Part of the Day	Timing (min)	*PLS use only* Plan for the day
Welcome	35 min	 Welcome (10) Review key aspects of the approach (10) Introduce unit phenomenon (10) Opening reflection (5)
Unit-Specific	85 min	 Unit Map (5) Unit storyline overview (5) Break (15) Experiencing and analyzing chapter 1 (35) Analyzing chapter 2 (25)
Remote/Hybrid resources	40 min	 Guided introduction/review (15) Discussions around challenges & planning (25)
Closing	20 min	 Reflection (5) Additional resources (10) Survey (5)

Welcome to Amplify Science!

Do Now





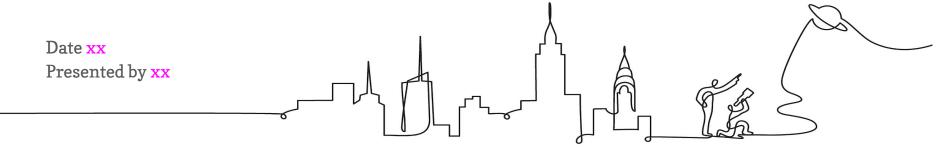
- 1. Go to learning.amplify.com
- 2. Select Log in with Amplify
- 3. Enter teacher demo account credentials
 - xxxxxx@pd.tryamplify.net
 - Password: xxxx

While you wait for others:

- Can you find the coherence flowchart?
- Can you find the Progress Build?

Amplify Science New York City

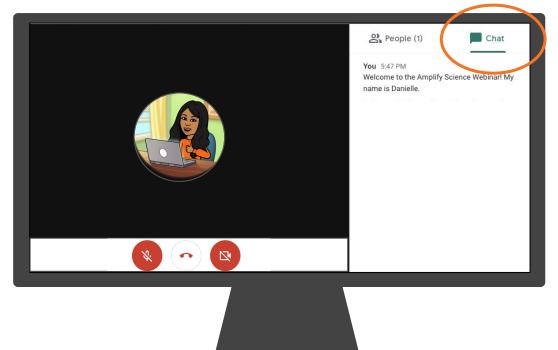
Understanding the Unit Storyline & Coherence Grade 3: Inheritance & Traits



Introductions!

Please introduce yourself in the chat

- Share a success or challenge you've had in implementing Amplify Science.
- Then, share a solution to a challenge posted by a colleague.



Overarching goals

Understand the unit 2 storyline
Plan for using Amplify Science@Home resources utilizing coherence as a design principle
Collaboratively problem-solve with colleagues



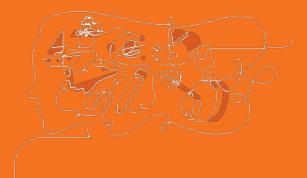
Plan for the day

- Welcome
- Unit storyline
 - Anchor phenomenon
 - Storyline summary
 - Break
 - Model activity
 - Evidence source analysis
- Remote and hybrid resources
 - Reviewing the resources
 - Collaborative planning
- Reflection and closing

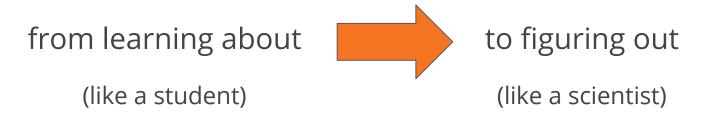
Norms: Establishing a culture of learners

- Take risks: Ask any questions, provide any answers.
- **Participate:** Share your thinking, participate in discussion and reflection.
- **Be fully present:** Unplug and immerse yourself in the moment.
- **Physical needs:** Stand up, get water, take breaks.

Key aspects of the Amplify Science approach



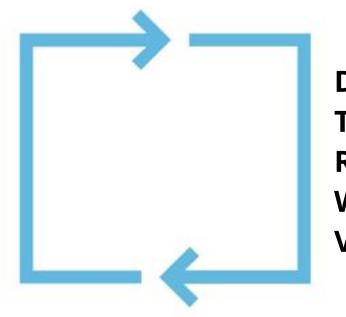
Phenomenon-based instruction A shift in science instruction



Scientific phenomenon: An observable event in the natural world you can use science ideas to explain or predict

Multimodal learning

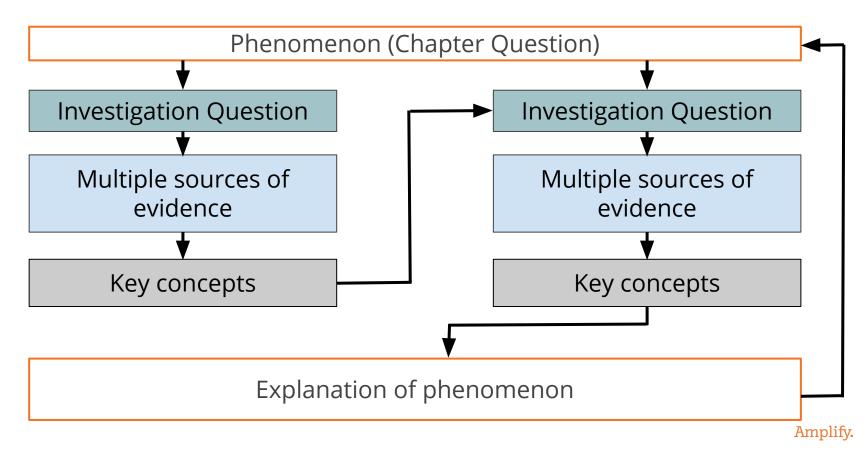
Gathering evidence over multiple lessons



