an older population from which two or more newer species  
descended

How You Are Like a Blue Whale



Blue whales are mammals and must come to the ocean's surface to breathe. NOAA

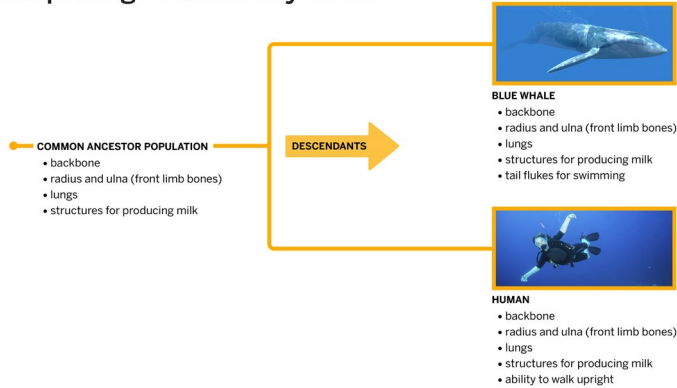
If anybody tells you blue whales are the largest fish on Earth, they don't know what they're talking about. Blue whales may live in the ocean with fish, but they aren't fish at all. There are many important differences between the [body structures](#) of whales and fish. Fish are covered in shiny scales, while whales have smooth skin. Fish lay eggs, while whales give birth to live young. Fish fins are made of many tiny bones, but whale flippers are supported by just a few bones. In fact, whales are mammals, just like dogs, elephants, and humans. Blue whales share many more body structures with you than they do with fish!

Just as whales and fish look similar but are actually very different, humans and blue whales look different but have a surprising amount in common. Mother whales produce milk for their babies, just as human mothers do. Like humans, whales have lungs instead of gills. Whales can't breathe underwater: they must come to the surface to breathe. And if you look at the bones in a human arm and the bones in a blue whale flipper, you can see that they fit together in similar ways. Blue whales even have leg bones, just like humans. However, in whales, these bones are so tiny that the skin, fat, and muscles of the whale's body hide them. You might not call them real legs, but they are leftovers from a time when whales' [ancestors](#) had legs and walked on land.

To figure out how two [species](#) are connected, scientists can study the skeletons of both species. Scientists studying present-day animals can use x-rays of living animals or sets of bones from animals that have died recently. [Paleontologists](#) studying species that are

Today, you will **reread** part of the article "How You Are Like a Blue Whale" to learn more about common ancestors.

## Interpreting Evolutionary Trees



Humans and blue whales have many shared structures. Based on this information, paleontologists know that these species descended from a common ancestor population that also had those body structures.

You will only reread the information in the **evolutionary tree** diagram, focusing on shared structures and how these can provide evidence about common ancestors.

Second Read: "How You Are Like a Blue Whale"

Rereading "How You Are Like a Blue Whale"

Guiding Questions

1. What are the descendants in this diagram?
2. What body structures did the common ancestor have?
3. What are the body structures that both descendants share with this common ancestor?

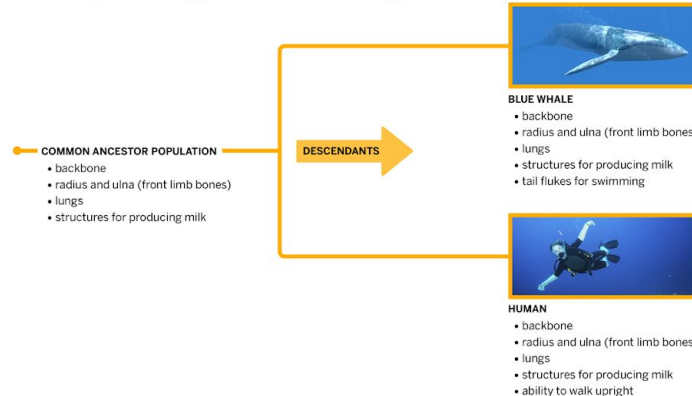
As you reread the diagram, you'll answer some **guiding questions**.

## Second Read: “How You Are Like a Blue Whale”

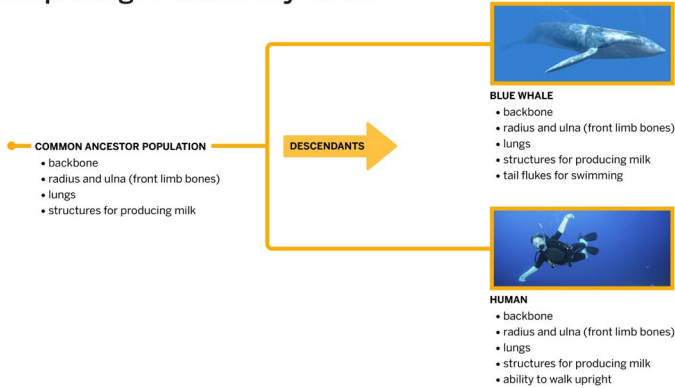
### Rereading “How You Are Like a Blue Whale”

Reread the small excerpt below from the article “How You Are Like a Blue Whale” and answer the guiding questions. As you read, think about this question: *Why do different species share similar structures?*

