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### Welcome to Amplify Science!

This site contains supporting resources designed for the Los Angeles Unified School District Amplify Science adoption for grades TK–8.

All LAUSD schools have access to Amplify Science resources at this time.

Click here for Remote Learning Resources for Amplify Science

Click here to go back to the LAUSD homepage.

Click the button below to preview the digital Teacher's Guide, and check back for exciting updates to this site!



### https://amplify.com/lausd-science/

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**Do Now:** The Program Hub has been redesigned! Navigate to the Program Hub and explore the new layout. Can you find the Environments and Survival unit?

# **Amplify** Science

# Environments and Survival: Unpacking the phenomenon

Deep-dive and strengthening workshop Unit 3 Grade 3

LAUSD

1/x/2020 Presented by Your Name In a new tab, please log in to your Amplify Science account through Schoology.

### Norms: Establishing a culture of learners



Please keep your camera on, if possible. 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!

# Workshop goals

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

- Describe how students' conceptual understanding builds through the unit
- Explain how students figure out the phenomenon throughout the unit
- Leverage understanding of the Amplify Science instructional approach to make instructional decisions while teaching remotely



## Plan for the day

- Introduction and framing
- Phenomenon at the unit level
- Program Hub
- Constructing explanations at the chapter level
- Reflection and closing









# Plan for the day

- Introduction and framing
- Phenomenon at the unit level
- Program Hub
- Constructing explanations at the chapter level
- Reflection and closing

### Opening reflection Jamboard

Having taught with Amplify Science, what stands out to you?

How do students **figure out phenomena** in Amplify Science units?



# Key aspects of the Amplify Science instructional 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









# Plan for the day

- Introduction and framing
- Phenomenon at the unit level
- Program Hub
- Constructing explanations at the chapter level
- Reflection and closing

In this unit, we will take on the role of **engineers** working for an engineering firm, or company.

Let's **read our first message** from Dr. Jasmine Neel, the lead engineer at the engineering firm.

### 

**To:** Biomimicry Engineers **From:** Dr. Jasmine Neel, Lead Engineer **Subject:** Grove Snail Biomimicry Project, Part 1



Hello biomimicry engineers,

We are excited that you are working with our engineering firm! We often get ideas for designs from studying organisms. We have been studying grove snails, and we need your help to learn more about them and to get ideas for designs. Here is a diagram that shows some of the parts of the body of a grove snail.



Thank you!



We will be studying a **group of grove snails** living in a specific area.

A group of one kind of living thing is called a **population.** 



Snail with banded shell



The engineering firm sent photographs of the two types of snails in this population: snails with yellow shells and snails with **banded**, or striped, shells.

### The engineering firm also sent **bar graphs** that show the two types of snails in the **population over time.**

We will look at the bar graphs, and you can think about what you notice.

### **Grove Snail Population Data**



Even though there are fewer snails in the population now overall, the **number of snails with banded shells actually got larger**, while the **number of snails with yellow shells got smaller**.



# We've received another **message** from Dr. Jasmine Neel, the Lead Engineer. Let's take a look at it.

### ✓ ∧ □ □ □

To: Biomimicry Engineers From: Dr. Jasmine Neel, Lead Engineer Subject: Grove Snail Biomimicry Project, Part 2



Hello biomimicry engineers,

We have been studying a population of grove snails to learn more about them. We've noticed that some of the snails in the population are surviving well, but not all of them. Over the past 10 years, the number of snails with yellow shells in the population has gotten smaller, which means they are not surviving well. Can you help us figure out why?

Thank you!



The message says that the snails with yellow shells in the population aren't surviving as well. The number of snails with yellow shells now is smaller than it was 10 years ago.



Snail with banded shell



Even though the **snails with yellow shells aren't surviving well**, this isn't true for all the snails in the population.

### The number of snails with banded shells got larger over the last 10 years, so the **snails with banded shells are surviving well**.

Their **population increased**, which means that they were successfully finding mates and reproducing.

### Throughout the unit, we will investigate this question:

### **Unit Question**

Why are different organisms more likely or less likely to survive in an environment?