Do, Talk, Read, Write, Visualize



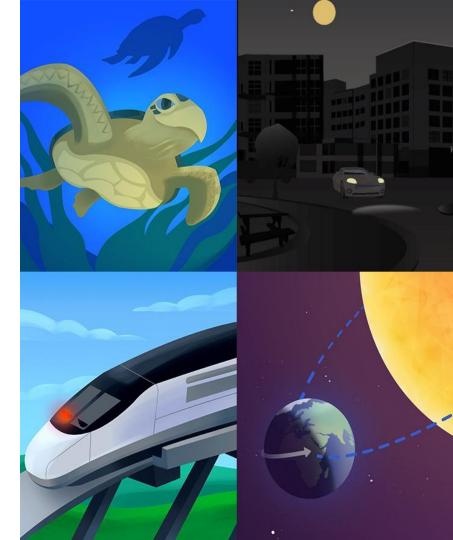
Coherent storylines



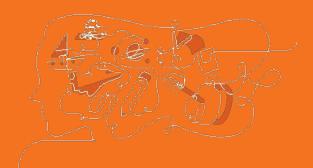
Opening reflection Stop and jot

Amplify Science units are designed around storylines.

What does this mean for the **student experience**?











Plan for the day

- Welcome
- Unit storyline
 - Anchor phenomenon
 - Storyline summary
 - Break
 - Model activity
 - Evidence source analysis
 - Breakout groups
- Remote and hybrid resources
 - Reviewing the resources
 - Collaborative planning
- Reflection and closing

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Activity 3 Introducing the Problem Students Will Investigate



Lesson 1.4: Introducing Species



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This is **Graystone National Park**.

Remember, we are wildlife biologists. Today, we will find out exactly what our **mission as wildlife biologists** will be.



Near the park, there is a school named Graystone Elementary School.

The **second grade class** is interested in learning more about the wolves in the park.





The students are very curious about this pack of wolves. They are a species known as **gray wolves**.

Let's see what we can **observe** about them.

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

Elk Mountain Wolf Pack





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

The students are especially interested in the wolf that is light gray.

We will call it **Wolf 44**.

$\vee \land \boxdot \circlearrowright$

To: Graystone National Park's Wildlife Biologist Team From: Second Grade Students, Graystone Elementary School Subject: Elk Mountain Wolves

Hello Wildlife Biologist Team,

Our class is visiting Graystone National Park. We've been observing a pack of wolves, and we have a question for you. Why are the wolves different from one another even though they are all the same species? Why does Wolf 44 look so different? (We observed that it is light colored, and all the others are dark colored.) We are hoping that you can explain the answer to these questions.

Thank you!

Chapter 1 Question

Why are wolves different even though they are all the same species?

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Explaining the phenomenon piece by piece

Traits & Inheritance storyline Look for

As you listen to the storyline summary, **consider the student experience.**

What will it be like for students to work through the unit storyline?



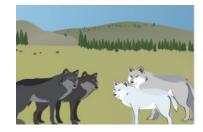




Chapter Question: Why are wolves different even though they are all the same species?

Explanation: Even though all wolves are the same species, some wolves are different from others due to variation of traits within a species. This means that even though wolves can have similarities in their traits, there can also be variations in each trait. For example, wolves have different colors of fur: some wolves have a trait for gray fur, others have a trait for black fur.





Chapter Question:Why is Wolf 44's color similar to one pack but different from the other?

Explanation: Wolf 44's color is similar to the wolves in the Bison Valley Pack because its parents are in the Bison Valley Pack.Offspring inherit instructions for each trait from both parents. This means that the trait of fur color comes from Wolf 44's parents.





Chapter Question: Why isn't Wolf 44 like the Bison Valley Pack in hunting style and size?

Explanation: Wolf 44 doesn't hunt like the Bison Valley Pack because it learned to hunt from the wolves in the Elk Mountain Pack. Learning to hunt is a trait that is determined by a wolf's environment. Wolf 44 is medium sized because of both inherited instructions (size) and the environment it lives in (access to diet). This means that Wolf 44 can grow bigger than its parents, but it can't grow as big as the wolves in the Elk Mountain Pack.