#### Interpreting Evolutionary Trees



### Interpreting Evolutionary Trees



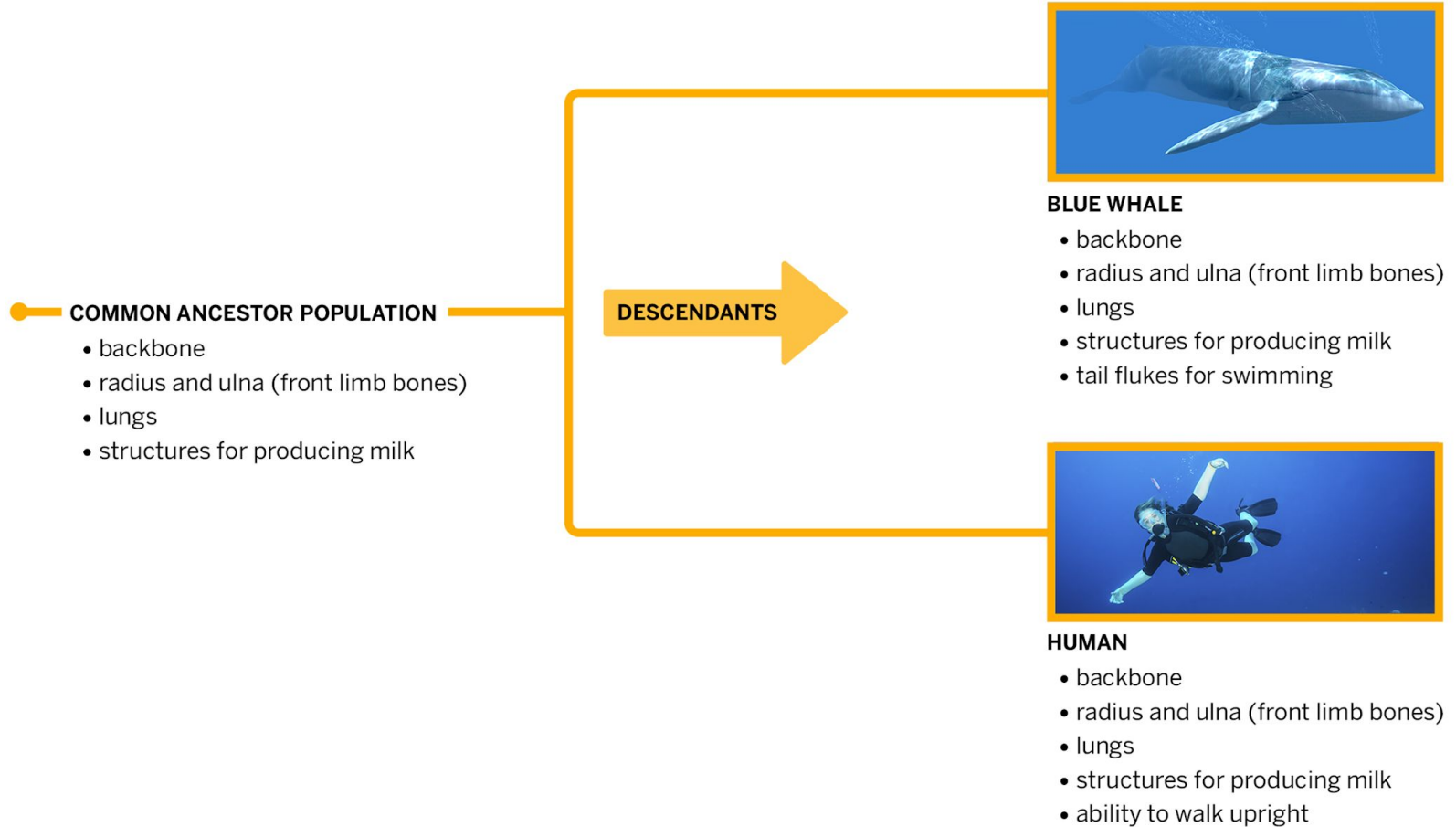
Humans and blue whales have many shared structures. Based on this information, paleontologists know that these species descended from a common ancestor population that also had those body structures.

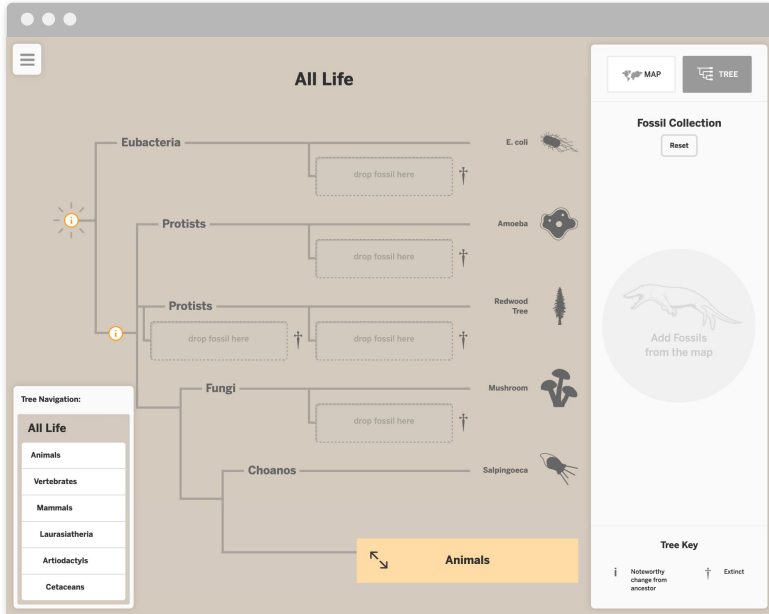
Next, we'll interpret the evolutionary tree diagram as a class.

I'll project a larger version of the diagram for our discussion.



