

# Amplify Science

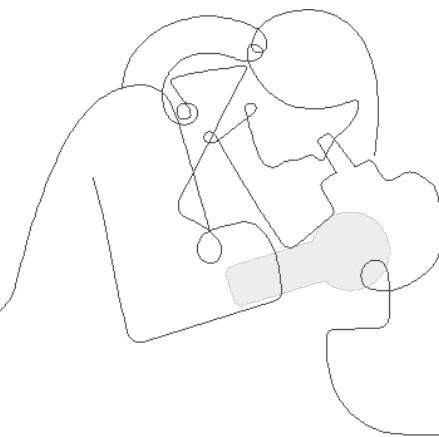
## Animal and Plant Defenses Unit Deep Dive

Grade 1

LAUSD

Date: September, 2023

Presented by



# Opening Reflection

What are your goals for student outcomes as a result of attending this professional workshop?

Participant Notebook

## Reflection

Use the provided spaces as a place for reflection throughout the session.

### Session goals and student outcomes

What Connect the workshop goal(s) to an outcome you envision for your students.	Why Reflect on why you want this outcome for your students.	How How will your students achieve the outcome? Reflect on what you learned during the workshop that will impact student outcomes.

# Name

## Amplify Facilitator

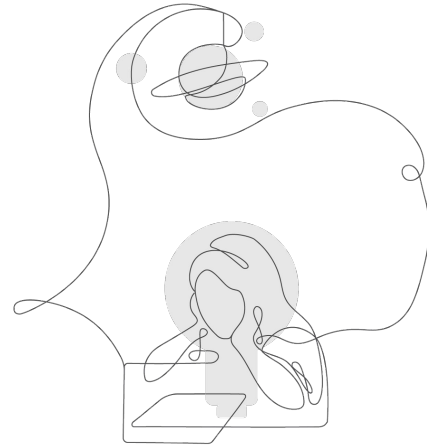
- Add your experience here.
- 
- 

### [Insert Photo]

**For an easy way to do it:**

- Right click on this image.
- Click “Replace Image.”
- Choose how you’ll upload your image.
- Reposition your photo if necessary.

Please write your name on the index card.





# Amplify's Purpose Statement

Dear teachers,

You do a job that is nearly impossible and **utterly essential**.

**We are in your corner** – extending your reach, saving you time, and enhancing your understanding of each student.

**Thank you for working with us** to craft rigorous and riveting learning experiences for your classroom.

We share your goal of **inspiring all students to think deeply, creatively, and for themselves**.

Sincerely,  
Amplify

# 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.

# Today's Logistics



- Lunch break from 11:30 - 12:30
- The day ends at 3:00
- Please be sure to sign in
- Bathrooms
- Parking lot for questions or concerns
- If you need to stand, feel free to but please stay engaged



# Schoolology



[← Back to Schoolology Home Page](#)

## LMS App Center

The LMS App Center provides a catalog of District-approved digital content and learning tools (including digital components of adopted textbooks) that are available for classroom teachers and students to access within the learning management system, Schoolology.

For information on District-approval policies and procedures, please visit: [udipplausd.net](#).

- To search the full list of digital learning tools, click "Submit".
- To search by Publisher Name or Textbook Title, type in a word associated to your adopted publisher, then click "Submit".
- To narrow your search with filters such as Content Area, Grade Level, or Content Type, select from the dropdown menu, then click "Submit".

To learn more about using the LMS App Center, please refer to the following video overview.

Publisher Name: Starts With

Content Area: All

Grade Level: All

Content Type: All

Textbook Title: Starts With

All Amplify Products



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[← Search Again](#)

### Amplify

Content Area: ELA  
Grade Level: ES  
Content Type: Supplemental  
Integration Type: App (Left Navigation)  
Purchase Type: District and School  
[Getting Started Guide](#)  
Other Info: School licenses required  
mCLASS  
CKLA  
Amplify Reading  
Amplify Science  
Creative

Vendor Support Desk:  
P: 800.823.9969  
E: [help@amplify.com](mailto:help@amplify.com)  
S: [amplify.com/support/](https://amplify.com/support/)  
Textbook Title(s):  
NA



Vendor Support Desk:  
P: 800.823.9969  
E: [help@amplify.com](mailto:help@amplify.com)  
S: [amplify.com/support/](https://amplify.com/support/)  
Textbook Title(s):  
NA

op is for  
only)

# Join Amplify Science Schoology Group

To join Amplify Science Schoology  
ES Group: W4PK-W466-63F5B

# Logging in (demo account)

## Safari or Chrome

1. Go to **learning.amplify.com**
2. Select **Log in with Google**
3. If you're already logged in with other Google accounts, click **Use another account**
4. Enter teacher demo account credentials
  - **californiasci\_\_@pd.tryamplify.net**
  - Password: **AmplifyNumber1**

**Steps 1-2**

Welcome to **Amplify**

**G** Log In with Google

**C** Log In with Clever

**A.** Log In with Amplify

SSO login

**Step 3**

Choose an account to continue to Amplify Curriculum Delivery Application

**T** Teacher Lambertsen  
t.lambertsen@tryamplify.net

**S** Sophia Lambertsen  
slambertsen@amplify.com

Use another account

To continue, Google will share your name, email address, language preference, and profile picture with Amplify Curriculum Delivery Application. Before using this app, you can review Amplify Curriculum Delivery Application's [privacy policy](#) and [terms of service](#).

**Step 4**

**Sign in** to continue to Amplify Curriculum Delivery Application

Email or phone

[Forgot email?](#)

To continue, Google will share your name, email address, language preference, and profile picture with Amplify Curriculum Delivery Application. Before using this app, you can review Amplify Curriculum Delivery Application's [privacy policy](#) and [terms of service](#).

Create account **Next**

**Hi Teacher**

nationalsci20@pd.tryamplify.net

Enter your password

☐ Show password

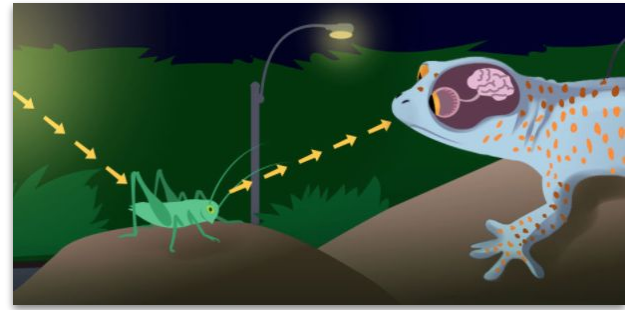
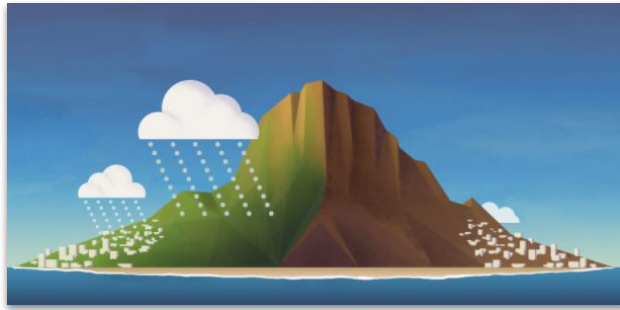
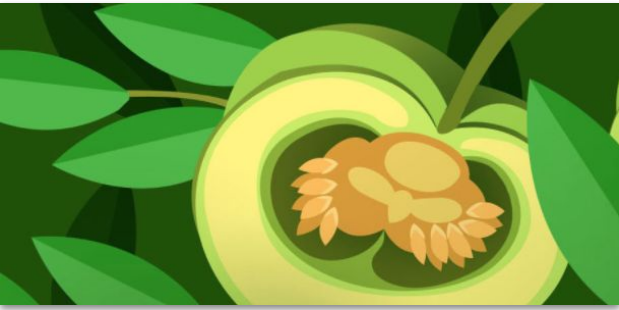
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[Forgot password?](#) **Next**

# LAUSD SUMMER INSTITUTE 2023

## Session 1 Unit 1 Deep Dive





## Plan for the day

- Introduction and framing
- Unit Internalization
- Digging into Chapter 1
- Model Lesson
- Digging into Chapter 2
- Planning
- Closing



# Ice Breaker!

## Who do we have in the room today?

- Name & School
- Have you taught Amplify Science before and if so, for how long?
- What are your goals for student outcomes after attending this student workshop today?



# Navigation Temperature Check

Rate yourself on your comfort level accessing Amplify Science materials and navigating a digital curriculum.