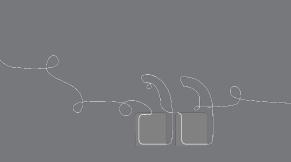




Chapter Question: How can scientists investigate questions about traits?

Explanation: Students can ask investigable questions about the traits of the White-Crowned Sparrow, taking into account the available data, and using that data to answer their questions.

Would you like to add anything to your opening reflection?



Make any updates, then take a break!



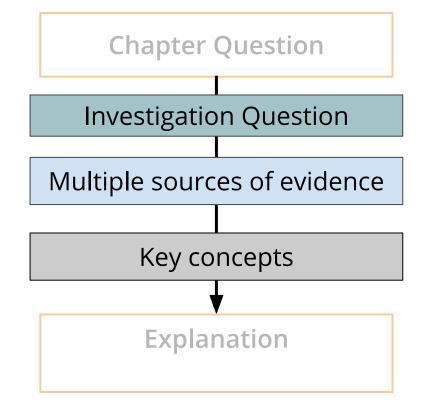
Welcome back Please respond in the chat

How do students get from the **question** at the beginning of the chapter to the **explanation** at the end of the chapter in Amplify Science? **Chapter Question:** Why are wolves different even though they are all the same species?

Explanation: Even though all wolves are the same species, some wolves are different from others due to variation of traits within a species.

Constructing science knowledge

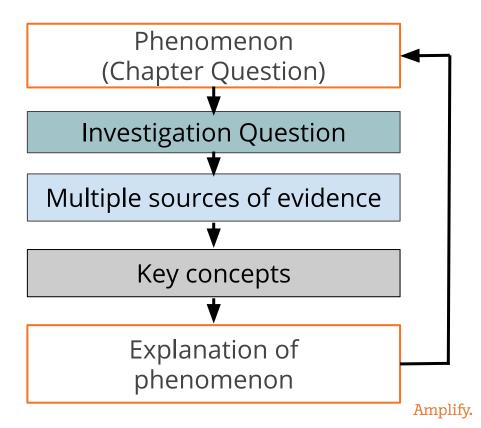
In order to progress through a unit storyline, students figure out general science ideas they can use to explain the phenomenon.

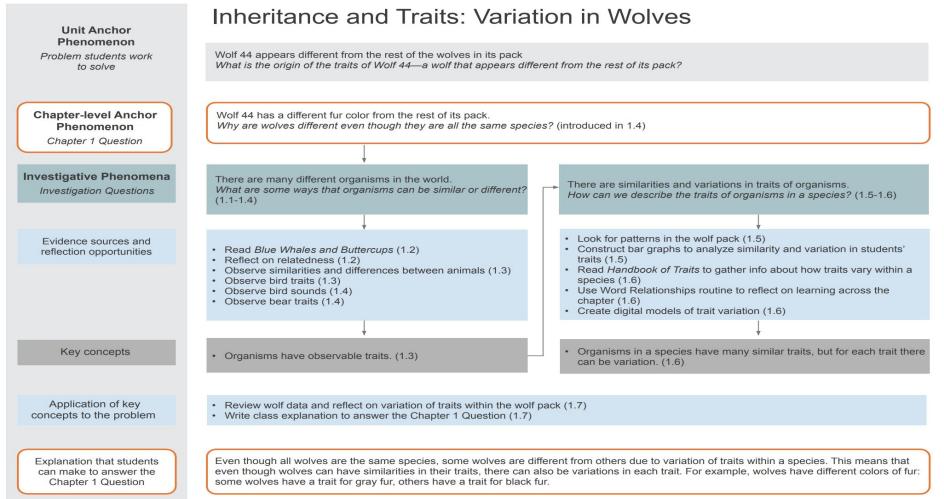


Coherence flowchart

Respond in the chat

Share your **prior** knowledge about the coherence flowchart, and how you've used it as a tool in your planning and teaching.





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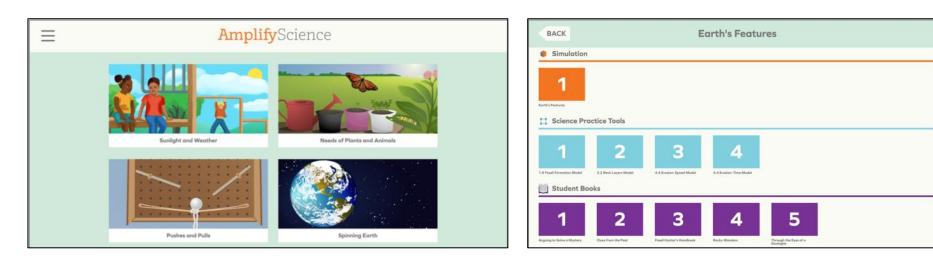
Example evidence source Model Lesson with text





Students app page to access books

Elementary digital experience for students grades K-5 is through the student apps page: **apps.learning.amplify.com/elementary**