### Explaining the phenomenon: science concepts Please respond in the chat

What science concepts do you think students need to understanding in order to construct an explanation for the changes in the Grove Snail population?



### Unit Guide Resources

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	~	Offline Preparation
Standards and Goals	~	Teaching without reliable classroom internet? Prepare unit and lesson
3-D Statements	~	materials for offline access.
Assessment System	~	Offline Guide
Embedded Formative Assessments	~	
Articles in This Unit	~	
Apps in This Unit	~	
Flextensions in This Unit	~	

#### Unit Guide resources

Once a unit is selected, select JUMP DOWN TO UNIT GUIDE in order to access all unit-level resources in an Amplify Science unit.

#### Planning for the unit

Unit Overview	Describes what's in each unit, the rationale, and how students learn across chapters
Unit Map	Provides an overview of what students figure out in each chapter, and how they figure it out
Progress Build	Explains the learning progression of ideas students figure out in the unit
Getting Ready to Teach	Provides tips for effectively preparing to teach and teaching the unit in your classroom
Materials and Preparation	Lists materials included in the unit's kit, items to be provided by the teacher, and briefly outlines preparation requirements for each lesson
Science Background	Adult-level primer on the science content students figure out in the unit
Standards at a Glance	Lists Next Generation Science Standards (NGSS) (Performance Expectations, Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts), Common Core State Standards for English Language Arts, and Common Core State Standards for Mathematics
Teacher references	
Lesson Overview Compilation	Lesson Overview of each lesson in the unit, including lesson summary, activity purposes, and timing
Standards and Goals	Lists NGSS (Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts) and CCSS (English Language Arts and Mathematics) in the unit, explains how the standards are reached
3-D Statements	Describes 3-D learning across the unit, chapters, and in individual lessons
Assessment System	Describes components of the Amplify Science Assessment System, identifies each 3-D assessment opportunity in the unit
Embedded Formative Assessments	Includes full text of formative assessments in the unit
Books in This Unit	Summarizes each unit text and explains how the text supports instruction
Apps in This Unit	Outlines functionality of digital tools and how students use them (in grades 2-5)
Printable resources	·
Copymaster Compilation	Compilation of all copymasters for the teacher to print and copy throughout the unit
Investigation Notebook	Digital version of the Investigation Notebook, for copying and projecting
Multi-Language Glossary	Glossary of unit vocabulary in multiple languages
Print Materials (8.5" x 11")	Digital compilation of printed cards (i.e. vocabulary cards, student card sets) provided in the kit
Print Materials (11" x 17")	Digital compilation of printed Unit Question, Chapter Questions, and Key Concepts provided in the kit



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# Explaining the phenomenon: science concepts

Read the Progress Build. Make notes about the science ideas students figure out, and how the ideas at different levels connect to one another.

#### Environments and Survival Planning for the Unit

Progress Build

#### Progress Build

A Progress Build describes the way in which students' explanations of the central phenomenon should develop and deepen over the course of a unit. It is an important ool to understanding the design of the unit and in supporting students' learning. A Progress Build organizes the sequence of instruction, defines the focus of the assessments, and grounds inferences about students' understanding of the content, specifically at each of the Critical Juncture Assessments found throughout the unit. A Critical Juncture Assessment guides the instruction designed to address specific agas in students' understanding of the will serve as an overwise of the *Environments and Survival* Progress Build. Since the Progress Build is an increasingly complex yet integrated explanation, we represent it below by including the new least for each here in hold.

In the Environments and Survival unit, students will learn to construct scientific explanations about why the grove snails with banded shells are more likely to survive today than the grove snails with yellow shells, and why the snails with yellow shells were more likely to survive in the past.

Prior knowledge (preconception): Students are expected to have had previous opportunities to think about the needs of different organisms and the relationship between meeting meeds and survival. Students are also likely to have had experiences thinking about the different trats of organisms. While these ideas are not necessary for students to participate lulpi in the value of the students of the students will repare students will be are more than the students of the stu

Progress Build Level 1: When it is easier for organisms to meet their needs in an environment, they are more likely to survive.