1 = Extremely Uncomfortable

2 = Uncomfortable

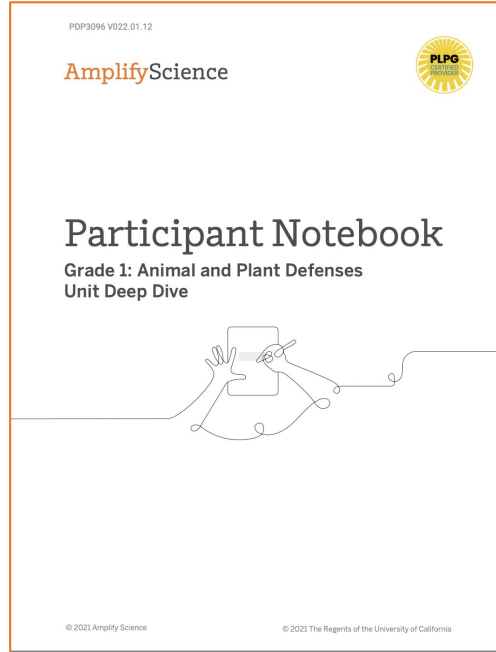
3 = Mild

4 = Comfortable

5 = Extremely Comfortable

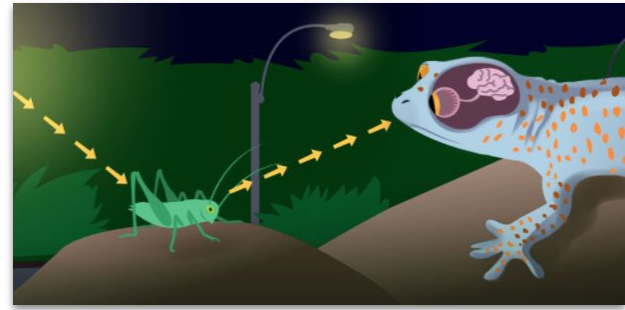
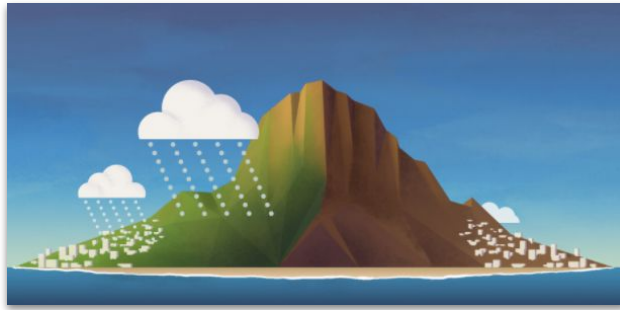
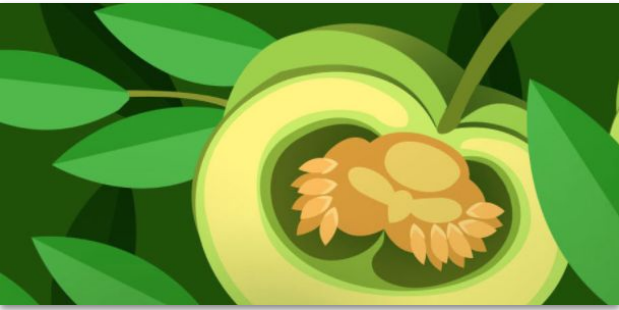


# Participant Notebook



Hardcopy and digital

<https://bit.ly/3R4QxZi>



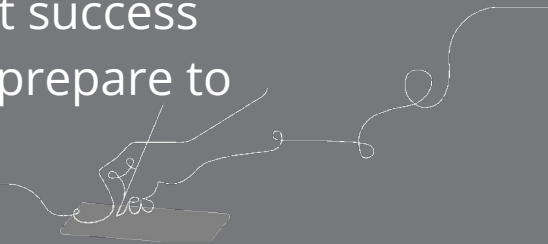
## Plan for the day

- Introduction and framing
- **Unit Internalization**
- Digging into Chapter 1
- Model Lesson
- Digging into Chapter 2
- Planning
- Closing

# Goals for the day:

By the end of the day, you will:

- ❑ Experience how all the instructional components fit together in the context of the unit
- ❑ Gain a deeper understanding of the purposeful sequencing of each activity and lesson within a chapter
- ❑ Become more familiar with multimodal instruction and how it provides multiple at bats to support student success
- ❑ Use the Amplify curriculum and resources to prepare to teach



# Year at a Glance: Grade 1

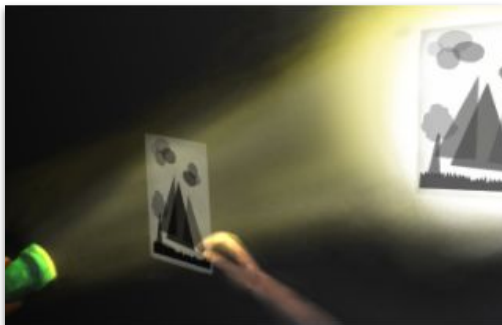


Animal and Plant  
Defenses

**Domain:** Life Science

**Unit type:** Modeling

**Student role:** Marine  
Scientist



Light and Sound

**Domain:** Physical Science

**Unit type:** Engineering  
Design

**Student role:** Light and  
Sound Engineer



Spinning Earth

**Domain:** Earth and Space  
Science

**Unit type:** Investigation

**Student role:** Sky Scientist

# Unit Overview



# Phenomenon based learning





# Phenomenon-based learning and teaching

A scientific phenomenon is an **observable event** that occurs in the universe that we can use science ideas to explain or predict.

# Comparing topics and phenomena

Topic-based	Phenomenon-based
Ocean habitats	A sea turtle can survive in an ocean habitat where sharks live

# Comparing topics and phenomena

## A shift in science instruction

from learning about  
(like a student)



to figuring out  
(like a scientist)

# Phenomena-based Instruction

**Inquire** like a scientist.

**Think** like a scientist.

**Quantify** like a scientist.

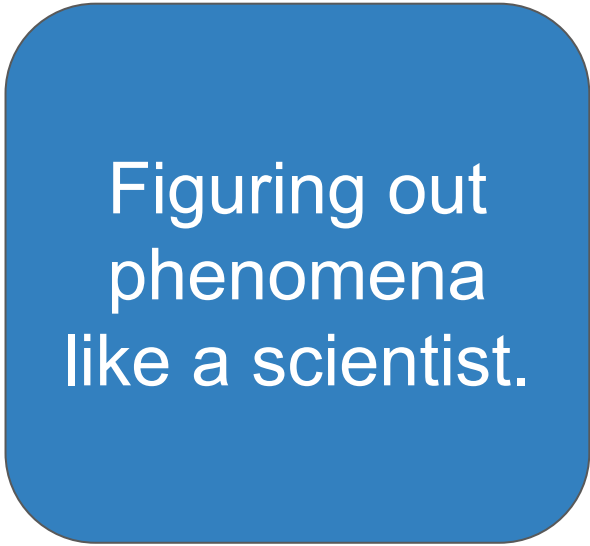
**Read** like a scientist.

**Talk** like a scientist.

**Write** like a scientist.

**Critique** like a scientist.

**Argue** like a scientist.



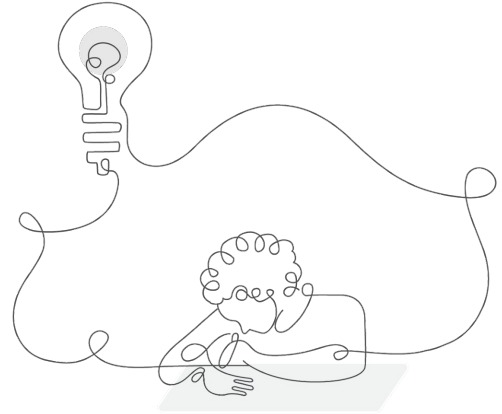
Figuring out  
phenomena  
like a scientist.

# Previewing the unit

## Introducing the phenomenon

Amplify Science units are designed around complex phenomena that drive student learning through the unit.

Let's look at the phenomenon, or observable event, students will figure out in your unit.



We are going to be **scientists** and investigate animals and plants.

First, we will look at a picture and talk about what we see.





What do you know about  
**aquariums?**



**Scientists ask questions** to learn about the world. They ask questions about animals and plants.

We will ask questions to learn more about animals and plants, too.



What **questions** do you have about the animals and plants that live in the aquarium?



## **Unit Question**

How do animals and plants survive?

# Animal and Plant Defenses Classroom Wall

## **Unit Question**

How do animals and plants survive?

## **Key Concepts**

## **Vocabulary**

## Vocabulary



**scientist**

someone who investigates the natural world

# Animal and Plant Defenses Classroom Wall

## Unit Question

How do animals and plants survive?

## Key Concepts

## Vocabulary

## Chapter 1 Question

How does Spruce the Sea Turtle do what she needs to do to survive?

scientist



This animal is a **sea turtle**.

A sea turtle named **Spruce** lives at the aquarium.



Soon people from the aquarium will take Spruce **back to the ocean.**

They will let Spruce go.





We are aquarium scientists.



What kind of **questions**  
do you have **about**  
**Spruce** living in the  
**ocean?**

Kids who visit the aquarium are worried that Spruce might not survive in the ocean.

The director of the aquarium needs our help to explain to the kids **how Spruce will survive, or stay alive**, once she is back in the ocean.

# Animal and Plant Defenses phenomenon



# Amplify Science

## Anchoring phenomenon

- Complex and rich
- Drives learning through a whole unit
- Specific and observable
- Relatable at students' developmental level



# Unit Overview



Unit level internalization		
Anchor phenomenon		Student role
3-dimensional learning students engage with to explain the anchor phenomenon:		
DCl: What scientists want to know	SEPs: What scientists do	CCCs: How scientists think
Learning that occurs in Chapter 1	Learning that occurs in Chapter 2	
Learning that occurs in Chapter 3	Learning that occurs in Chapter 4	
Science Background: Key understandings and preconceptions		

# Animal and Plant Defenses

**Problem:** How can a sea turtle survive in the ocean after being released by an aquarium?

**Role:** Marine Scientists

**What:** Students take on the role of aquarium scientists advising an aquarium director by helping answer young visitors' questions about Spruce the Sea Turtle, who will soon be released back into the ocean. They investigate how Spruce can survive in the ocean, particularly since sharks live in the area.