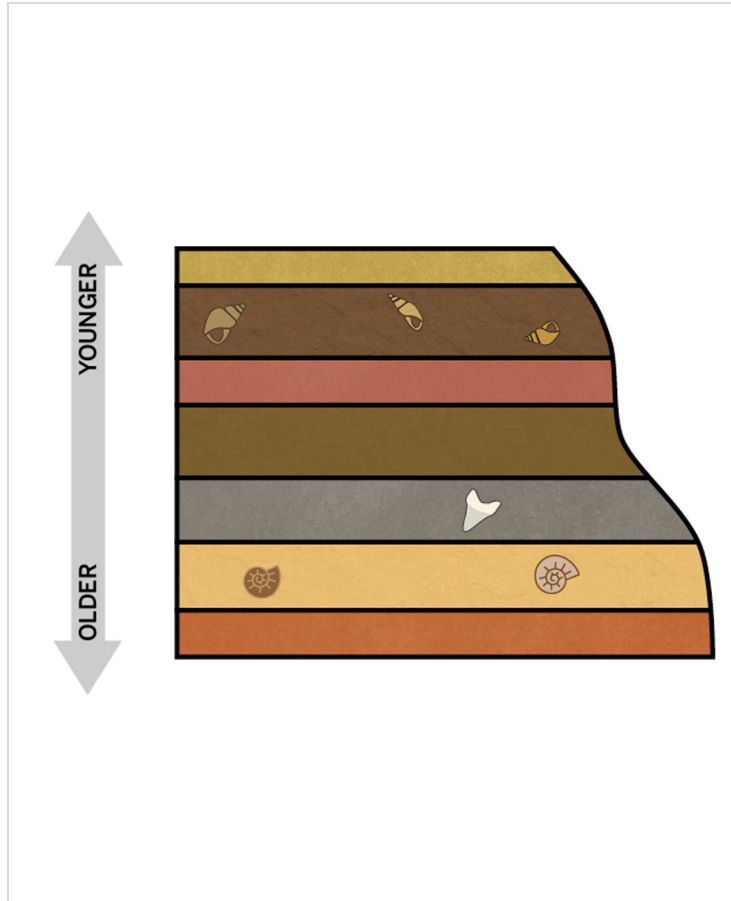
# Interpreting Evolutionary Trees





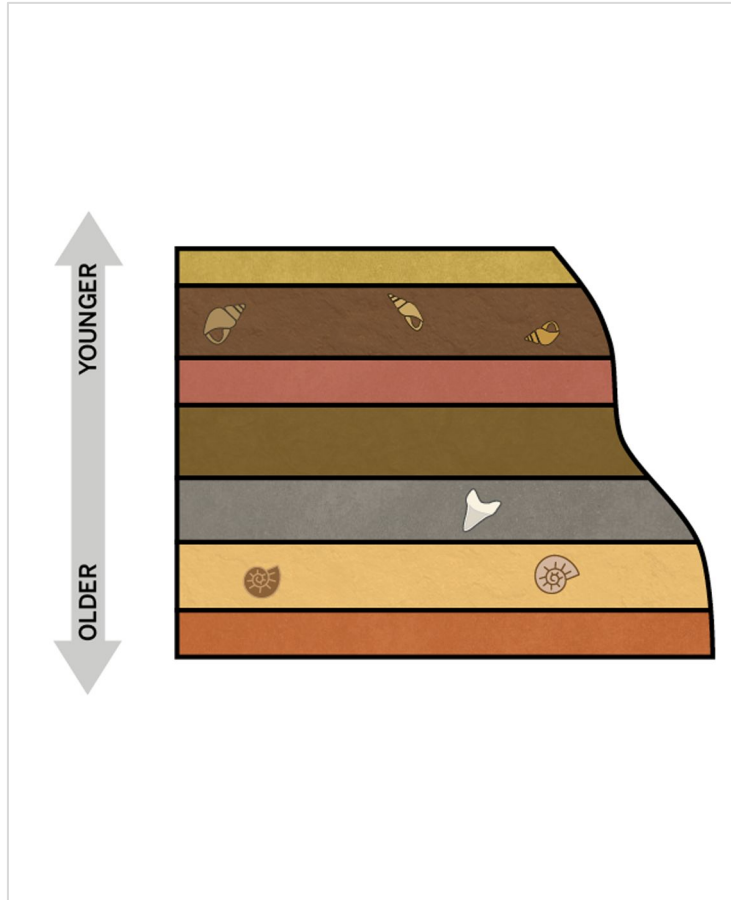
The evolutionary trees in our Sim are more complex.

The Sim includes many species, some that are alive today and others that are extinct.



Scientists know about the extinct species in the Sim from **fossil evidence** found in layers of rock.

Using that evidence, the species were placed in chronological order.



Remember that sedimentary rock layers form with younger layers on top.



Which fossils in this diagram are **oldest**, and which are **youngest**?

Explain **how you know**.

# Reflect & discuss

## How does this model activity demonstrate & offer opportunities to

- ❑ Support students in deconstructing complex scientific texts in order to bolster scientific understanding?
- ❑ Implement discourse routines in order to support students developing scientific understanding?
- ❑ Adjust questioning strategies to support students' scientific inquiry?
- ❑ Scaffold students' writing of scientific arguments & explanations?



# Collaborative reflection: science & literacy

On the slides, enter:

- ❑ Successes
- ❑ Tools & strategies you found helpful
- ❑ Challenges
- ❑ Your next steps in this area

Science & literacy	
Successes	Tools/strategies you found helpful

Consider statements #5-8 on your self-inventory

challenges in this area



Questions?

# BREAK (15 minutes)







Questions?



# Plan for the day

- Framing the day
  - Welcome and introductions
  - Anticipatory activity
- Targeted Implementation Reflection
  - Digitally-enhanced learning
    - Remote/Hybrid Resources Utilization
  - Reaching diverse learners
    - Utilizing Embedded Assessments
    - Culturally Linguistically Responsive Teaching
  - Science & Literacy
    - Accessing Complex Texts
    - Supporting Academic Discourse
    - Writing In Science
- **Guided Planning**
  - **Unit internalization protocol**
  - **Chapter & Lesson-level internalization**
    - **Planning & pacing**
- Closing
  - Reflection & additional resources
  - Survey

# Guided Planning materials

- Internalization guide (interactive pdf)
- Unit Internalization visual
  - Digital visual
    - Navigate to Jamboard to create a digital visual
  - Physical visual
    - Gather paper, tape, post-its (different colors if possible)

**Unit Level Planning & Internalization**

Unit Title: \_\_\_\_\_

**Part 1: Overview**  
 (Resources: Unit Overview, Teacher's Guide, Coherence Flowchart, Unit Map, 3-D Statements)

What is the phenomenon/real-world problem students are investigating in your unit? \_\_\_\_\_ Student Role: \_\_\_\_\_

Unit Question: \_\_\_\_\_ Relationship between Question: \_\_\_\_\_

By the end of the unit, students figure out... \_\_\_\_\_

How do students engage with three-dimensional learning to figure out the phenomenon/real-world problem?

**Guided Planning: Unit Internalization**

**Energy Conversions**

## Unit Level Planning & Internalization

Unit Title:

### Part 1: Overview

[Resources: Unit Overview, Teacher's Guide, Coherence Flowchart, Unit Map, 3-D Statements]

What is the phenomenon/real-world problem students are investigating in your unit?

Student Role:

Page 5



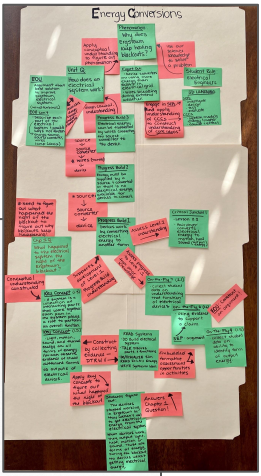
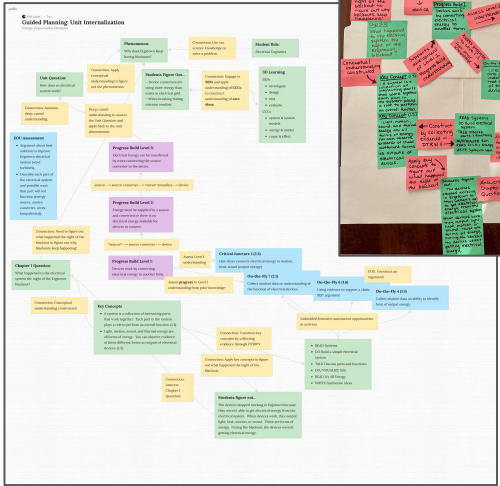
### Suggested resources:

- Unit Guide resources → **Unit Overview** → “What’s in this unit?”
- Navigate to the **lesson where the phenomenon is introduced** to view how it is introduced.
  - K-5: Phenomenon is usually introduced in Lesson 1.1 or Lesson 1.2
  - 6-8: Phenomenon is usually introduced in Lesson 1.2 in Core units.
- Unit Guide resources → Printable Resources → **Coherence Flowcharts**
  - View how the “problem students work to solve” is summarized.

# Creating your visual!

## How is the unit designed to support students to figuring out the unit phenomenon?

- Add to your visual:
  - 1. Phenomenon or problem students are working to solve
  - 2. Student role



## Unit Level Planning & Internalization

Unit Title:

### Part 1: Overview

[Resources: Unit Overview, Teacher's Guide, Coherence Flowchart, Unit Map, 3-D Statements]

What is the phenomenon/real-world problem students are investigating in your unit?