Organisms are more likely to survive in a given environment when it is easier for them to meet their needs (water, food, and avoiding predators) and less likely to survive when it is harder for them to meet those needs.

#### Progress Build Level 2: There can be adaptive and non-adaptive traits in a population.

Organisms are more likely to survive in a given environment when it is easier for them to meet their needs (vater, food, and avoiding predicators) and loss likely to survive when it is harder for threm to meet these needs. Organisms in a apopulation can have different traits. In an emvironment, some traits can make it easier for organisms to meet their needs and survive, and other traits can make it harder for organisms to meet their needs and survive.

#### Progress Build Level 3: What is adaptive can change when the environment changes.

Organisms are more likely to survive in a given environment when it is easier for them to meet their needs (vater, food, and avoiding predicators) and less likely to survive when it is harder for them to meet those needs. Organisms in a population can have different traits. In an environment, some traits can make it easier for organisms to meet their needs and survive, and other traits can make it harder for othem their needs and survive. When an environment changes, traits that used to be adaptive may become non-adaptive, and organisms with those traits will be less likely to survive than they were before. Organisms cannot decide to change their traits.

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### Progress Build

Level 3: What is adaptive can change when the environment changes.

Level 2: There can be adaptive and non-adaptive traits in a population. In an environment, some traits can make it easier for organisms to meet their needs and survive.

Level 1: When it is easier for organisms to meet their needs in an environment, they are more likely to survive.

### Additional science concept resources for teachers

### Science Background: Adult-level summary of unit science concepts

**Standards and Goals:** Information about NGSS standards and how they're achieved in the unit

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	Guardians
Standarde at a Glance	V Print Materials (8.5" x 11")
Teacher References	Print Materials (11" x 17")
Lesson Overview Compilation	✓ Offline Preparation
Standards and Goals	Teaching without reliable classroom internet? Prepare unit and lesson
3-D Statements	materials for offline access.
Assessment System	✓ Offline Guide
Embedded Formative Assessments	×
Articles in This Unit	~
Apps in This Unit	V
Flextensions in This Unit	~

# Applying conceptual understanding to explain the phenomenon



## Explaining the phenomenon: chapter by chapter

Read the Unit Map. As you read, think about the science concepts you read about in the Progress Build.

What conceptual understandings are reflected in each chapter's explanation?

#### Environments and Survival

Planning for the Unit

Unit Map

#### Unit Map

#### How can learning about how grove snails survive help engineers design effective solutions to problems?

In their nois as bioinminicry engineers, students figure out how the traits of grows snails affect their survival in different environments. Thus yapply that understanding as they explore of their organisms, their braits, and the likelihood of survival in different environments. Students then design effective solutions to the problem of invasive plant removal using the structural traits of graftes as insparsion.

#### Chapter 1: Why are the snails with yellow shells not surviving well?

Students figure out in a specific snal population, the snals with yellow shells are less likely to survive because it is harder for them to avoid song thruch bids in their environment. Organisma are more likely to survive if they can meet their needs in their environment, and avoiding predators is one of those needs. The snalls with yellow shells are less able to avoid breg eattern by the bids; to they are less likely to survive.

How they figure It out: Students imagine that they are different organisms and consider whether they will be able to survive in different environments. They read a book about how earthworms meet their needs to survive and different environments. After analyzing data about the small environment, they write their first schefflic explanation.

#### Chapter 2: Why are the snails with banded shells more likely to survive than the snails with yellow shells?

Students figure out: Snails with banded shalls are more likely to survive because their shalls bland in with the environment. The snails like in an environment with brown grass, so it's harder for birds to see snails with banded shalls. Another reason snails with banded shalls, and the survive is that banded shalls are stronger than yellow shalls. Since birds need to crack the shall in order to eat the snail, snails with the stronger banded shalls are more likely to survive.

How they figure it cut: Students support variation in trads within a species and use a physical model to collect data about how different trad lateft wither organisms can meet their needs for survival in their environment. They rad a book about animal mouth structures and newsigate focusil structures to they can make inferences about the function of these structures. Students analyze new data from the smill environment and write an explanation about why bandedshell statisms are more likely to survive. They conclude the chapter by planning a design inspired by their knowledge of grove shall's adaptive trats.