# Coherent storylines



Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive?

5 Lessons



Chapter 2: How can Spruce the Sea Turtle survive where there are sharks?

8 Lessons



Chapter 3: How can Spruce the Sea Turtle's offspring survive where there...

5 Lessons



Chapter 4: How can aquarium scientists explain animal defenses to the children?

# Navigating to the Unit Map

The image shows a digital interface for a unit titled "Animal and Plant Defenses". The main header features the title and "22 Lessons". Below the header is a "Printable Teacher Guide" button. A left sidebar contains a navigation menu with items: "Unit Overview", "Chapters", "Printable Resources", "Planning for the Unit" (highlighted with an orange arrow), "Teacher References", and "Offline Preparation". A central overlay menu also lists these items, with "Unit Map" (highlighted with an orange arrow) selected under "Planning for the Unit". The right panel displays the "Unit Map" content, which includes a title, a "Printable Teacher Guide" button, and a series of sections: "How can a sea turtle survive in the ocean after being released by an aquarium?", "Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive?", "Chapter 2: How can Spruce the Sea Turtle survive where there are sharks?", "Chapter 3: How can Spruce the Sea Turtle's offspring survive where there are sharks?", and "Chapter 4: How can aquarium scientists explain animal defenses to visitors?". Each section contains "Students figure out:" and "How they figure it out:" text.

22 Lessons

## Animal and Plant Defenses

Printable Teacher Guide

- Unit Overview
- Chapters
- Printable Resources
- Planning for the Unit
- Teacher References
- Offline Preparation

Unit Map

22 Lessons

Printable Teacher Guide

### Unit Overview

What's in This Unit?

Earth is inhabited by a sea of life, each of these kinds of life the nearly endless variety getting food, water, and function in ways that are

Read more

### Chapters

Chapter 1: How

LESSON 1.1 Pre-Unit Assessment

### Unit Map

How can a sea turtle survive in the ocean after being released by an aquarium?

Working in their role as aquarium scientists, students apply their understanding of plant and animal defense structures as they explain to aquarium visitors how a sea turtle or other sea animals at the aquarium could defend themselves from ocean predators once they are released back into the wild.

**Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive?**

**Students figure out:** Sea turtles have body parts that help them get food, air, and water. In the ocean, there are predators that might try to eat the sea turtle. To survive in the ocean, she needs to avoid being eaten by predators.

**How they figure it out:** By watching videos of animals eating, reading about animals catching their meals in the wild, watering a plant, and closely observing their partners chewing and swallowing, students figure out that living things (including humans) use their body structures to meet their needs. Students review the basic survival needs of organisms through a game and are introduced to a new idea: to survive, animals and plants must avoid being eaten by other animals.

**Chapter 2: How can Spruce the Sea Turtle survive where there are sharks?**

**Students figure out:** The sea turtle has a shell and camouflage that enable her to defend herself from predators. The shell is hard, so predators can't eat her when they try to bite her. The camouflage allows her to blend in with her habitat, which makes it hard for predators to see her.

**How they figure it out:** Students read to find out that animal and plant structures perform specific functions. They observe photographs and videos of animals and plants defending themselves using shells, spines, and camouflage, then create models explaining their ideas about how these defenses work. The chapter ends with a biomimicry workshop in which students, informed by real animal and plant defenses, design ways to protect the sea turtle's food.

**Chapter 3: How can Spruce the Sea Turtle's offspring survive where there are sharks?**

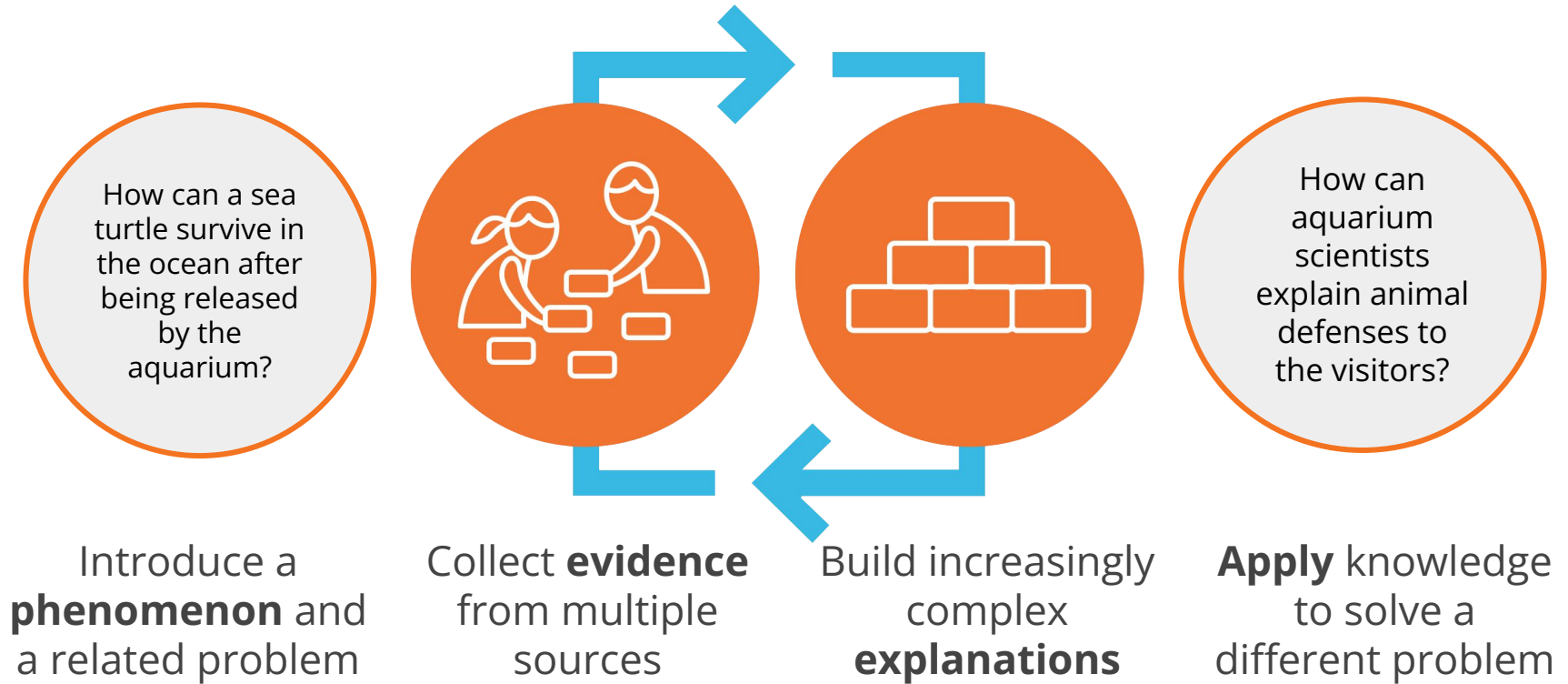
**Students figure out:** When the sea turtle has offspring, they will not look exactly alike, but they will grow up to have hard shells and camouflage, just like their parents. These structures allow them to defend themselves from predators in the same way that the mother sea turtle does. This is because offspring defend themselves in the same way their parents do.

**How they figure it out:** Students use evidence from photos to compare offspring to parent organisms, then role-play interactions between parents and offspring. They read to find out that many animals need their parents to survive while they are young, and that plants grow up without parental care.