Student Role:

Unit Question:

Relationship between the Unit Phenomenon and Unit Question:

### Suggested resources:

- Unit Guide resources → **Lesson Overview Compilation**
- Unit Guide resources → Printable Resources → **Print Materials (11x17)**

# Creating your visual!

How is the unit designed to support students to figuring out the unit phenomenon?

- Add to your visual:
  - 1. Unit Question
  - 2. Relationship between the Unit Phenomenon and the Unit Question



## Unit Level Planning & Internalization

Unit Title:

### Part 1: Overview

[Resources: Unit Overview, Teacher's Guide, Coherence Flowchart, Unit Map, 3-D Statements]

What is the phenomenon/real-world problem students are investigating in your unit?

Student Role:

Unit Question:

Relationship between the Unit Phenomenon and Unit Question:

By the end of the unit, students figure out...

How do students engage with three-dimensional learning to figure out the phenomenon/real-world problem in your unit?



Planning for the Unit

Unit Overview

Unit Map

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Books in This Unit

Apps in This Unit

Flextensions in This Unit

Printable Resources

Coherence Flowcharts

Copy...



## 10-word summary

- In 10 words or less, what do students figure out at the end of the unit?



## Unit Level Planning & Internalization

Unit Title:

### Part 1: Overview

[Resources: Unit Overview, Teacher's Guide, Coherence Flowchart, Unit Map, 3-D Statements]

What is the phenomenon/real-world problem students are investigating in your unit?

Student Role:

Unit Question:

Relationship between the Unit Phenomenon and Unit Question:

By the end of the unit, students figure out...

How do students engage with three-dimensional learning to figure out the phenomenon/real-world problem in your unit?

### Planning for the Unit









<a href="#">Unit Overview</a>	▼
<a href="#">Unit Map</a>	▼
<a href="#">Progress Build</a>	▼
<a href="#">Getting Ready to Teach</a>	▼
<a href="#">Materials and Preparation</a>	▼
<a href="#">Science Background</a>	▼
<a href="#">Standards at a Glance</a>	▼

### Teacher References

<a href="#">Lesson Overview Compilation</a>	▼
<a href="#">Standards and Goals</a>	▼
<a href="#">3-D Statements</a>	▼
<a href="#">Assessment System</a>	▼
<a href="#">Embedded Formative Assessments</a>	▼
<a href="#">Books in This Unit</a>	▼
<a href="#">Apps in This Unit</a>	▼
<a href="#">Flextensions in This Unit</a>	▼



### Printable Resources

-  [Coherence Flowcharts](#)
-  [Copymaster Compilation](#)
-  [Flextension Compilation](#)
-  [Investigation Notebook](#)
-  [Multi-Language Glossary](#)
-  [NGSS Information for Parents and Guardians](#)
-  [Print Materials \(8.5" x 11"\)](#)
-  [Print Materials \(11" x 17"\)](#)

### Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

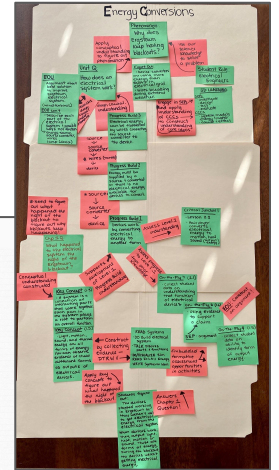
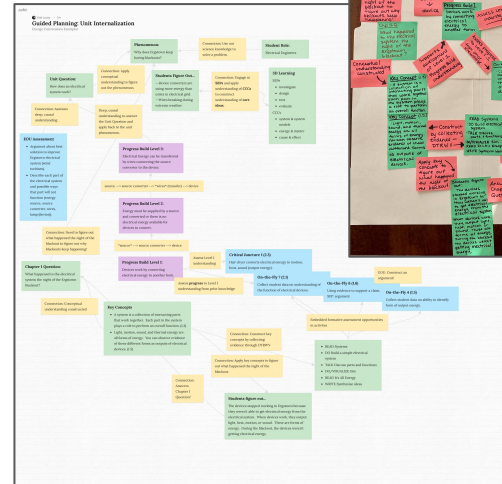
[Offline Guide](#)



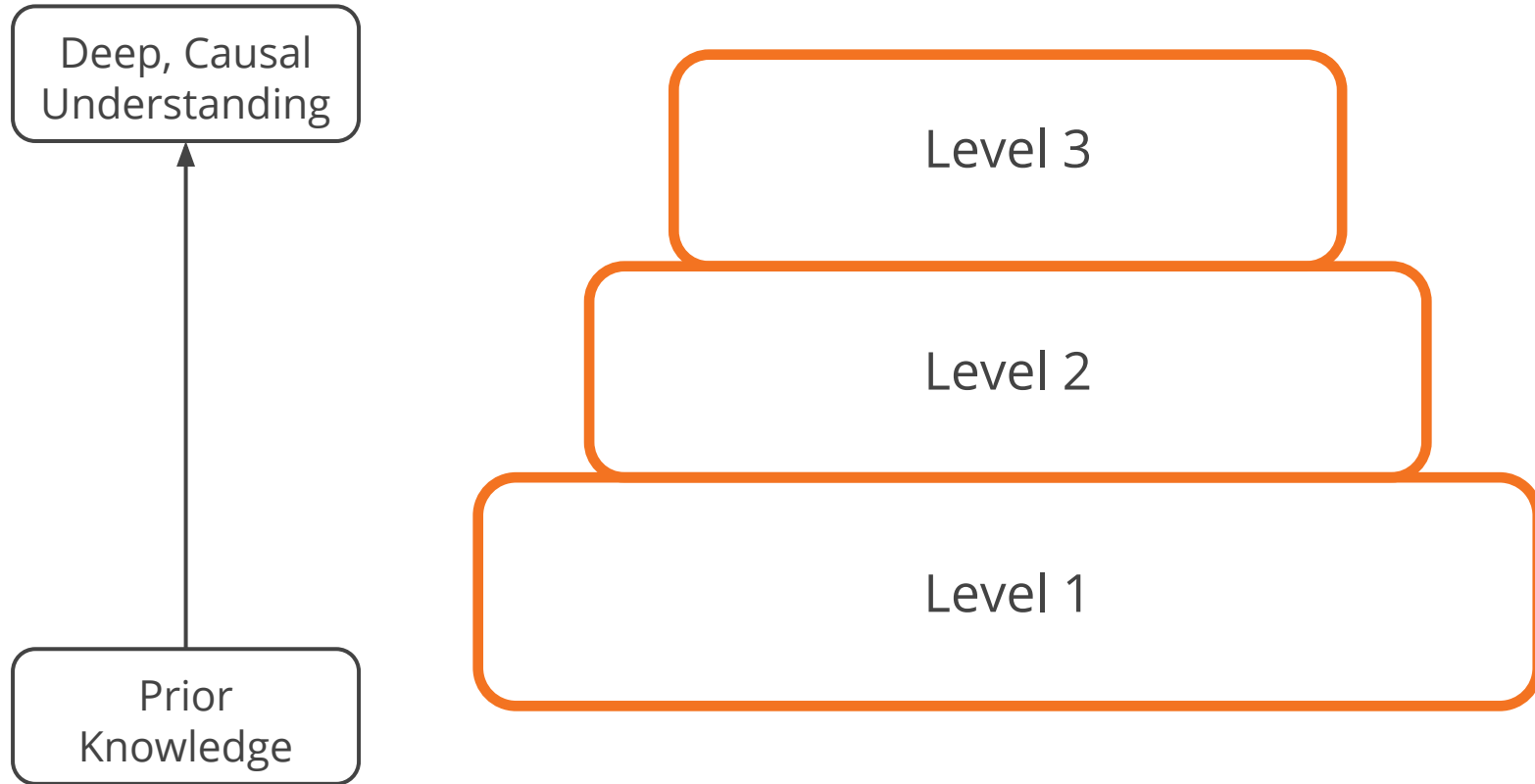
# Creating your visual!