#### Chapter 3: Why were snalls with yellow shells more likely to survive in their environment 10 years ago?

Students figure out: Snails with yellow shells were more likely to survive in the past because their yellow color was an adaptive trait in their former environment. That area used to be sandy, so the snails with yellow shells blended in against the yellow and. When the environment changed from sandy to brown grass, the yellow color became a nonadaptive trait; it is easier for birds to see the yellow snails against the brown grass.

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ments and Survival

lanning for the Unit

They engage in a

solutions?

anges in the organisms'

can decide to change

ns to understand the

ake a design, test it to

tanding of how structures

ry to design a robot that

is inspired by giraffe

l app, and revise their criteria.

rmined which organisms



**Pages 3-4** 

### Page 5

### Applying conceptual understanding to explain the phenomenon

Use ideas from the Progress Build and Unit Map to make notes about the conceptual and explanatory builds in your unit.

	Science concepts	Explanation of the phenomenon	
	Students figure out	So they can explain	
Chapter 1	Animals need to avoid being eaten by predators to survive, and their traits can make it easier or harder to avoid predators and meet other survival needs.	The snails with yellow shells are less likely to survive because it's harder for them to avoid being eaten by their predator, the song thrush bird.	
Chapter 2			

#### Chapter 1: Why are the snails with yellow shells not surviving well?

**Students figure out:** In a specific snail population, the snails with yellow shells are less likely to survive because it is harder for them to avoid song thrush birds in their environment. Organisms are more likely to survive if they can meet their needs in their environment, and avoiding predators is one of those needs. The snails with yellow shells are less able to avoid being eaten by the birds, so they are less likely to survive.

**How they figure it out:** Students imagine that they are different organisms and consider whether they will be able to survive in different environments. They read a book about how earthworms meet their needs for survival and collect data in a board game to understand why organisms are more likely or less likely to survive in different environments. After analyzing data about the snails' environment, they write their first scientific explanation.



### Breakout groups

Discuss the science concepts and explanations for the remaining chapters and complete the graphic organizer.

Remember, your Explanation of the phenomenon column should refer to the snails! Applying conceptual understanding to explain the phenomenon

Use ideas from the Progress Build and Unit Map to make notes about the conceptual and explanatory builds in your unit.

	Science concepts	Explanation of the phenomenon	
	Students figure out	So they can explain	
Chapter 1	Animals need to avoid being eaten by predators to survive, and their traits can make it easier or harder to avoid predators and meet other survival needs.	The snails with yellow shells are less likely to survive because it's harder for them to avoid being eaten by their predator, the song thrush bird.	
Chapter 2			
Chapter 3			
Chapter 4			
Chapter 4			

Page 5
### Share your thinking Please respond in the chat

Based on your work in small groups, what are your ideas about how **students' explanations become more complete and complex** throughout the unit? Applying conceptual understanding to explain the phenomenon

Use ideas from the Progress Build and Unit Map to make notes about the conceptual and explanatory builds in your unit.

	Science concepts	Explanation of the phenomenon
	Students figure out	So they can explain
Chapter 1		
Chapter 2		
Chapter 3		
Chapter 4		

### Environments and Survival unit storyline Look for

As you listen to the storyline summary, **consider the connections between chapters.** 

How do the **ideas flow logically** from one chapter to the next?





**Explanation:** The snails with yellow shells are less likely to survive because it's harder for them to avoid being eaten by their predator, the song thrush bird.

### Environments and Survival Chapter 2



**Chapter Question:** Why are the snails with banded shells more likely to survive than the snails with yellow shells?

**Explanation:** Snails with banded shells have two adaptive traits: shells that blend in with their environment, and shells that are strong and hard for birds to crack.

### Environments and Survival Chapter 3



**Chapter Question:** Why were snails with yellow shells more likely to survive in their environment 10 years ago?

**Explanation:** Snails with yellow shells were more likely to survive in the past because their yellow color was an adaptive trait in their former environment, when the area was sandy.