**Chapter 4: How can aquarium scientists explain animal defenses to visitors?**

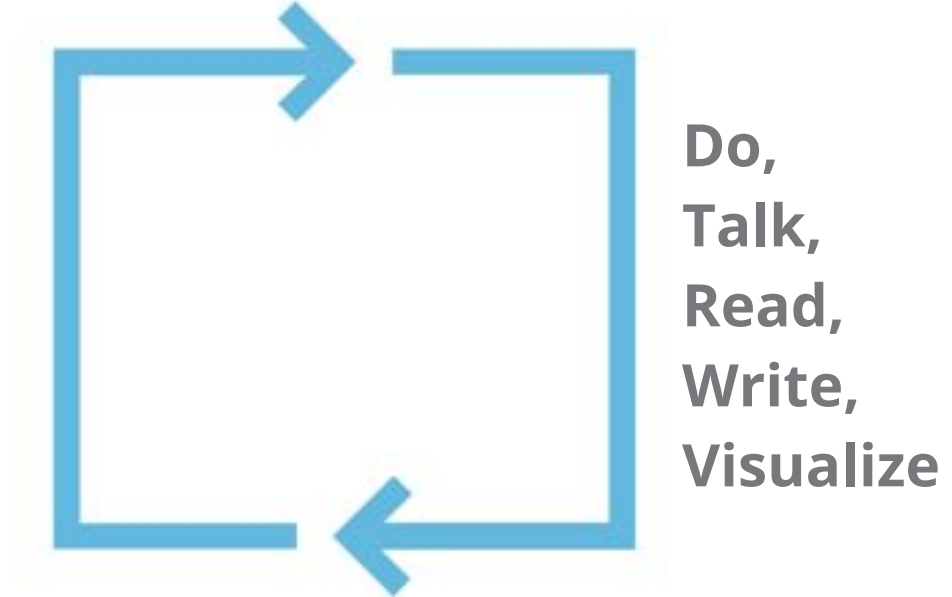


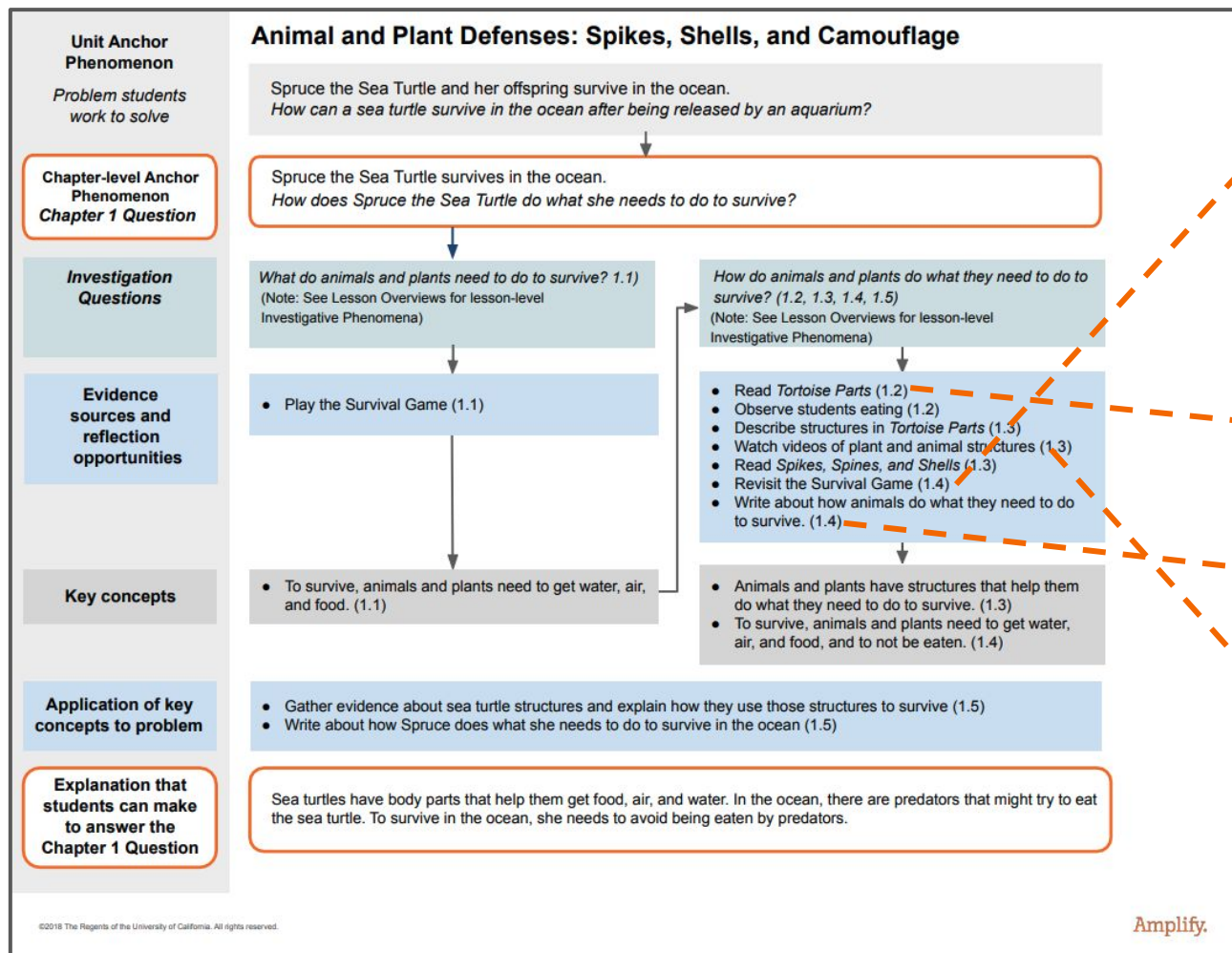
# Amplify Science Approach



# Multimodal instruction

For each key concept, students work with evidence in varied modalities.





Do



Talk



Read



Write



Visualize



# Navigating to the Coherence Flowchart

The screenshot shows a digital interface for a unit titled "Animal and Plant Defenses". The top header includes "22 Lessons" and a "Printable Test" button. A left sidebar lists navigation options: "Unit Overview", "Chapters", "Printable Resources" (highlighted with an orange arrow), "Planning for the Unit", "Teacher References", and "Offline Preparation". A large white overlay titled "Printable Resources" is centered on the page, listing various PDF documents. An orange arrow points from the "Coherence Flowcharts" item in this list to the right. The bottom of the page features three lesson thumbnails: "LESSON 1.1 Pre-Unit Assessment", "LESSON 1.2 Tortoise Parts", and "LESSON 1.3 Animal and Plant Structures".

22 Lessons

## Animal and Plant Defenses

Printable Test

- Unit Overview
- Chapters
- Printable Resources**
- Planning for the Unit
- Teacher References
- Offline Preparation

### Printable Resources

- 3-D Assessment Objectives
- Copymaster Compilation
- Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds
- Multi-Language Glossary
- Print Materials (8.5" x 11")
- Possible Responses
- Coherence Flowcharts**
- Crosscutting Concept Tracker
- Investigation Notebook
- NGSS Information for Parents and Guardians
- Print Materials (11" x 17")

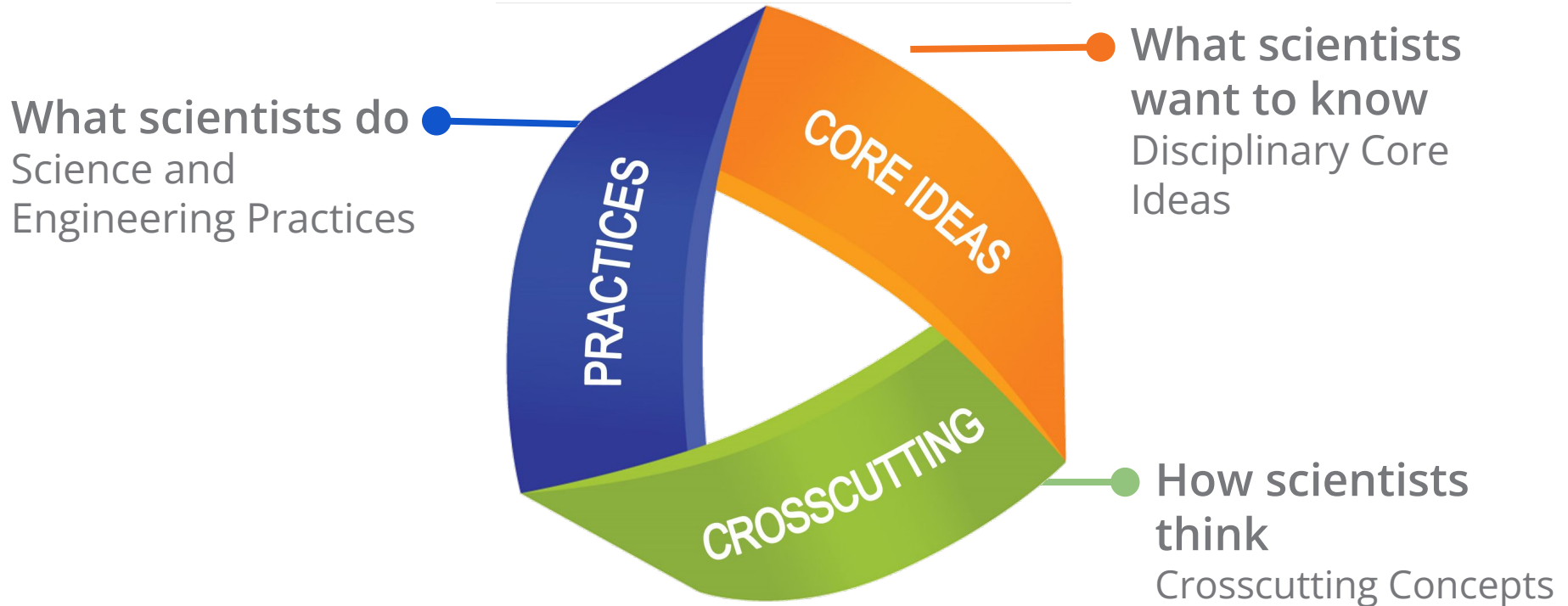
LESSON 1.1  
Pre-Unit Assessment

LESSON 1.2  
Tortoise Parts

LESSON 1.3  
Animal and Plant Structures

# Animal and Plant Defenses & NGSS

Using 3-D teaching and learning for figuring out phenomena



# Navigating to the 3-D Statements

The screenshot displays the 'Animal and Plant Defenses' unit interface, which includes a header with '22 Lessons' and a 'Printable Teacher Guide' button. The main content area is divided into three columns. The left column contains a sidebar with navigation links: 'Unit Overview', 'Chapters', 'Printable Resources', 'Planning for the Unit', 'Teacher References', and 'Offline Preparation'. An orange arrow points to 'Teacher References'. The middle column shows the 'Unit Overview' page with a 'What's in This Unit' section and a 'Chapter 1' section. An orange arrow points to the '3-D Statements' link in the 'Planning for the Unit' section. The right column shows the '3-D Statements' page, which includes a 'Key' section, a 'Unit Level' section, and a 'Chapter Level' section. The 'Unit Level' section contains text about investigating how animals and plants use their structures to meet their needs for survival. The 'Chapter Level' section contains text about analyzing and interpreting data to figure out how all animals and plants need air, water, food, and the ability to defend themselves from being eaten in order to survive. The 'Chapter Targeted 3-D Learning Objectives' section contains text about these objectives being formatively assessed across the chapter. The bottom of the interface shows three lesson cards: 'LESSON 1.1 Pre-Unit Assessment', 'LESSON 1.2 Tortoise Parts', and 'LESSON 1.3 Animal and Plant Structures'.