## How is the unit designed to support students to figuring out the unit phenomenon?

- Add to your visual:
  - 1. 10-word summary of what students figure out at the end of the unit
  - 2. How students engage in 3-D learning to figure out the phenomenon
  - 3. Add connections that explain the relationship between what students figure out and:
    - 3-D learning
    - The Unit Question
    - Anchor phenomenon



# Progress Build: A unit-specific learning progression



Planning for the Unit

- Unit Overview
- Unit Map
- Progress Build**
- Getting Ready to Teach
- Materials and Preparation
- Science Background
- Standards at a Glance



Teacher References

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

Printable Resources

- Coherence Flowcharts
- Copymaster Compilation
- Flextension Compilation
- Investigation Notebook
- Multi-Language Glossary
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")
- Print Materials (11" x 17")

Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

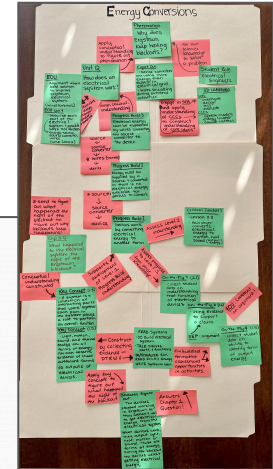
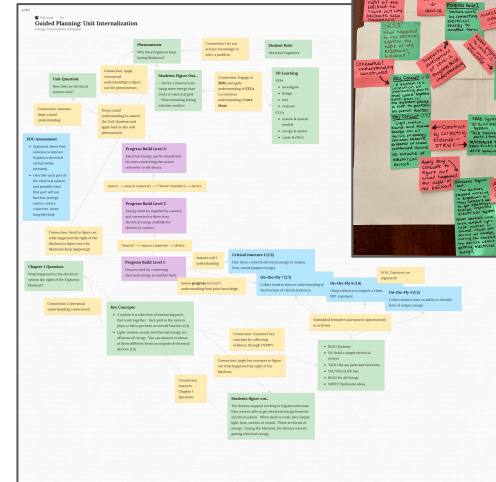
Offline Guide



# Creating your visual!

How is the unit designed to support students to figuring out the unit phenomenon?

- Add to your visual:
  - 1. Progress Build levels
  - 2. Connections between levels



## Part 2: Progress Build Analysis

[Resource: Progress Build]

### Think-Type-Share

- Which science ideas introduced in the Progress Build do you feel confident about?
- Which science ideas would you want to do more self-study to build confidence?

dded  
ose  
d

Level 4\*:

How does a Level 3 (or Level 4) understanding connect to the Unit Question? To the anchor phenomenon?

Level 3:

What new ideas are added in Level 3? How do those new ideas build on and connect to Level 2?

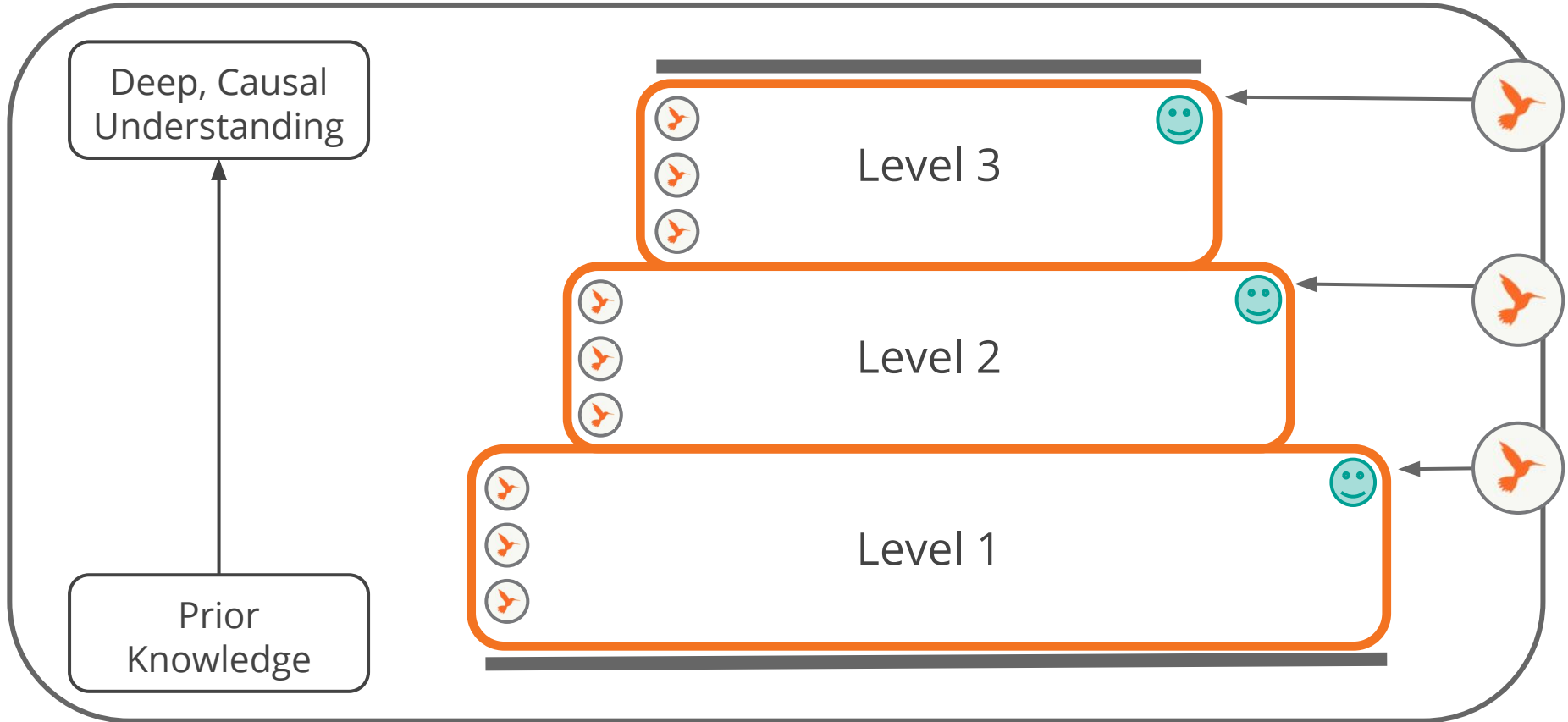
Level 2:

:

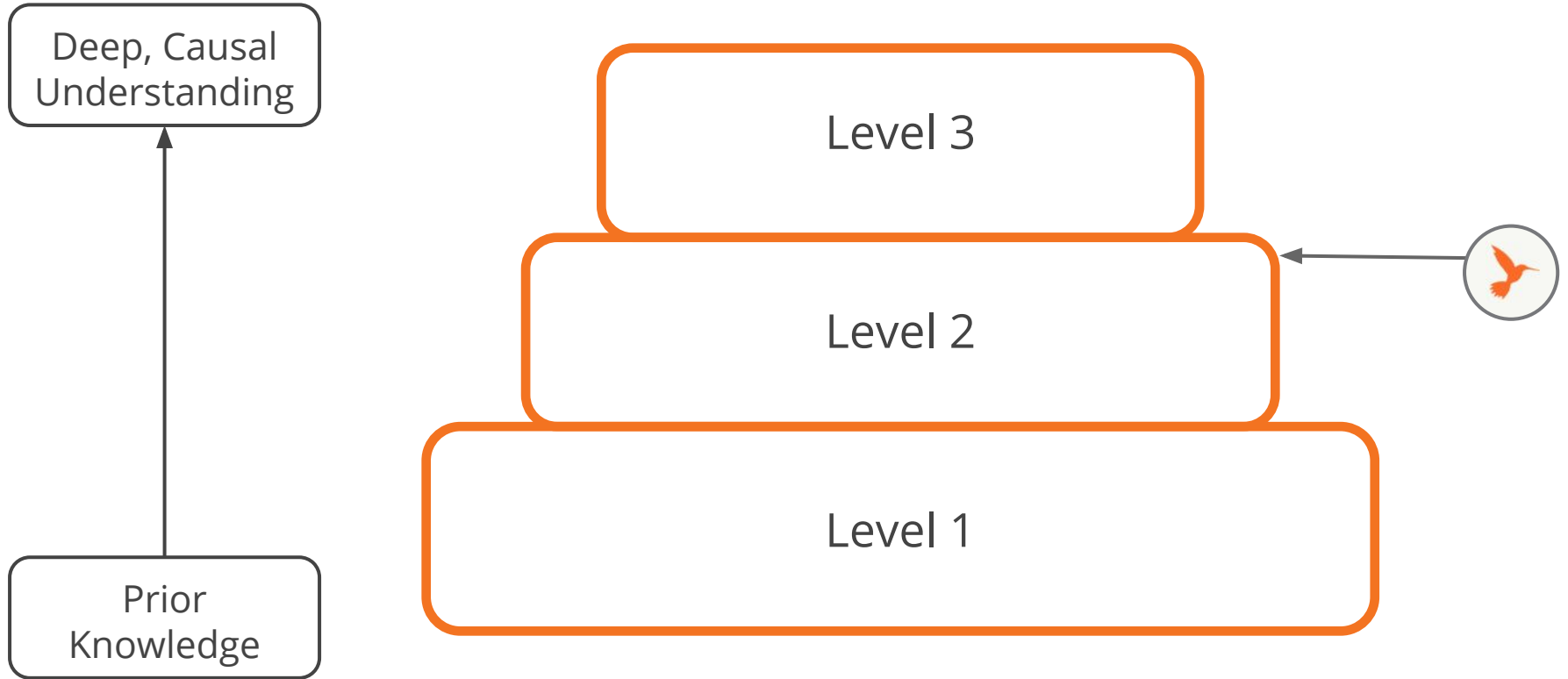
ny some Elementary units have a 4th level, check your Progress Build Unit Guide document)



# Assessment System



# 6-8 Critical Juncture Assessment



#### Part 4: Critical Juncture Analysis

[Resources: Assessment System, Embedded Formative Assessments, Progress Build, Coherence Flowcharts, Digital or Print Teacher's Guide]

Critical Juncture Assessment located:

Assessment Focus:

Take the Critical Juncture Assessment (K-5: Part 1 only if your assessment has multiple parts; 6-8: Open response questions only). Record your exemplar response(s) to the written (or oral for grades K-1) prompt(s) and any notes/annotations below:

### Planning for the Unit

Unit Overview



Unit Map



Progress Build



Getting Ready to Teach



Materials and Preparation



Science Background



Standards at a Glance



### Teacher References

Lesson Overview Compilation



Standards and Goals



3-D Statements



Assessment System



Embedded Formative Assessments



Books in This Unit



Apps in This Unit



Flextensions in This Unit



### Printable Resources



Coherence Flowcharts



Copymaster Compilation



Flextension Compilation



Investigation Notebook



Multi-Language Glossary



NGSS Information for Parents and Guardians



Print Materials (8.5" x 11")



Print Materials (11" x 17")

### Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide



What is the relationship between conceptual understanding described in the Progress Build and the Critical Juncture Assessment?