### Environments and Survival Chapter 4



**Chapter Question:** How can engineers use what they learn from organisms' traits to design solutions?

**Explanation:** Engineers can design solutions to human problems by drawing inspiration from organisms' structures. This is called biomimicry.

### Reflection Jamboard

How will understanding the unit's **storyline** help you during **remote instruction**?



## Key Takeaway

### Conceptual build and explanatory build

Throughout the unit, students' conceptual understanding grows deeper, allowing their explanations of the phenomenon to become more complete and complex.







Level 3: What is adaptive can change when the environment changes.

Level 2: There can be adaptive and non-adaptive traits in a population. In an environment, some traits can make it easier for organisms to meet their needs and survive.

Level 1: When it is easier for organisms to meet their needs in an environment, they are more likely to survive.











## Plan for the day

- Introduction and framing
- Phenomenon at the unit level
- Program Hub
- Constructing explanations at the chapter level
- Reflection and closing

## Accessing the Program Hub



### Amplify Science@Home resources reference

Use this guide to keep track of the different resources available for remote and hybrid learning.

#### Instructional materials:

Click Remote and hybrid learning resources, then select your grade level from the dropdown menu. Select your unit.

#### @Home Unit resources:

These will appear when you select your unit.

Teacher Overview General information for teaching with @Home Units, planning information chapter and lesson outlines				
Lesson Index	Lists the original Amplify Science lessons associated with each @Home lesson, and the Investigation Notebook pages, copymasters, and print materials associated with the @Home Unit Student Sheets			
Family Overview	Information to send home to families to help them support students with remote learning			
Student lesson         Printable or digital lessons condensed to be about 30 minutes long. You can materials for @Home Units         access compilations of all student materials for your unit, or select from individual lessons.				
@Home Video resou After selecting your a				
@Home Video links	Links to video lessons that include all activities from the original units. Lesson playlists are on YouTube, and they autoplay in a playlist form.			
Additional remote a These can be access	nd hybrid instructional materials: ed from the tabs below your unit title.			
Hands-on investigations support	Videos of every unit's hands-on activities (note, these videos also appear in the student lesson materials).			
Read-aloud videos	Link to a YouTube playlist of read-aloud videos of all books in your unit.			
Orientation and Click Remote and hy Orientation and Tuto can share with stude	tutorials: brid learning resources, then select your grade from the dropdown menu. Click orials. You'll not only find videos to help you use the resources, but also videos you ents and caregivers.			

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### Page 6



### Work time

Spend time time exploring the Program Hub. Make sure your find:

- @Home Unit Teacher Overview
- @Home Unit Lesson Index







## Plan for the day

- Introduction and framing
- Phenomenon at the unit level
- Program Hub
- Constructing explanations at the chapter level
- Reflection and closing

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Constructing explanations at the chapter level Framing this section

During this part of the day, we'll focus on how students get from the **question** at the beginning of a chapter to the **explanation** at the end of a chapter. Chapter Question: Why are snails with yellow shells not surviving well?

**Explanation:** The snails with yellow shells are less likely to survive because it's harder for them to avoid being eaten by their predator, the song thrush bird.

## Constructing science knowledge

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



Chapter Question: Why are snails

**Explanation:** The snails with yellow shells are less likely to survive because it's harder for them to avoid being eaten by their predator, the song thrush bird.

## Coherence flowchart

A diagram of student learning



Planning for the Unit	Printable Resources
Unit Overview	✓ 🔯 3-D Assessment Objectives
Unit Map	Coherence Flowcharts
Progress Build	Copymaster Compilation
Getting Ready to Teach	↓ Flextension Compilation
Materials and Preparation	Investigation Notebook
Science Background	☐ Multi-Language Glossary
Standards at a Glance	Guardians
Teacher References	Print Materials (8.5" x 11")
Lesson Overview Compilation	Print Materials (11" x 17")
Standards and Goals	✓ Offline Preparation
3-D Statements	<ul> <li>Teaching without reliable classroom internet? Prepare unit and lesson</li> </ul>
Assessment System	waterials for offline access.
Embedded Formative Assessments	✓ Offline Guide
Books in This Unit	×
Apps in This Unit	~
Flextensions in This Unit	~

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## Today we are going to investigate this question:

# What makes organisms in a population more likely to survive or less likely to survive?



Now, you will investigate how **organisms** meet their needs for **survival**.