22 Lessons

## Animal and Plant Defenses

Printable Teacher Guide

- Unit Overview
- Chapters
- Printable Resources
- Planning for the Unit
- Teacher References
- Offline Preparation

### Unit Overview

#### What's in This Unit

Earth is inhabited by a variety of animals and plants. Each of these organisms has evolved unique structures and functions that help them survive in their environment. In this unit, students will learn about the structures and functions of various organisms and how they help them survive. They will also learn about the ways in which organisms defend themselves from predators and environmental threats.

[Read more](#)

### Chapter 1

#### Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive?

Students analyze and interpret data to figure out that all animals and plants need air, water, food, and the ability to defend themselves from being eaten in order to survive (cause and effect). Students apply what they learn in order to explain how all plants and animals, as well as Spruce the Sea Turtle, use their specific structures to grow and survive (structure and function).

#### Chapter Targeted 3-D Learning Objectives

These objectives are formatively assessed across the chapter [see assessment guidance locations noted]


shows a way to defend the aquarium's animal food supply from being eaten by wildlife, and then by making a model of a sea creature's defense against being eaten. By the end of the unit, students will be able to use ideas of structure and function to explain how a wide variety of animals and plants and their offspring defend themselves from being eaten.

LESSON 1.1  
Pre-Unit Assessment


LESSON 1.2  
Tortoise Parts

LESSON 1.3  
Animal and Plant Structures

# Disciplinary Core Ideas: **Animals and Plant Defenses**



Life Science	Physical Science
LS1: From Molecules to Organisms: Structures and Processes ✓	PS1: Matter and Its Interactions
LS2: Ecosystems: Interactions, Energy, and Dynamics	PS2: Motion and Stability: Forces and Interactions
LS3: Heredity: Inheritance and Variation of Traits ✓	PS3: Energy
LS4: Biological Evolution: Unity and Diversity	PS4: Waves and Their Applications in Technologies for Information Transfer
Earth & Space Science	Engineering & Technology
ESS1: Earth's Place in the Universe	ETS1: Engineering Design ✓
ESS2: Earth's Systems	ETS2: Links Among Engineering, Technology, Science, and Society
ESS3: Earth and Human Activity	



# Science and Engineering Practices **Animal and Plant Defenses**

inquiry

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models ✓
3. Planning and carrying out investigations

math

4. Analyzing and interpreting data
5. Using mathematics and computational thinking

language

6. Constructing explanations (for science) and designing solutions (for engineering) ✓
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information ✓



# Crosscutting Concepts: **Animal and Plant Defenses**



## Crosscutting Concepts

1. **Cause and Effect**
2. **Structure and Function** ✓
3. **System and System Models**
4. **Scale, Proportion and Quantity**
5. **Stability and Change**
6. **Energy and Matter**
7. **Patterns**

# Animal and Plant Defenses 3D Statements

## 3-D Statements

### Key

Practices Disciplinary Core Ideas Crosscutting Concepts

### Unit Level

Students investigate how animals and plants, as well as their offspring, use their structures to meet their needs for survival (structure and function). Students apply what they learn by developing models and constructing explanations to communicate their ideas about how aquarium animals use their defenses to survive (cause and effect).

# Navigating to Materials and Preparation

22 Lessons

Animal and Plant Defenses

Printable Teacher Guide

Unit Overview

Chapters

Printable Resources

Planning for the Unit

Teacher References

Offline Preparation

Unit Overview


What's in This Unit?

Earth is inhabited by a staggering number of different kinds of living things. Each of these kinds of living things has evolved the nearly endless variation we see in the way they are getting food, water, and oxygen. They also function in ways that enable them to survive.

Read more

Chapters

Chapter 1: How does an animal defend itself?



LESSON 1.1  
Pre-Unit Assessment

Unit Overview

Chapters

Printable Resources

Planning for the Unit

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

Opportunities for Unit Extensions

Offline Preparation

Materials and Preparation

Materials at a Glance

Note: Check and follow your district's safety regulations pertaining to the use of proper equipment and procedures for students participating in hands-on science activities. Please refer to the *Science Safety Handbook for California Public Schools, California Department of Education* [2014].

Items Provided in the *Animal and Plant Defenses Kit*

This is a complete list of all the kit-provided materials needed to present the class of 36 students. For reordering information, call Amplify at 1 (800) 823-9345.

Note: Your Amplify Science kit may contain additional quantities of some items.

Quantity needed	Manipulatives
144	erasers, pencil-top erasers
32 oz.	clay
37	cups, plastic, 16 oz.
73	cups, paper, 9 or 7 oz.
150	cups, plastic, 2 oz.*
19	combs, plastic
72	tokens, plastic
36	rings, metal
40	tissue paper, various colors, sheets*
800	toothpicks

\*consumable item

Quantity in kit	Print materials
1	<i>Animal and Plant Defenses Investigation Notebook</i>
9 sets	Survival Game Role Cards (4 cards)

shows a way to defend the aquarium's animal food creature's defense against being eaten. By the end of the unit, students will be able to explain how a wide variety of animals and plants and animals defend themselves.

Why?

Structures

Preparation at a Glance

The information provided here is an overview of the amount of time we estimate it will take you to prepare the materials for each lesson of the *Animal and Plant Defenses* unit. This does not include the time you will need to spend reading the instructional guide, previewing the student activities and student books, or reviewing students' work.

The Materials and Preparation sections in the Lesson Brief of each lesson (in the instructional guide) include detailed preparation steps to be completed before the day of each lesson as well as steps to be done immediately before each lesson. This preparation time is summarized in the tables below to assist in your planning. We suggest actually calendaring your lessons, taking particular note of the lessons that require more preparation time.

Asterisks in the tables denote that preparations for those lessons have self-contained tasks that are easily handed off to adult volunteers. Doing so can reduce or eliminate prep time in those instances. Plan ahead by inviting adult volunteers to come in a few days before these lessons. Note: Amount of time listed for each lesson is the total estimated amount of preparation time needed and not just the time for any self-contained task(s) listed.

Chapter 1

Lesson	Title	Preparation time frame (in minutes)
1.1	Pre-Unit Assessment: Students' Initial Explanations	15–45: Create all class charts and key concepts for unit.* (Alternatively, you can create class charts and key concepts before each lesson in which they are needed.) Prepare card sets and cups for Survival Game. Make copies of Recycled Materials Request.*
1.2	Tortoise Parts	30–60 (optional): Make copies of the Investigation Notebook rather than purchase additional copies.*
1.2	Tortoise Parts	20: Create card for What Scientists Do chart. Prepare for Carrot Eating activity.
1.3	Animal and Plant Structures	15: Write Structure-Function Language Frames.* Create card for What Scientists Do chart.
1.4	Surviving by Not Being Eaten	25: Prepare Word Rings.* Write Explanation Language Frames.*
1.5	Explaining Sea Turtle Survival	15: Write Explanation Language Frames.*

Chapter 2


Lesson	Title	Preparation time frame (in minutes)
--------	-------	-------------------------------------

# Explore or review the key planning documents

Spend a few more minutes exploring or reviewing the documents on the Unit Landing Page.

22 Lessons

## Animal and Plant Defenses

 Printable Teacher Guide

Unit Overview

Chapters


Printable Resources

Planning for the Unit ▾

Teacher References ▾

Offline Preparation

### Unit Overview




#### What's in This Unit?

Earth is inhabited by a staggering variety of animals and plants, with incredible variation in size, shape, color and parts. *How does each of these kinds of living things continue to survive? How do their offspring survive? What does their survival have to do with the nearly endless variation we observe among living things?* All living things must meet their basic survival needs, including getting food, water, and oxygen, and avoiding being eaten by other animals. The body parts (structures) of animals and plants function in ways that enable living things to meet their survival needs. Understanding how structures help organisms and


[Read more >](#)