Student volunteers





Grade 3 | Inheritance and Traits Lesson 1.6: Making Sense of Variation

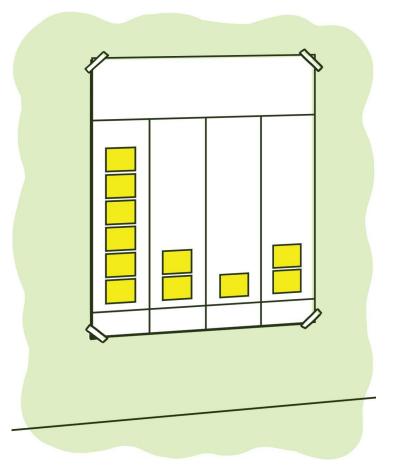


Activity 1 Reading: Handbook of Traits



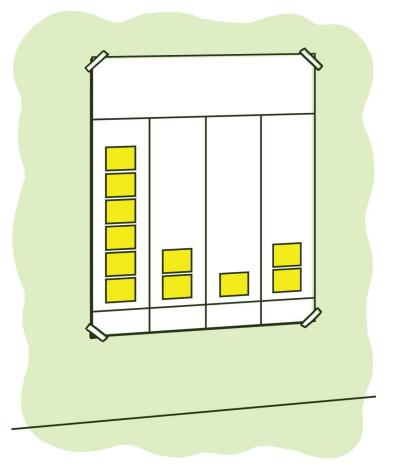
Remember that we are investigating this question:

How can we describe the traits of organisms in a species?



Think about when we made graphs of our own traits.

How can we **describe the traits we observed** in the humans in our class?



Humans are a species, but we have evidence that human traits can vary.

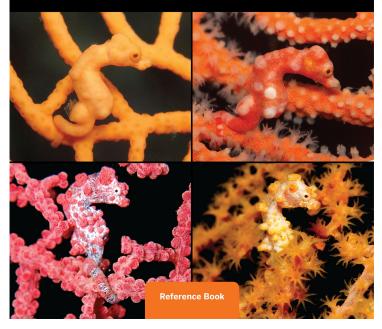
What do you think about other species? Do you think **traits vary within other species**, too?

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AmplifyScience

Handbook of Traits

by Chloë Delafield and Jonathan Braidman



Many of you think that traits vary within species in organisms other than humans.

Let's read about other organisms to get more **evidence** for this idea.

Evidence is information that supports an answer to a question.

In this case, we want to see if we can find more evidence to support the answer that traits vary within many species, not just humans.

Evidence	About Trait Variation	
Pirections:		
	t and one animal in <i>Handbook c</i> e name of a plant or an animal c on.	
Organism:		
Traits that have variation:		
Organism:		
Traits that have variation:		
Organism:		
Traits that have variation:		
Organism:		
Traits that have variation:		

Turn to page 16 in your notebooks.

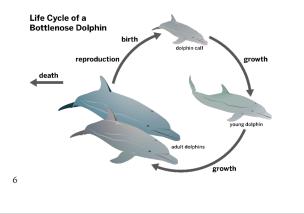
You will **read** about an organism and **record** how its traits can vary.

Let's try an example together.

Bottlenose Dolphin

Bottlenose dolphins live in the ocean all over the world. They have long bodies with two side fins and one top fin. They are gray in color. The biggest ones can be twice as long as a tall person. Even though they live in the water, dolphins breathe air. They have big brains and are very smart.





Variation in the Species

Bottlenose dolphins have **variation** in size and color. The dolphins in some groups are larger than the dolphins in other groups. Bottlenose dolphins also have different-sized beaks and fins. The **genes** that give instructions for these **traits** are passed from parents to **offspring**.

Another way that bottlenose dolphins vary is that each one has its own special whistle. Dolphins can tell each other apart by their whistles.



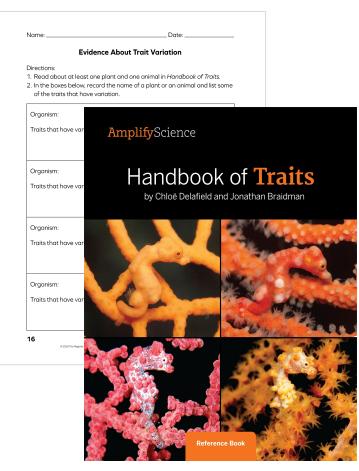
These dolphins show variation in color and beak size.

Bottlenose Dolphin 7

	Evidence About Trait Variation
. In the boxes b	t least one plant and one animal in <i>Handbook of Traits.</i> elow, record the name of a plant or an animal and list some iat have variation.
Organism: Bo	ttlenose dolphin
	e variation: size, color, beak size, fin size, and whistle
Organism:	
Traits that have	e variation:
Organism:	
Traits that have	e variation:
Organism:	
Traits that have	e variation:
6	Inheritance and Traits—Lesson 1.6

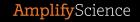
When I **read the page about variation**, I see that dolphins can vary in size, color, beak size, fin size, and whistles.