You will read about **different environments**. As you do, you will figure out if an organism can **meet its needs** in each environment.



An organism must **meet all its needs** in order to survive.

You will think about the organism's need for food, water, and avoiding predators. You will also think about its need to live in certain temperatures.

Common Collared Lizard					
Needs for surv	ival				
Food	insects, including grasshoppers and crickets				
Water	only needs a little bit of water to drink occasionally				
Avoid predators roadrunners, coyotes					
Temperature	needs to live in areas with warm temperatures so it can keep its body warm				

Let's look at an example first. This **organism** is called the common collared lizard.

This card gives information about four of the organism's survival needs. We can use this card to learn about the needs of the organism.

	Desert				
What is it like in this environment?	The deserts can be a harsh environment because it is very warm and dry, but many plants and animals live there.				
Temperature	warm throughout the year, very hot in the summer				
Rain	not much rain				
Plants	cacti, small shrubs				
Animals	mice, hawks, coyotes, insects				

## This is an example of an **environment card**.

Let's think about whether the **common collared lizard** can meet its needs in the **desert environment**.

### Environments and Survival @Home Lesson 2



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Find the **Needs for Survival** pages.

# We can use the information on the cards to **complete the tables** on the first page.

# Let's look at an example table about the **common collared lizard** surviving in the **desert**.

Environment	Needs	Can the organism meet this need in this environment?		et this ent?
Desert	Food	Yes	No	Maybe
	Water	Yes	No	Maybe
	Avoid predators	Yes	No	Maybe
		Yes	No	Maybe

#### Organism:

is likely / not likely to survive in a desert environment.



### We can record the name of the organism, common collared lizard, on the line.

				Common	Collared Lizard
Environment	Needs	Can the or need in thi	ganism me s environm	et this ent?	
Desert	Food	Yes	No	Maybe	Needs for survivol
	Water	Yes	No	Maybe	Water         Areacts, including prostdoppers and           Avoid presdarogy         only needs a listic p.           Tame         Tame
	Avoid predators	Yes	No	Maybe	verature needs to key in areas with warm term
		Yes	No	Maybe	" Parcilues so k con

common collared lizard Organism:

likely / not likely to survive in a desert environment. is

## We can record the organism's other need, **temperature**, in the last row.

Environment	Needs	Can the organism meet this need in this environment?		: this nt?
Desert	Food	Yes	No	Maybe
	Water	Yes	No	Maybe
	Avoid predators	Yes	No	Maybe
	Temperature	Yes	No	Maybe

Organism: \_\_\_\_\_\_common collared lizard

is likely / not likely to survive in a desert environment.





# The lizard needs insects for **food**, and the desert has **insects**.

# The lizard can meet its need for **food** in this environment, so we can circle **Yes** in **Column 3**.

Environment	Needs	Can the organism meet this need in this environment?			this :?
Desert	Food		Yes	No	Maybe
	Water		Yes	No	Maybe
	Avoid predators		Yes	No	Maybe
	Temperature		Yes	No	Maybe

Organism: \_\_\_\_\_ common collared lizard

is likely / not likely to survive in a desert environment.



The lizard **needs water**, **but not much**. The desert **doesn't have a lot of rain**, but that is probably okay for the lizard.

# Because we think the lizard can meet its need for **water** in the desert, we can circle **Yes** in **Column 3**.

Environment	Needs	Can the organism meet this need in this environment?		
Desert	Food	Yes	No	Maybe
	Water	Yes	No	Maybe
	Avoid predators	Yes	No	Maybe
	Temperature	Yes	No	Maybe

Organism: \_\_\_\_\_common collared lizard

is likely / not likely to survive in a desert environment.