### Chapters


Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive? ⓘ



LESSON 1.1  
Pre-Unit Assessment



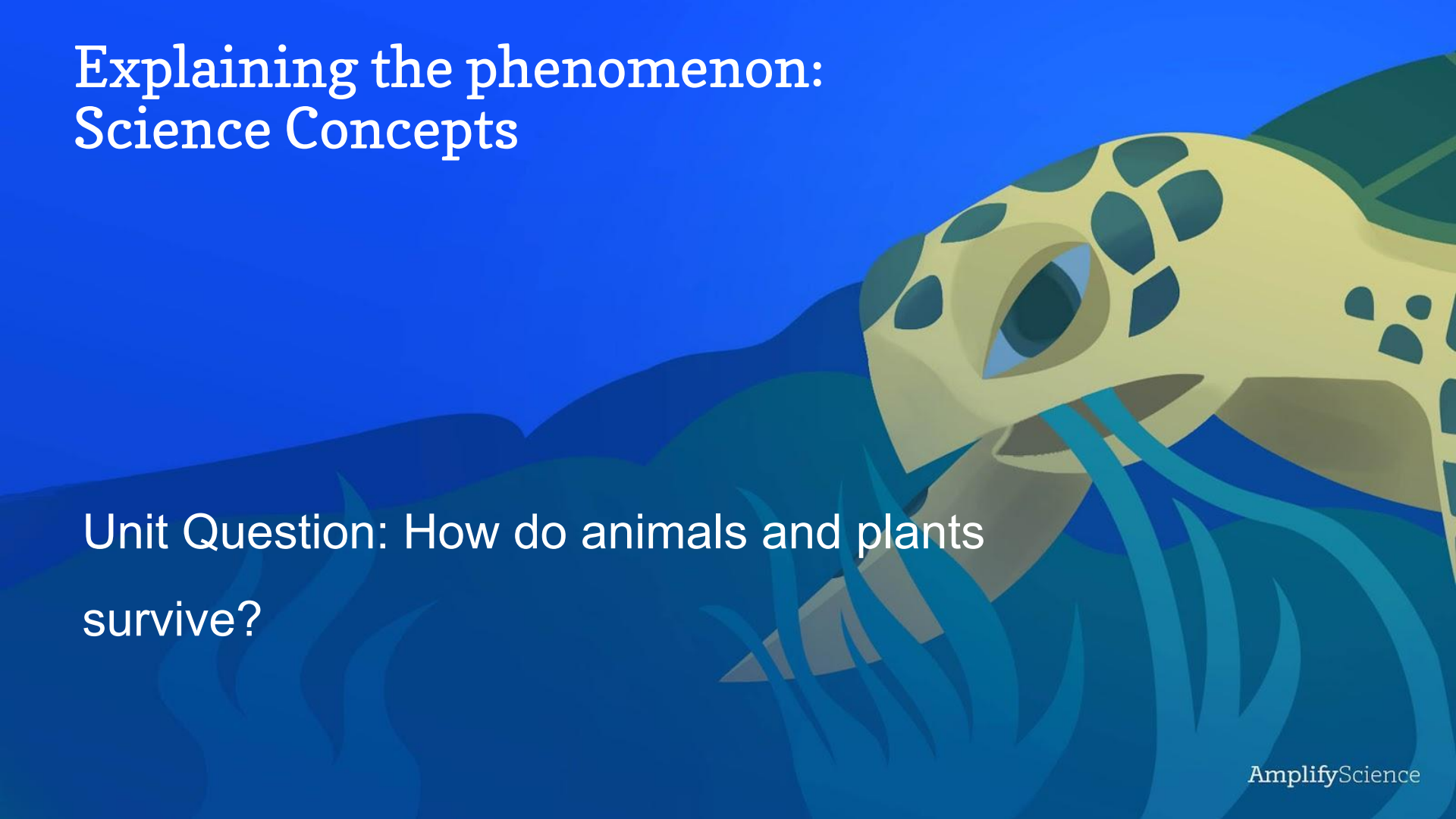
LESSON 1.2  
Tortoise Parts



LESSON 1.3  
Animal and Plant Structures

# Explaining the phenomenon: Science Concepts

Unit Question: How do animals and plants  
survive?



# Lesson Overview Compilation

22 Lessons

## Animal and Plant Life

Printable Teacher Guide

- Unit Overview
- Chapters
- Printable Resources
- Planning for the Unit
- Teacher References
- Offline Preparation

### Unit Overview


#### What's in This Unit?

Earth is inhabited by a staggering number of different kinds of living organisms, each of these kinds of living organisms having evolved the nearly endless variation in form and function that enable them to survive in their environment. Spruce the Sea Turtle is a concrete example of how organisms survive, particularly in terms of their offspring's survival, and how they defend themselves from predators. Students take on the role of Spruce the Sea Turtle and learn about how defense mechanisms work in the wild. They also learn about how defense mechanisms work in the wild.

[Read more](#)

### Chapters

#### Chapter 1: How does Spruce the Sea Turtle survive?



LESSON 1.1  
Pre-Unit Assessment

22 Lessons

## Animal and Plant Life

Printable Teacher Guide

- Unit Overview
- Chapters
- Printable Resources
- Planning for the Unit
- Teacher References
- Offline Preparation

### Unit Overview


#### What's in This Unit?

Earth is inhabited by a staggering number of different kinds of living organisms, each of these kinds of living organisms having evolved the nearly endless variation in form and function that enable them to survive in their environment. Spruce the Sea Turtle is a concrete example of how organisms survive, particularly in terms of their offspring's survival, and how they defend themselves from predators. Students take on the role of Spruce the Sea Turtle and learn about how defense mechanisms work in the wild. They also learn about how defense mechanisms work in the wild.

[Read more](#)

### Chapters

#### Chapter 1: How does Spruce the Sea Turtle survive?



LESSON 1.1  
Pre-Unit Assessment

## Unit Overview

### Chapters

### Printable Resources

### Planning for the Unit

#### 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

#### Opportunities for Unit

#### Extensions

### Offline Preparation

## Lesson Overview Compilation

### Lessons in This Unit

#### Chapter 1 Lessons

Lesson 1.1: Pre-Unit Assessment

Lesson 1.2: Tortoise Parts

Lesson 1.3: Animal and Plant Structures

Lesson 1.4: Surviving by Not Being Eaten

Lesson 1.5: Explaining Sea Turtle Survival

#### Chapter 2 Lessons

Lesson 2.1: Whose Lunch Is This?

Lesson 2.2: Sharp Structures for Eating

Lesson 2.3: Introducing Modeling

Lesson 2.4: Modeling Shells and Armor

Lesson 2.5: Modeling Spikes

Lesson 2.6: Modeling Camouflage

Lesson 2.7: Explaining Defenses

Lesson 2.8: Defending the Food Supply

#### Chapter 3 Lessons

Lesson 3.1: Introducing Offspring

Lesson 3.2: Parents and Offspring

Lesson 3.3: Offspring Defenses

Lesson 3.4: Young Offspring

Lesson 3.5: Exploring Parental Care

#### Chapter 4 Lessons

Lesson 4.1: Frog Models

Lesson 4.2: Making Models for the Exhibit

Lesson 4.3: Aquarium Animal Exhibit

Lesson 4.4: End-of-Unit Assessment

### Chapters at a Glance

#### Unit Question

How do animals and plants survive?

Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive?

#### Chapter Question

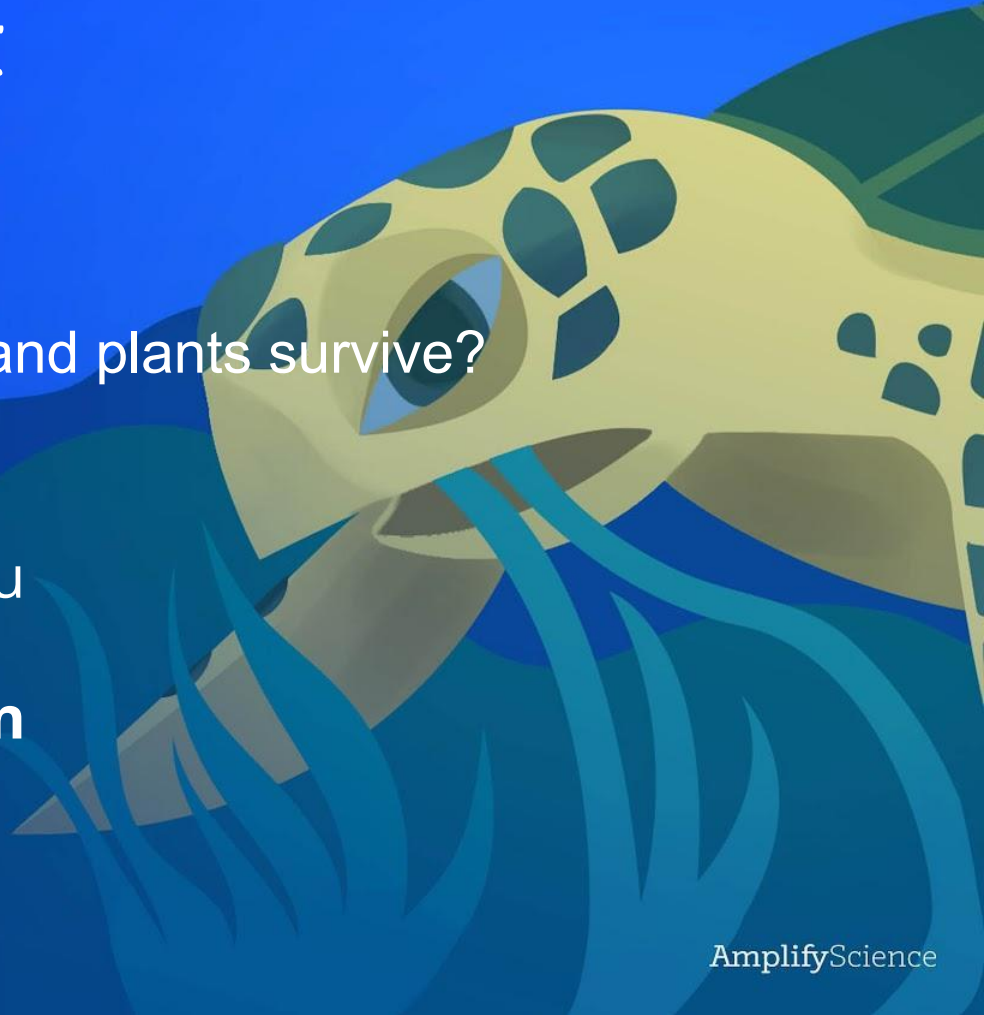
How does Spruce the Sea Turtle do what she needs to do to survive?



# Animal and Plant Defenses

Unit Question: How do animals and plants survive?

What **science concepts** do you think students need to understand in order to **explain the phenomenon**?