I can **record** this in my notebook.



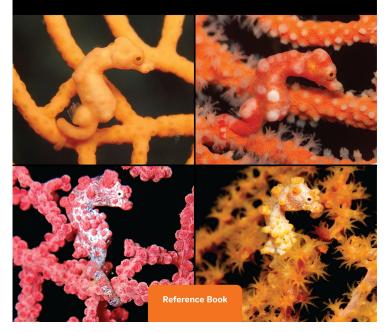
Read about different animals and plants.

Use the notebook page to **record variations** you find.



Handbook of Traits

by Chloë Delafield and Jonathan Braidman





What is some **evidence** you gathered to support the idea that traits can **vary within a species**?

Activity 2 Word Relationships



We will be doing a Word Relationships routine to use **important science words** to think about the ideas you are learning.

Name: _				Date:	
		Word R	elationships		
Directior	IS:				
	with your group ord cards in eacł			e at least two of	
	e some sentence : traits.	es that expl	ain what you ha	ve been learning	
3. Recor	d a few of the se	ntences yo	u created.		
4. With y	our group, choo	se one sent	tence to share w	ith the class.	
	variation	trait	organism	species	
1					
1					
2					
3					
4					
			d Traits—Lesson 1.6		17

Turn to page 17, Word Relationships, in your notebooks.

You will work with a partner at home to **make sentences** with word cards.

Then, you can record and share your sentences.

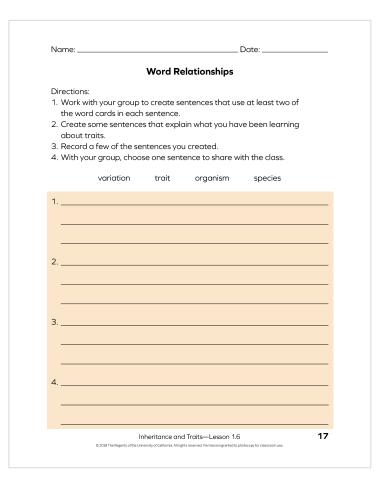


I can use these two words to talk about traits of organisms, like this:

Organisms can have different **traits**.

Lesson 1.6: Making Sense of Variation







Create sentences using the Word Relationship cards.

Name:				Date:	
		Word Re	elationships		
Direction	S:				
	with your group ord cards in each			e at least two of	
2. Create about		es that expl	ain what you ha	ve been learning	
	d a few of the se				
4. With y	our group, choo	ise one sent	tence to share w	ith the class.	
	variation	trait	organism	species	
1					
2					
З					
4					
			d Traits—Lesson 1.6		13

Soon, each pair will present a sentence to the class.

Choose who will read your sentence out loud while the rest of the group holds up the word cards. Practice together.



I will call on pairs one at a time to present their sentence to the class.



One person should speak while the other group members hold up the cards used in the sentence.

Does anyone have any new ideas about how we can describe the traits in a species?

Key Concept

Organisms in a species have many similar traits, but for each trait there can be variation.



Activity 3 Modeling Trait Variation



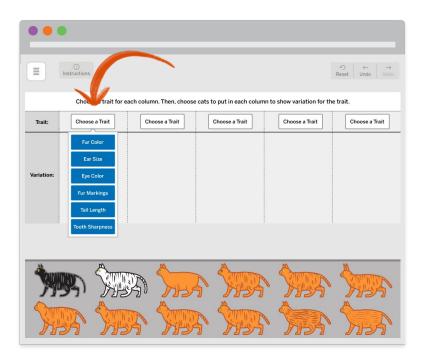
•••					
	Onstructions				
	Choose a trait for ea	ch column. Then, choose	cats to put in each colum	n to show variation for t	he trait.
Trait:	Choose a Trait	Choose a Trait	Choose a Trait	Choose a Trait	Choose a Trait
Variation:					
Š					

We will use what we learned to **make a model** that shows variation in a different organism—the domestic cat.

We'll use a **digital app** to create our models.

Guidelines for Using Apps

- Only one person "drives" at a time.
- Anyone can make suggestions about how to use the app.
- Talk about what you observe.
- Rotate the role of "driver."



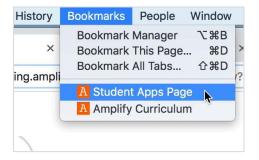
First, you will click on CHOOSE A TRAIT and **pick a trait from the menu**.

•••	•				
Ξ	() Instructions				♥) ← → Reset Undo Redo
	Choose a trait for each	ach column. Then, choose	cats to put in each colun	nn to show variation for th	ne trait.
Trait:	Fur Color	Choose a Trait	Choose a Trait	Choose a Trait	Choose a Trait
Variation:		5			
		/			

Select cats that show variation for the trait you chose and drag them into the column.

For example, for fur color I would choose cats with different colors of fur.

Open the Modeling Tool



Step 1

Click on the **<u>Student</u>** <u>**Apps Page**</u> in your bookmarks.