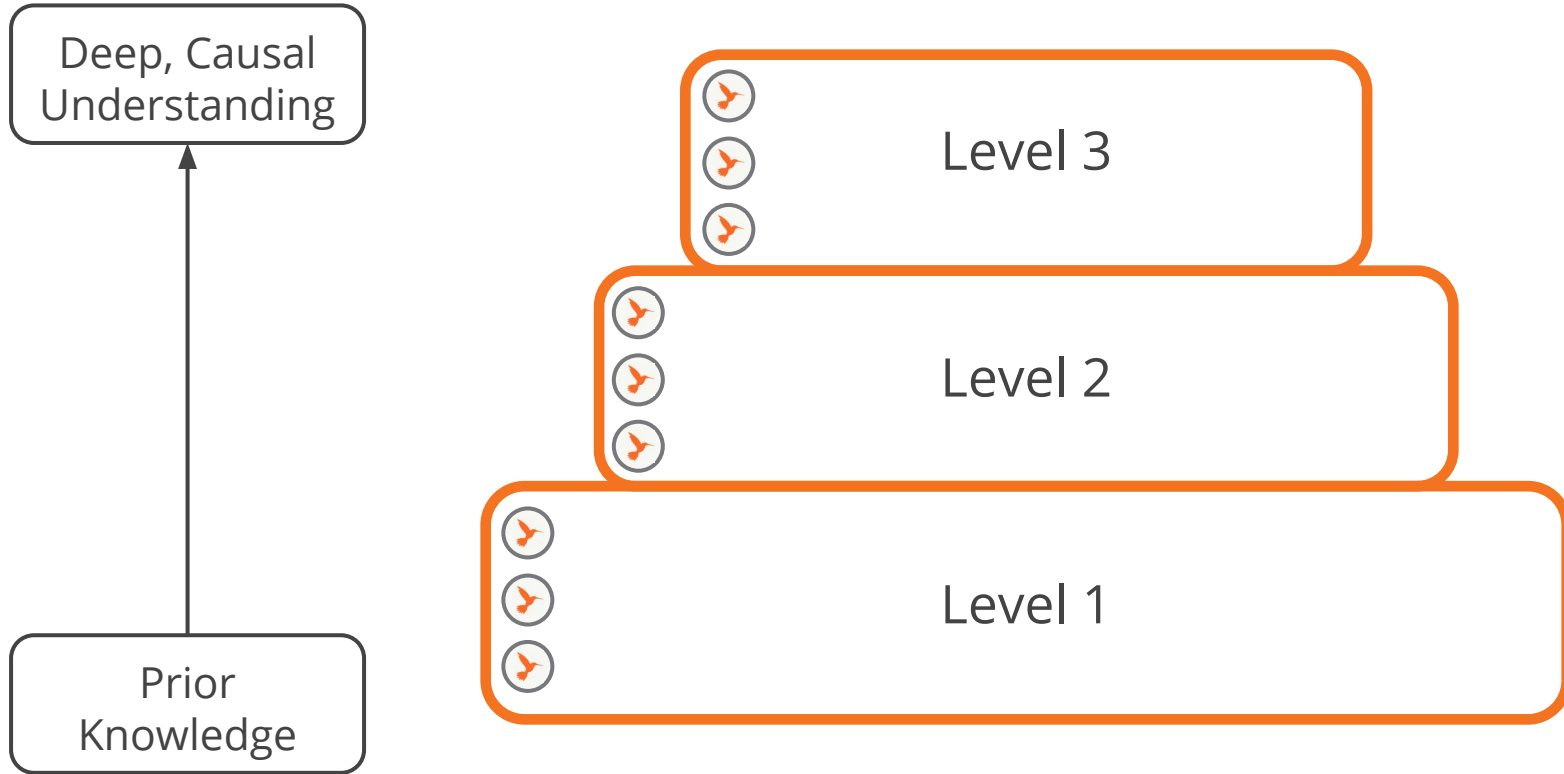
When during the lessons leading up to the Critical Juncture Assessment are there critical opportunities to collect data on student thinking and learning?



What is the relationship between conceptual understanding described in the Progress Build and the Critical Juncture Assessment?

When during the lessons leading up to the Critical Juncture Assessment are there critical opportunities to collect data on student thinking and learning?

# On-the-Fly Assessments





### Planning for the Unit

Unit Overview



Unit Map



Progress Build



Getting Ready to Teach



Materials and Preparation



Science Background



Standards at a Glance



### Teacher References

Lesson Overview Compilation



Standards and Goals



3-D Statements



Assessment System



Embedded Formative Assessments



Books in This Unit



Apps in This Unit



Flextensions in This Unit



### Printable Resources



Coherence Flowcharts



Copymaster Compilation



Flextension Compilation



Investigation Notebook



Multi-Language Glossary



NGSS Information for Parents and Guardians



Print Materials (8.5" x 11")



Print Materials (11" x 17")

### Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide



### Planning for the Unit

Unit Overview



Unit Map



Progress Build



Getting Ready to Teach



Materials and Preparation



Science Background



Standards at a Glance



### Teacher References

Lesson Overview Compilation



Standards and Goals



3-D Statements



Assessment System



Embedded Formative Assessments



Books in This Unit



Apps in This Unit



Flextensions in This Unit




### Printable Resources


 Coherence Flowcharts

 Copymaster Compilation

 Flextension Compilation

 Investigation Notebook

 Multi-Language Glossary

 NGSS Information for Parents and Guardians

 Print Materials (8.5" x 11")

 Print Materials (11" x 17")

### Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide



# Creating your visual!

## How is the unit designed to support students to figuring out the unit phenomenon?

- Add to your visual:
  - 1. Embedded formative assessment opportunities
  - 2. Add connections from the assessment opportunities back to the Critical Juncture, Progress Build, 3-D learning, and the anchor phenomenon



## Part 5: Chapter 1 Analysis

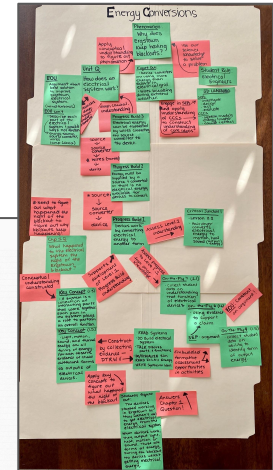
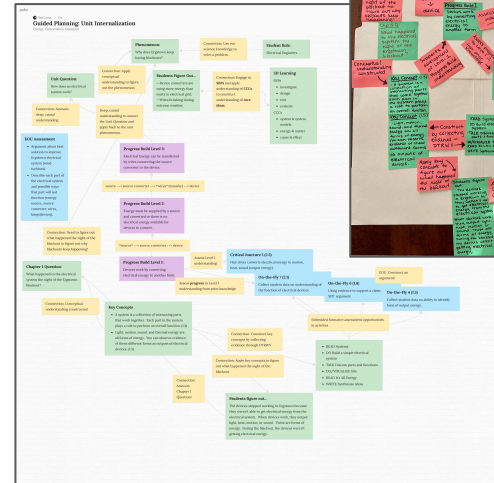
[Resources: Assessment System, Progress Build, Coherence Flowcharts, Digital or Print Teacher's Guide]

What is the Chapter Question?	
How does the Chapter Question connect back to the anchor phenomenon?	
What key concepts do students construct in this chapter?	
How are students constructing an understanding of these concepts? *Consider 3D Learning and the Multimodal Approach of Do-Talk-Read-Write-Visualize	
How do the key concepts constructed in Chapter 1 connect to the Progress Build?	
How do students apply the key concepts to the phenomenon/problem to answer the Chapter 1 question? *Use the Coherence Flowchart to find the explanation to the Chapter 1 question.	

# Creating your visual!

## How is the unit designed to support students to figuring out the unit phenomenon?

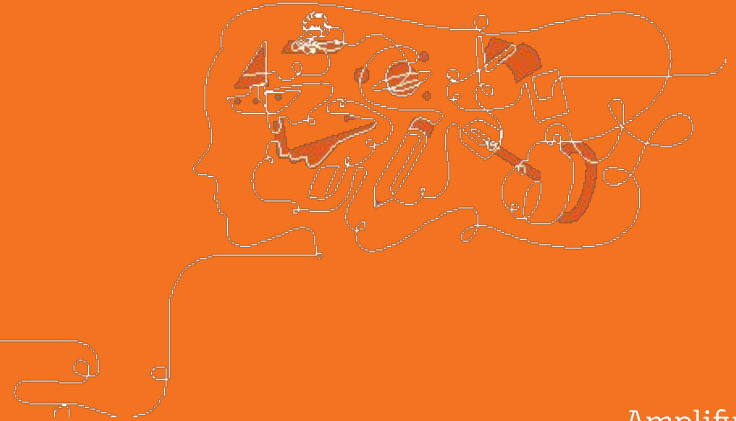
- Add to your visual:
  - How is Chapter 1 designed to support students in starting to figure out the phenomenon?