# Navigating to the Progress Build

The image shows a screenshot of a digital learning platform interface for a unit titled "Animal and Plant Defenses". The interface is divided into several sections:

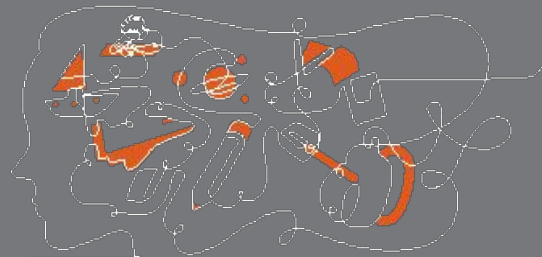
- Unit Overview:** Contains a "What's in This Unit?" section with a paragraph about Earth's inhabitants and a "Read more" link. Below this is a "Chapters" section with "Chapter 1: How does..." and a "LESSON 1.1 Pre-Unit Assessment" link.
- Navigation Menu:** A vertical list on the left includes "Unit Overview", "Chapters", "Printable Resources", "Planning for the Unit" (highlighted with an orange arrow), "Teacher References", and "Offline Preparation".
- Progress Build:** A large section on the right titled "Progress Build" containing a detailed description of the build's purpose and structure. It includes sections for "Prior knowledge (preconceptions)", "Progress Build Level 1: Avoiding Being Eaten", "Progress Build Level 2: Structures for Defense", and "Progress Build Level 3: Offspring's Structures".
- Unit Overview (Right):** A smaller version of the "Unit Overview" section is visible behind the "Progress Build" section.

An orange arrow points from the "Planning for the Unit" menu item to the "Progress Build" section. Another orange arrow points from the "Read more" link in the "Unit Overview" section to the "Progress Build" section.



# Progress Build

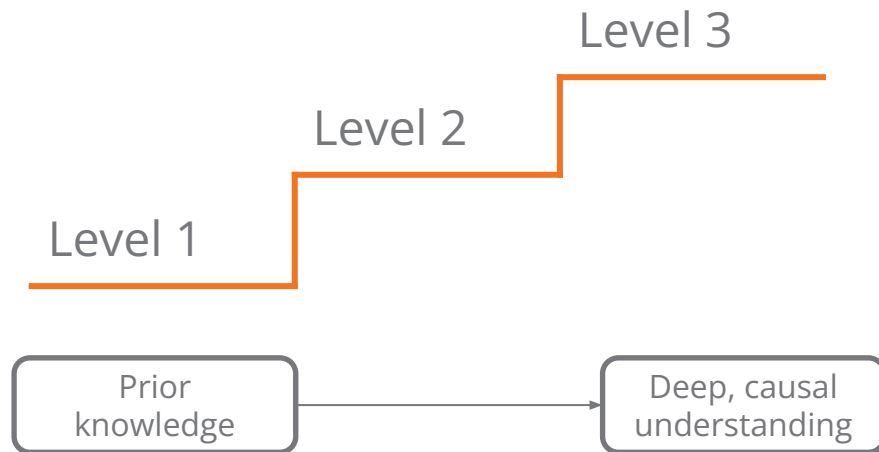
A Progress Build describes the way in which students' explanations of the central phenomenon should develop and deepen over the course of a unit. It is an important tool in understanding the design of the unit and in supporting students' learning. **A Progress Build organizes the sequence of instruction and defines the focus of the assessments.**



# Unpacking the Progress Build

Understanding a unit's Progress Build will help you guide your students, address misconceptions, and avoid giving ideas away too early in the unit.

In this activity, you'll use the Progress Build.



# Progress Build

## Animal and Plant Defenses

**Prior knowledge (preconceptions):** It is assumed students know that animals and plants are living things and can die if they do not get what they need.

### Level 3

Animals' and plants' offspring have similar, though not identical, structures to their parents that work in the same ways.

### Level 2

Many animals and plants have body structures with qualities that make them good for stopping animals from finding and/or eating them.

### Level 1

To survive, animals and plants must not be eaten by animals that try to eat them for food.

# Unpacking the Progress Build

## Group Work time

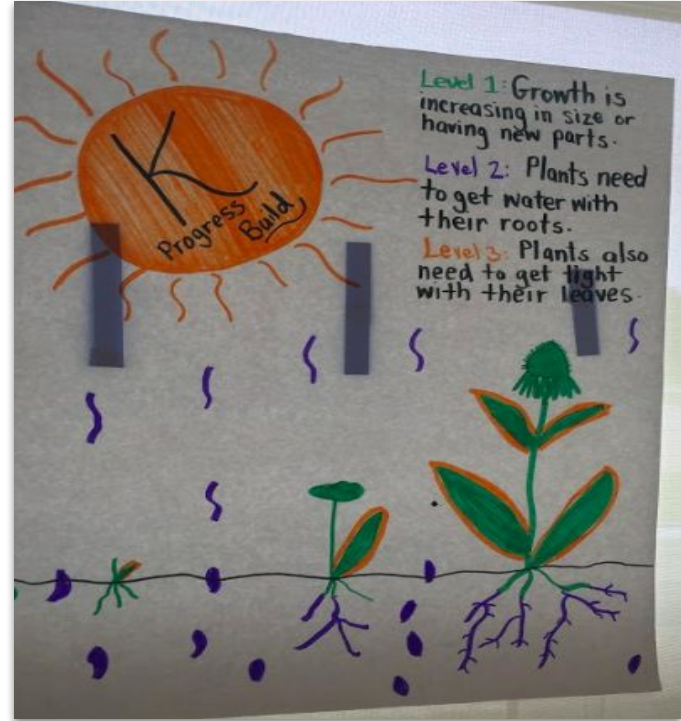
The purpose of this next work time is to understand what the levels of the Progress Build are in this unit, and reinforce understanding of its science concepts.



# Progress Build analysis

## Group work time

- With your group or partner, create a visual representation of all the levels of your unit's progress build.



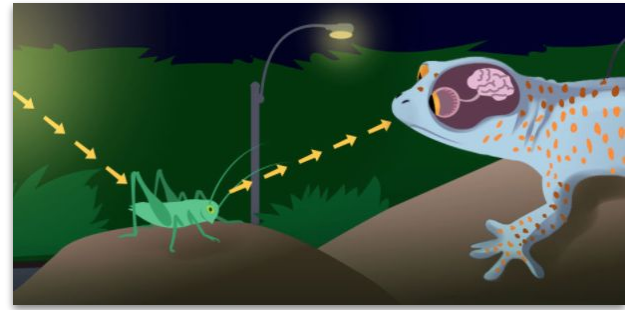
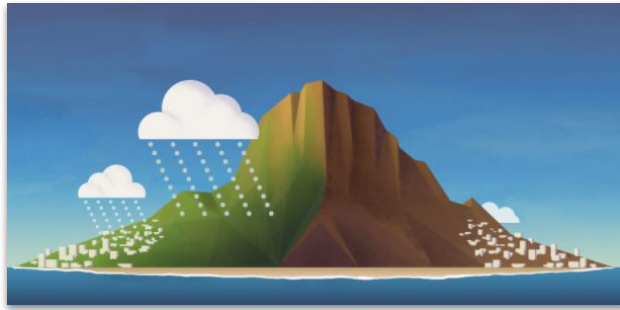
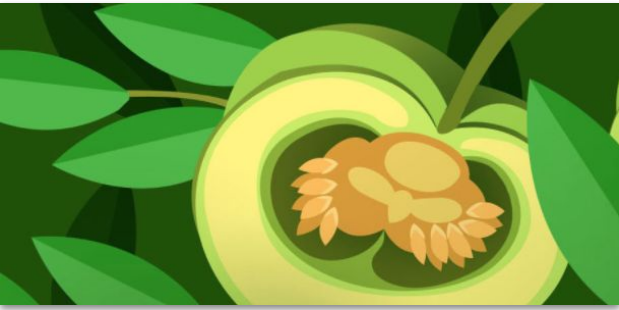
# Progress Build analysis

## Presentations



# Questions?





## Plan for the day

- Introduction and framing
- Unit Internalization
- Digging into Chapter 1
- Model Lesson
- Digging into Chapter 2
- Planning
- Closing



# Animal and Plant Defenses: Chapter 1

Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive? ⓘ



LESSON 1.1  
Pre-Unit Assessment



LESSON 1.2  
Tortoise Parts



LESSON 1.3  
Animal and Plant  
Structures



LESSON 1.4  
Surviving by Not Being  
Eaten



LESSON 1.5  
Explaining Sea Turtle  
Survival

# Digging in to chapter 1

## Group Work time

1. Form groups of 2, 3 or 4
2. Each group will pick a lesson in Chapter 1 (1.1 - 1.3)
3. Chart the activities in the lesson. Be sure to include:
  - a. Purpose of lesson
  - b. Modalities of each activity (do, talk, read, write or visualize)
  - c. Vocabulary introduced
  - d. Key Concepts introduced



**Lesson 1.2: Tortoise Parts**

Printable Lesson Guide

**Lesson Brief**

**1** READING  
Reading: Tortoise Parts

**2** HANDS-ON  
Observing Structures Used to Eat

**3** TEACHER-LED DISCUSSION  
Discussing Observations and Structures

RESET LESSON

**Overview**

Materials & Preparation

Differentiation

Standards

Vocabulary

Students learn about how animals use the structures on their bodies to help meet their survival needs. The teacher introduces the visualizing strategy and leads a Shared Reading of *Tortoise Parts* to provide students with examples of how an animal uses its structures to do what it needs to do to survive. Partners observe each other eating carrots to gather evidence of how another animal, a human, uses its structures to get and eat food. Students share these observations with the class and make connections to how the tortoise uses its structures in *Tortoise Parts*. The teacher introduces the *What Scientists Do* chart as a place to record how students work as scientists throughout the unit. The purpose of this lesson is to lay the foundation for students to understand that living things have body parts that help them meet their survival needs.