Step 2

Scroll down and click on the *Inheritance and Traits* **unit**.



Step 3

Click on the **blue box marked 1** to open the Modeling Tool.

•••	•				
Ξ	() Instructions				
	Choose a trait for ea	ch column. Then, choose	cats to put in each colum	n to show variation for t	he trait.
Trait:	Choose a Trait	Choose a Trait	Choose a Trait	Choose a Trait	Choose a Trait
Variation:					
-			- Commune		MILLING
				NAN STAR	reek .

Choose cats that show variation for different traits.

Who can share their ideas about trait variation within the species of domestic cats?

Lesson 1.6: Making Sense of Variation

End of Lesson





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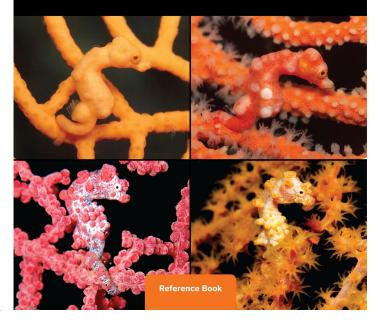
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Evidence source analysis

AmplifyScience

Handbook of Traits

by Chloë Delafield and Jonathan Braidman



Key Concept:

• Organisms in a species have many similar traits, but for each trait there can be variation

Amplify.

Evidence source analysis Please respond in the chat

How did reading and discussing this text help us build our understanding of these key concepts?

Key Concept:

• Organisms in a species have many similar traits, but for each trait there can be variation Evidence source analysis

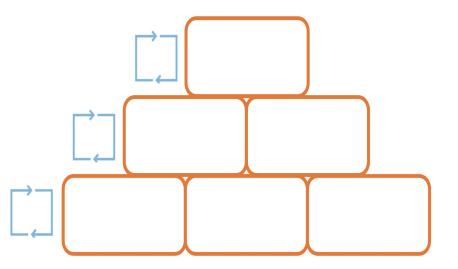
Analyzing an activity within a chapter storyline

Reflecting on how an activity helps students **figure out key concepts** is a tool for planning to teach.

Resource	Useful for
Lesson purpose (in Lesson Brief or Classroom Slides title slide notes)	Understanding what a lesson or activity is designed to do for student learning
Coherence flowchart	Considering how an activity works together with other parts of the chapter

Progress Build Unit-specific learning progression

- Reflecting on where a lesson lies on the your unit's progress build is a tool for **planning** to teach, specifically for gauging student **understanding** throughout the units.
- Which level of the progress build does the model lesson align to?



Build increasingly complex explanations

Evidence source analysis

Using evidence source analysis to prepare to teach

- 1. Read **lesson purpose** to consider the activity's role
- 2. Use the **coherence flowchart**:
 - a. To analyze how it fits within the chapter storyline
 - b. To consider the activity's modality and how it works with other activities (of other modalities)
- 3. As you plan for teaching, consider:
 - a. What you'll emphasize during the activity, and what you'll expect students to do or say
 - b. Implications for how you'll teach other activities in the chapter

Planning time Chapter 2 Storyline



Breakout groups

Evidence source analysis

First, get familiar with the Chapter Question, Investigation Question, key concepts, and explanation. Then, choose one evidence source and analyze its role in the Chapter 2 storyline.

Unit Anchor Phenomenon Wolf 44 appears different from the rest of the wolves in its pack Problem students work What is the origin of the traits of Wolf 44-a wolf that appears different from the rest of its pack? to solve **Chapter-level Anchor** Wolf 44's fur color is similar to one pack but different from another pack Why is Wolf 44's color similar to one pack but different from the other? Phenomenon Chapter 2 Question Some organisms of the same species have similar traits, others **Investigative Phenomena** Offspring have similar traits to their parents but not always to each other. have different traits. Investigation Questions Why do offspring have similar traits to their parents but not always to Why do only some organisms of the same species have similar each other? (2.3-2.5) traits? (2.1-2.2) Review additional wolf data (2.1) Read The Code (2.3) Evidence sources and · Make creature offspring by following instructions for traits from creature Examine data about fruit fly families (2.1) reflection opportunities Ask questions about fruit fly families and investigate by parents and look for patterns (2.4) Apply new ideas to explain traits in a fruit fly family (2.4) comparing traits of offspring from different families (2.1) Read about patterns between parents and offspring in · Create digital models to show thinking about how organisms inherit Handbook of Traits (2.2) traits (2.5) Use Word Relationships routine to reflect on learning across the Create digital models of patterns of traits between parents chapter (2.5) and offspring (2.2) Scientists ask questions they can investigate by making Key concepts Offspring inherit instructions for each trait from both their parents. (2.5) observations, (2,1) Offspring can inherit different instructions from their parents, so Organisms can have traits that are similar to their parents' offspring may have different traits. (2.5) traits. (2.2) Application of key · Ask questions about wolf data (2.5) concepts to the problem · Discuss and look for patterns in wolf data (2.5) · Write explanations to answer the Chapter 2 Question (2.6) Explanation that students Wolf 44's color is similar to the wolves in the Bison Valley Pack because its parents are in the Bison Valley Pack. Offspring inherit instructions for each trait from both parents. This means that the trait of fur color comes from Wolf 44's parents. can make to answer the Chapter 2 Question