Questions?

# Share your visual!



# Use your **visual** & your **prior reflections** to inform instructional **planning**!

Choose the option that best supports you in **planning to teach**. Refer back to your **self-inventory** to guide your planning **focus**:

1. Complete the Unit Pacing Planning on **pages 11-13**.
2. Complete your Chapter 1 lesson plans on **pages 14-17**.
3. Use the Unit Level Planning & Internalization Guide to analyze Chapters 2-5 on **pages 18-21**.



# Debrief & reflection

- ❑ Share one **key-takeaway** from your breakout room planning work-time.
  
- ❑ Share one **new insight** you've gained from planning with regard to your **target areas of strength** and **support** you identified earlier.





Questions?



# Plan for the day

- Framing the day
  - Welcome and introductions
  - Anticipatory activity
- Targeted Implementation Reflection
  - Digitally-enhanced learning
    - Remote/Hybrid Resources Utilization
  - Reaching diverse learners
    - Utilizing Embedded Assessments
    - Culturally Linguistically Responsive Teaching
  - Science & Literacy
    - Accessing Complex Texts
    - Supporting Academic Discourse
    - Writing In Science
- Guided Planning
  - Unit internalization protocol
  - Chapter & Lesson-level internalization
    - Planning & pacing
- **Closing**
  - **Reflection & additional resources**
  - **Survey**

### 3-2-1 Reflection

---

3	Strategies to take away
---	-------------------------

2	Things I learned
---	------------------

1	Question I still have
---	-----------------------

# Revisiting our objectives

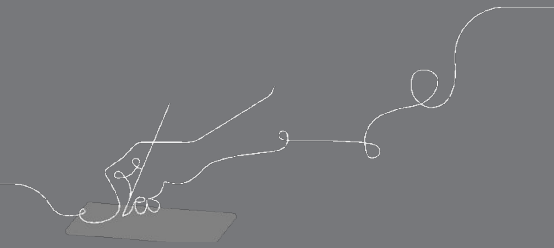
Do you feel ready to...

- Reflect on your implementation of Amplify Science in the targeted areas of digitally-enhanced learning, supporting diverse learners, & disciplinary literacy?
- Utilize these reflections to begin targeted planning at the unit & lesson level for the upcoming school year?

**1-** I'm not sure how I'm going to do this!

**3-** I have some good ideas but still have some questions.

**5-** I have a solid plan for how to make this work!



# New York City Resources Site

<https://amplify.com/amplify-science-nyc-doe-resources/>



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!

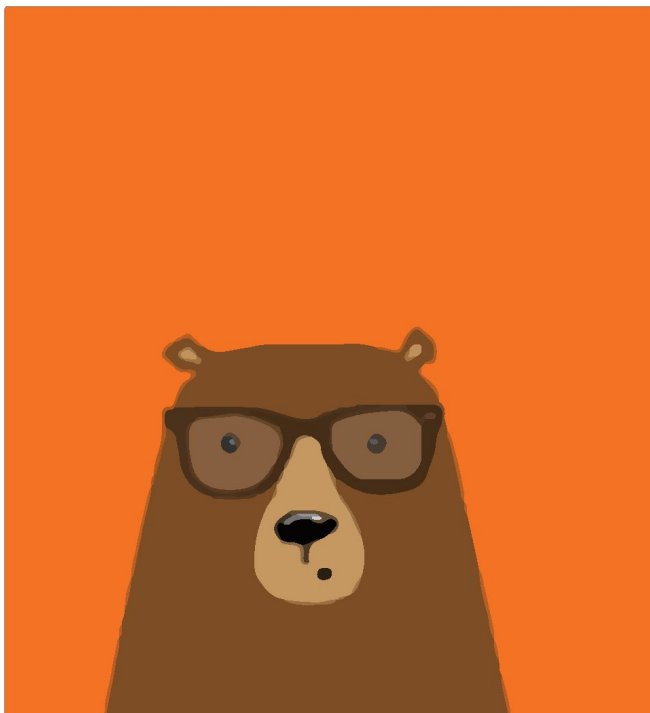
# Amplify Science Program Hub

A hub for Amplify Science resources

- **Videos and resources to continue getting ready to teach**
- Amplify@Home resources
- Keep checking back for updates

The screenshot shows the Amplify Science Program Hub website. The browser address bar displays the URL: [apps.learning.amplify.com/curriculum/#/yearoverview?subject=Science&programKey=6a0daafb-c356-4e50-841a-558d9bb5181...](https://apps.learning.amplify.com/curriculum/#/yearoverview?subject=Science&programKey=6a0daafb-c356-4e50-841a-558d9bb5181...). The page features a navigation menu on the left, a user profile for "Molly Teacher Lambertsen" with a "Log Out" button and a "Go To My Account" link, and "Classroom Language Settings". The main content area is titled "Life Science" and includes a "Sim" section with "Additional Resources" such as "Benchmark Assessments", "ELA Resources", "Interim Assessments", "LA Science Program Guide", and "Science Program Guide". There are also "Home" and "Metabolism" (19 Lessons) sections with corresponding images. The footer includes the copyright notice: "© 2020 Amplify Education, Inc."

# 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



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.

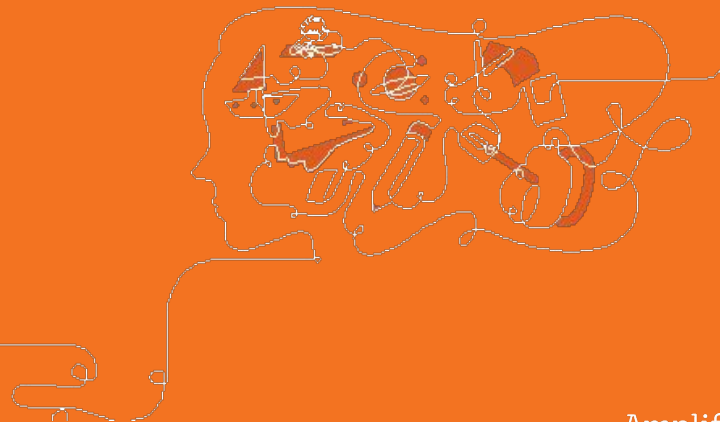


**Final Questions?**

# Please provide us feedback!

URL: <https://www.surveymonkey.com/r/BY56SBR>

Presenter name:



Amplify.

Thank you & be well!