Needs for survival		
Food	insects, including grasshoppers and crickets	Desert
Water	only needs a little bit of water to drink occasionally	
Avoid predators	roadrunners, coyotes	
Temperature	needs to live in with warm temperatures so it can keep its	
	What is it like in this       The distribution         What is it like in this       The distribution         Without is it like in this       The distribution         Warm it       Warm it         Rain       not much         Plants       Cacet, sme         Animals       mice, haw	eserts can be a harsh ment because it is very and dry, but many plants mads live there. roughout the year, very e summer rain il shrubs ts. coyotes, insects

One of the lizard's **predators is the coyote**, which lives in the desert. If the lizard can hide or run away, **it might survive here**.

# The lizard might be able to meet its need for **avoiding predators** in the desert, but we don't know for sure, so we can circle **Maybe** in **Column 3**.

Environment	Needs	Can the organism meet this need in this environment?		
Desert	Food	Yes	No	Maybe
	Water	Yes	No	Maybe
	Avoid predators	Yes	No	Maybe
	Temperature	Yes	No	Maybe

Organism: \_\_\_\_\_ common collared lizard

is likely / not likely to survive in a desert environment.

### **Common Collared Lizard**





The lizard **needs to live in warm temperatures** to keep its body warm. The desert has very warm temperatures.

# Because we think the lizard can meet its **temperature need** in the desert environment, we can circle **Yes** in **Column 3**.

Environment	Needs	Can the organism meet this need in this environment?		
Desert	Food	Yes	No	Maybe
	Water	Yes	No	Maybe
	Avoid predators	Yes	No	Maybe
	Temperature	Yes	No	Maybe
Organism: common collared lizard				

is likely / not likely to survive in a desert environment.

### **Red-Eyed Tree Frog**



#### Alpine Tundra



Tropical Forest



Now, you will investigate to figure out if another organism, a **red-eyed tree frog**, can meet its needs in different environments.
# Here is information about the red-eyed tree frog's **needs for survival**:

#### **Red-Eyed Tree Frog**



Needs for survival	
Food	insects, including crickets and flies
Water	need a lot of water to keep their skin moist, so they live in environments where there is a lot of rain
Avoid predators	bats, snakes, birds
Temperature	warm to hot

#### Analyzing the evidence source Please respond in the chat

How did working with the organism and environment cards help build our understanding of the key concepts? Key concepts:

When it's easy for organisms to meet their needs in their environment, they are likely to survive.

When it's hard for organisms to meet their needs in their environment, they are not likely to survive.



We'll keep thinking about what makes organisms more likely or less likely to survive. We'll read about how earthworms survive underground.

Using the digital library? Find the book at <u>tinyurl.com/AMPEAS-63</u> Watching a read-aloud video? Find the video at <u>tinyurl.com/AMPEAS-02</u>



Turn to page 3, Contents.

In the Contents, we see that **earthworms** have a lot of needs.



Just like the organisms we investigated in our last lesson, earthworms have to **meet their needs in their environment**.

They need **food** and **water**, they need to **stay cool**, and they need to **avoid predators**.



#### Read page 4.

Every place on Earth is an **environment**. There are many kinds of environments.

Earthworms live in an **underground environment**.

# We have been thinking about how living things survive in their **environments**.



all the living and nonliving things in an area

#### Introduction

No matter where in the world you go, you will find animals, plants, and other organisms. Every place on Earth is an **environment** where **organisms** live. There are wet environments and dry environments. There are hot environments and cold environments. There are environments high in the trees and environments underground.

This book is about a type of organism that lives in an underground environment. It is about earthworms.



What are some of the **living and nonliving things** you see in the earthworms' underground environment?



# Read the rest of the book.

#### Earthworms Need Air

Just like people, earthworms need air. When people breathe, you see their bellies moving in and out. You won't see that in an earthworm. To breathe, an earthworm takes in air through its skin!

> To take in air, an earthworm's skin needs to be damp. Damp soil is a good environment for an earthworm. The earthworm can breathe there. If an earthworm dries out, it is not likely to survive because it can't get the air it needs.

> > Amplify.

#### Earthworms Need to Protect Themselves

Living underground protects earthworms from some **predators** that might eat them. But some predators live underground, too! Moles are furry animals with tiny eyes. They dig in the soil. When moles come near, earthworms can feel the soil shaking. They try to get away.