Inheritance and Traits: Variation in Wolves

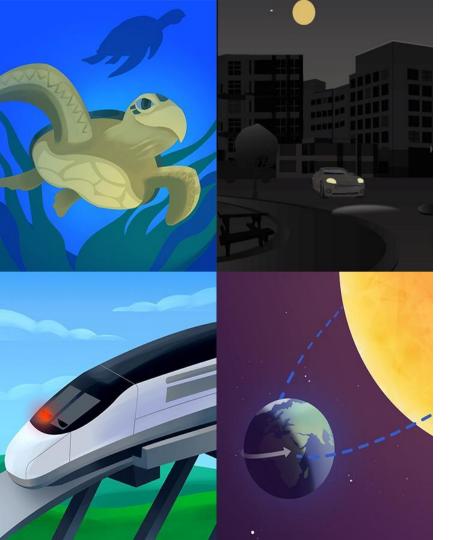
Navigate to your own coherence flowchart

Español

= Ampli

- 1. From the Unit Landing Page, select JUMP DOWN **TO UNIT GUIDE**
- 2. Under Printable Resources, select **Coherence Flowchart**
- Look over the coherence 3. flowchart for **Chapter 1**.

lifyScience >	Metabolism		
	Planning for the Unit		Printable Resources
	Unit Overview	~	article Compilation
	Unit Map		Coherence Flowchart
	Progress Build	~	Copymaster Compilation
	Getting Ready to Teach	~	Flextension Compilation
	Materials and Preparation	~	Investigation Notebook
	Science Background	~	Information for Parents and Guardians
	Standards at a Glance	~	📴 Print Materials (8.5" x 11")
	Teacher References		Print Materials (11" x 17")
	Lesson Overview Compilation	~	
	Standards and Goals	~	Offline Preparation
	3-D Statements	~	Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.
	Assessment System	~	
	Embedded Formative Assessments	~	Offline Guide
	Articles in This Unit	~	
	Apps in This Unit	~	



Plan for the day

- Welcome
- Unit storyline
 - Anchor phenomenon
 - Storyline summary
 - Break
 - Model activity
 - Evidence source analysis
 - Breakout groups
- Remote and hybrid resources
 - Reviewing the resources
 - Collaborative planning
- Reflection and closing

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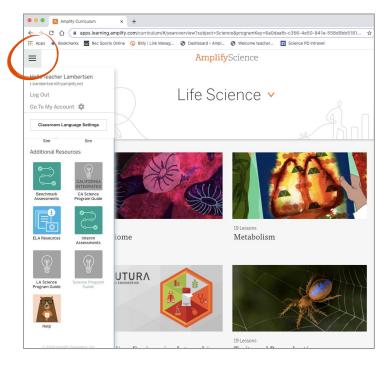
Amplify Science@Home A suite of resources that...

- Are designed for students to complete independently
- Require no materials except a pencil and paper
- Include digital and print-only options
- Can be leveraged in a variety of remote and hybrid instructional formats



Amplify Science Program Hub A new hub for Amplify Science resources

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



Selecting @Home resources Questions to consider

- How much **time** do students have to learn science in the upcoming school year?
- Do your students have **access to technology** at home, or do you need a **print-only solution**?

Amplify Science@Home

@Home Units

• Packet or slide deck versions of Amplify Science units condensed by about 50%

@Home Videos

 Video playlists of Amplify Science lessons, taught by real Amplify Science teachers





Selecting @Home Units You might use this resource if...

- You have less instructional time for science than you normally would
- You need a solution for remote, asynchronous student learning some or all of the time



Two options for student access			
For students with consistent access to technology at home, use @Home Slides	For a print-only option, use @Home Packets		

@Home Units example use case

Remote Asynchronous Model: Students work flexibly through content





Monday-Thursday

Assign @Home Lessons 1-2 (Packets or Slides)

Friday

Students submit work product through email, or by writing on paper and texting the teacher a photo of their work

@Home Units example use case Hybrid Model: Teach live during in-person time









Monday-Tuesday

Remote

Assign: @Home Lesson 1 (Packet or Slides)

Wednesday

In-person

Teach: @Home Lesson 1: Ideas for synchronous or in-person instruction Thursday-Friday

Remote

Assign: @Home Lesson 3 (Packet or Slides)

Selecting @Home Videos You might use this resource if...



- Your students have **access to internet-connected devices** at home
- You have **about the same amount of instructional time** for science as you normally would
- You need a solution for remote, asynchronous student learning some or all of the time

@Home Videos example use case Hybrid Model: Teach live during in-person time



Monday

Assign: Lesson 1.1

Remote

Video



Tuesday

In-person

Teach: Lesson 1.2 live

Wednesday

Remote

Assign: Lesson 1.3 Video

Thursday

Remote

Assign: Lesson 1.4 Video



Friday

In-person

Revisit: hands-on or discourse-based activities the week's lessons

@Home Videos example use case Remote Synchronous Model: Discussions during online class



Monday

Asynchronous

Assign: Lesson 1.1

Video

Tuesday

Asynchronous

Assign: Lesson 1.2 Video

Wednesday

Synchronous

Teach: Lead class discussion to review key ideas from 1.1 and 1.2



Thursday

Asynchronous

Assign: Lesson 1.3 Video



Friday

Asynchronous

Assign: Independent written reflection about week's lessons

Navigating to @Home resources

PLS models locating @Home resources live by navigating to the Program Hub (Teacher's Guide -> Global Navigation -> Additional Resources -> Program Hub -> Teacher -> Amplify Science@Home)

Model locating @home resources

Breakout groups Discussing the resources

Consider **challenges and successes** you are currently experiencing with remote & hybrid learning.

How might you use the @Home resources?

What are your **next steps**?



Individual planning considerations

Utilizing coherence as a design principle

@Home lessons consist of a reduced set of prioritized activities, but still preserve a coherent instructional build.

Individual **work-time** & reflection:

- Open lesson index. Compare a lesson of your choice from Teacher's Guide with @home lesson.
- How can you best plan synchronous instruction "coherently" with your asynchronous lesson?
- Jot some notes, using table to right as a guide.

	-				
Synchronous time					
	In-person	Online class			
	scourse utines	 Online discussions 			
• Cla	ass discussions	• Sim			
inv (op	inds-on vestigations otion for acher demo)	 demonstrations Interactive read-alouds Shared Writing 			
	ysical modeling tivities	 Co-constructed class charts Amplify. 			

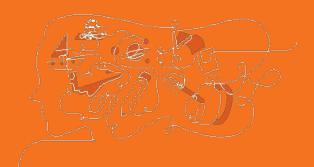


Plan for the day

- Welcome
- Unit storyline
 - Anchor phenomenon
 - Storyline summary
 - Break
 - Model activity
 - Evidence source analysis
 - Breakout groups
- Remote and hybrid resources
 - Reviewing the resources
 - Collaborative planning
- Reflection and closing

Amplify.





Closing reflection

Please respond in the chat

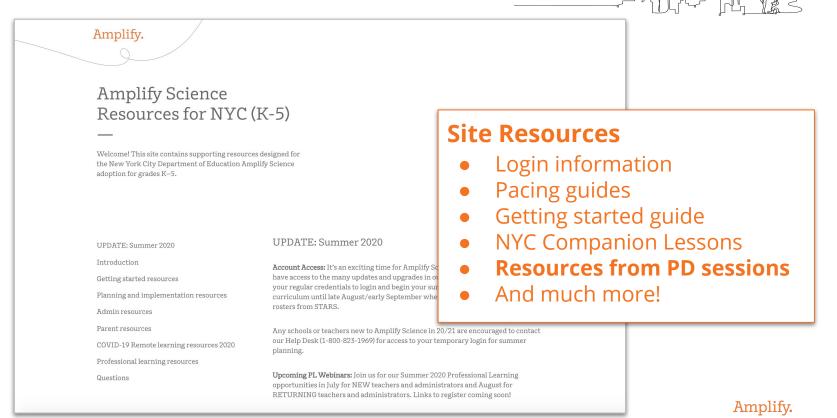


How can understanding your unit's **storyline** help you make **instructional decisions**, particularly in a remote or hybrid context?



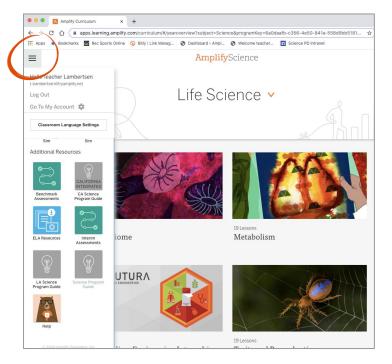
New York City Resources Site

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



Amplify Science Program Hub A new hub for Amplify Science resources

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



Additional Amplify resources



Program Guide

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

https://my.amplify.com/programguide/co ntent/national/welcome/science/

Amplify Help

Find lots of advice and answers from the Amplify team. **my.amplify.com/help**

Additional Amplify Support

Customer Care

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



scihelp@amplify.com

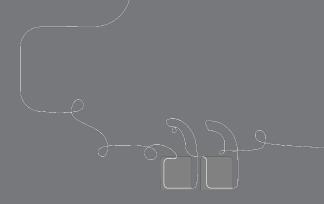


800-823-1969



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: XXX