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Birds are also predators of earthworms. Some birds stand on the ground and listen for earthworms moving under them. The birds try to pull earthworms out of their burrows. Earthworms hold on to the soil with their tiny hairs. Sometimes the bird catches the earthworm, but sometimes it doesn't.

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Sometimes, when a bird pulls on an earthworm, the end of its tail breaks off. The bird is left with just a piece of the tail. The earthworm can move away and survive. Later, the tail grows back. Sometimes the bird gets the whole earthworm, though. Earthworms are not likely to survive if there are lots of predators in their environment.

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#### Earthworms Need to Stay Cool

·)

Earthworm skin is good for breathing, but it is not good for protection from sunlight. If earthworms are out in the sun for too long, they get too hot and dry up. Earthworms need to stay cool. They protect themselves from sunlight by staying underground. They don't usually come out unless it's dark.

#### Analyzing the evidence source Please respond in the chat

How did reading *Earthworms Underground* help build our understanding of the key concepts? Key concepts:

When it's easy for organisms to meet their needs in their environment, they are likely to survive.

When it's hard for organisms to meet their needs in their environment, they are not likely to survive. Evidence sources work together

Please respond in the chat

How did the two evidence sources, and the two key concepts they supported, work together to bring students to the Chapter 1 explanation? Chapter Question: Why are snails with yellow shells not surviving well?

**Explanation:** The snails with yellow shells are less likely to survive because it's harder for them to avoid being eaten by their predator, the song thrush bird.

#### Coherent <u>remote</u> instruction

Chapter 1 @Home Teacher Outline

@Home Lessons 1-5

Chapter 1 @Home at a Glance

Chapter 1 Question: Why are the snails with yellow shells not surviving well? (Lesson 1)

#### Investigation Question:

What makes organisms in a population more likely to survive or less likely to survive? (Lessons 2-4)

#### Key concepts:

- When it's easy for organisms to meet their needs in their environment, they are likely to survive. (Lesson 4)
- When it's hard for organisms to meet their needs in their environment, they are not likely to survive. (Lesson 4)
- Vocabulary:
  - o engineer (Lesson 1)
  - organism, survive, inference (Lesson 2)
  - environment, predator, trait (Lesson 3)
  - population, data, reproduce (Lesson 4)
  - explanation (Lesson 5)



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#### Breakout groups

How can an understanding of the coherent structure of each chapter inform instructional decisions you make when teaching remotely?













## Plan for the day

- Introduction and framing
- Phenomenon at the unit level
- Program Hub
- Constructing explanations at the chapter level
  - Reflection and closing

### Head or hands reflection

Reflect independently, then volunteer to share

Based on our work today with the unit storyline and the role of evidence sources....

**Head:** What will you keep in mind while you plan?

**Hands:** What will you do when you're teaching?



## During this workshop did we meet our objectives?

Do you feel able to...

- Describe how students' conceptual understanding builds through the unit
- Explain how students figure out the phenomenon throughout the unit
- Leverage understanding of the Amplify Science instructional approach to make instructional decisions while teaching remotely

## Upcoming LAUSD Office Hours

#### **Twice Monthly from 4-5pm:**

- Thursday, 2/11
- Thursday, 2/25
- Thursday, 3/11
- Thursday, 3/25



#### http://bit.ly/TK-6OfficeHours

### Program Hub: Self Study Resources



#### Back to school national webinar series



#### **Topics included:**

- Remote and hybrid learning support
- Navigation support
- What's new for 2020-2021
- Planning support
- Curriculum overview

## bit.ly/BTSwebinars

## Additional Amplify resources



#### **Caregivers site**

Provide your students' families information about Amplify Science and what students are learning **amplify.com/amplify-science-familyresource-intro/** 

## Additional Amplify resources



#### **Program Guide**

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

https://cascience.wpengine.com/conte nt/welcome-k-8/integrated-model/

#### **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.

## Please provide us feedback!

#### Respond to the survey that has been dropped into chat

Presenter name:

Date: xx