**Unit Anchor Phenomenon:** Spruce the Sea Turtle and her offspring survive in the ocean.

**Chapter-level Anchor Phenomenon:** Spruce the Sea Turtle survives

**Digital Resources**

Classroom Set

Classroom Set

What Scientists Do

Elicit Knowledge

Back

**Lesson purpose:**

Please refer to this to teach this lesson

Completed What Scientists Do

[Tortoise Parts](#)

**Copy of Lesson 1.2 - Animal and Plant Defenses**

File Edit View Insert Format Slide Arrange Tools Extensions Help

Kami Slideshow Share

## Grade 1 | Animal and Plant Defenses

# Lesson 1.2: Tortoise Parts

AmplifyScience

**Lesson purpose:** To lay the foundation for students to understand that living things have body parts that help them meet their survival needs.

Please refer to this lesson's Materials & Preparation section in the digital Teacher's Guide or the Print Teacher's Guide for information about preparing to teach this lesson, including any applicable safety notes. Below are links to resources used in this lesson.

[Completed What Scientists Do chart](#)

[Tortoise Parts](#)

## Classroom Slides

## Amplify.

# Modalities

## Lesson at a Glance

### 1: Reading: Tortoise Parts (20 min.)

The teacher introduces the Investigation Question that frames the work students will do in the next few lessons and leads a Shared Reading of *Tortoise Parts*. Students are introduced to the visualizing strategy to help them make sense of how tortoises do what they need to do to survive. *Tortoise Parts* introduces the idea that animals use specific body parts to meet their survival needs. Included in this activity is an On-the-Fly Assessment that provides an opportunity to assess students' initial use of the visualizing strategy.

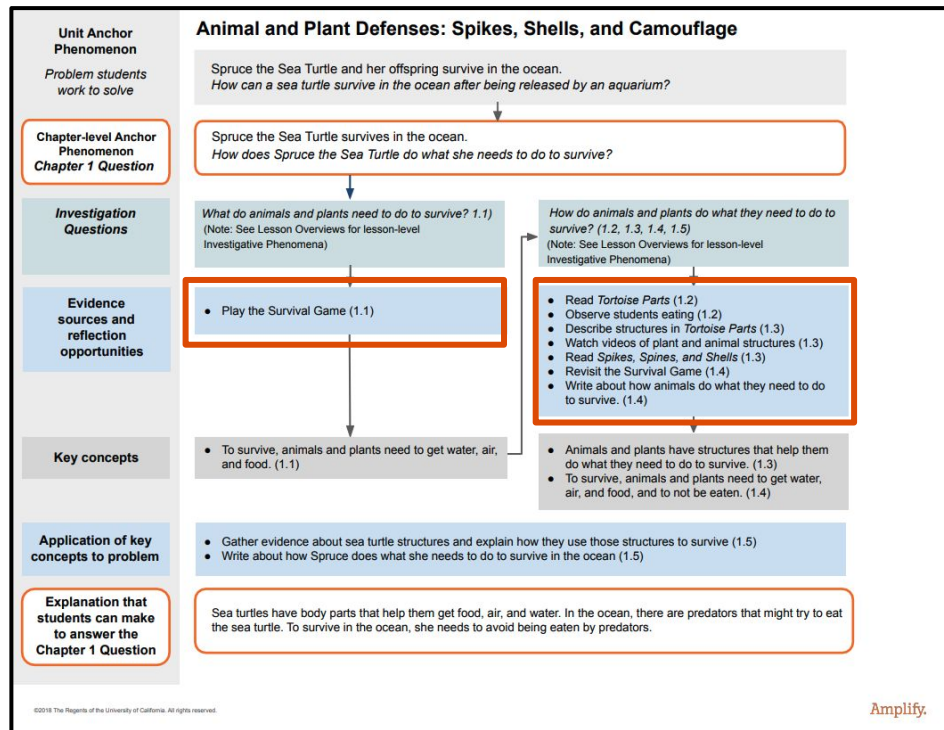
### 2: Observing Structures Used to Eat (15 min.)

The teacher introduces the word *observe* to support students' understanding of the firsthand observations they make in this activity. Partners observe one another eating carrots to gather evidence about how animals use their structures to do what they need to do to survive.

### 3: Discussing Observations and Structures (10 min.)

Students share their observations from the Carrot Eating activity to identify the structures that humans use to get and eat the food they need to survive. The teacher introduces the What Scientists Do chart to help students understand the various things they are doing to answer questions in their work as scientists.

## The Lesson Brief



## Coherence Flowchart

# Vocabulary

## Lesson 1.2: Tortoise Parts

Printable Lesson Guide

1

READING  
Reading: Tortoise Parts



2

HANDS-ON  
Observing Structures Used  
to Eat



3

TEACHER-LED DISCUSSION  
Discussing Observations  
and Structures



RESET LESSON

Overview

Materials &  
Preparation

Differentiation

Standards

Vocabulary

### Overview

Students learn about how animals use the structures on their bodies to help meet their survival needs. The teacher introduces the visualizing strategy and leads a Shared Reading of *Tortoise Parts* to provide students with examples of how an animal uses its structures to do what it needs to do to survive. Partners observe each other eating carrots to gather evidence of how another animal, a human, uses its structures to get and eat food. Students share these observations with the class and make connections to how the tortoise uses its structures in *Tortoise Parts*. The teacher introduces the What Scientists Do chart as a place to record how students work as scientists throughout the unit. The purpose of this lesson is to lay the foundation for students to understand that living things have body parts that help them meet their survival needs.

**Unit Anchor Phenomenon:** Spruce the Sea Turtle and her offspring survive in the ocean.

**Chapter-level Anchor Phenomenon:** Spruce the Sea Turtle survives

## Materials & Preparation

### Materials

### For the Classroom Wall

- 2 vocabulary cards *observe, structure*

What Scientists Do Chart - Completed

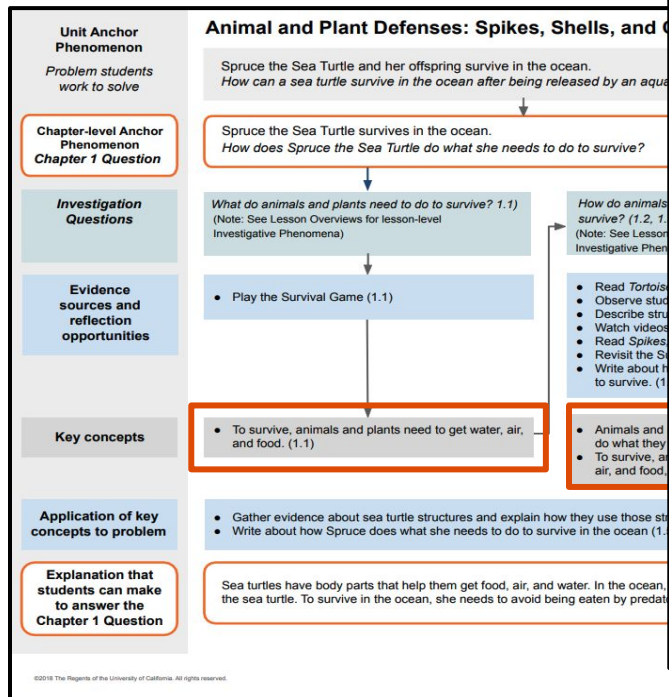


Eliciting and Leveraging Students' Prior  
Knowledge, Personal Experiences, and Cultural  
Backgrounds

Lesson  
Brief:



# Key Concepts



Unit Overview

Chapters

Printable Resources

Planning for the Unit ▾

Teacher References ^

Lesson Overview  
Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative  
Assessments

Books in This Unit

Opportunities for Unit  
Extensions

Offline Preparation

8. Create the key concept. On a sentence strip, write "To survive, animals and plants need to get water, air, and food."

Unit Question

2. Create the key concept. On a sentence strip, write "Animals and plants have structures that help them do what they need to do to survive."

Chapter Question

How

Invest

• V

• How do animals and plants do what they need to do to survive? (1.2, 1.3, 1.4, 1.5)

Key Concepts

- To survive, animals and plants need to get water, air, and food. (1.1)
- Animals and plants have structures that help them do what they need to do to survive. (1.3)
- To survive, animals and plants need to get water, air, and food, and to not be eaten. (1.4)

Coherence  
Flowchart

Lesson  
Overview  
Compilation

Materials and  
Preparation

Amplify.

Amplify.

# Digging in to Chapter 1

## Group Work time

1. Form groups of 2, 3, or 4
2. Each group will pick a lesson in Chapter 1 (1.1 - 1.3)
3. Chart the activities in the lesson. Be sure to include:
  - a. Purpose of lesson
  - b. Modalities of each activity
  - c. Vocabulary introduced
  - d. Key Concepts introduced



# Presentations



## Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive? ⓘ



LESSON 1.1  
Pre-Unit Assessment



LESSON 1.2  
Tortoise Parts



LESSON 1.3  
Animal and Plant  
Structures



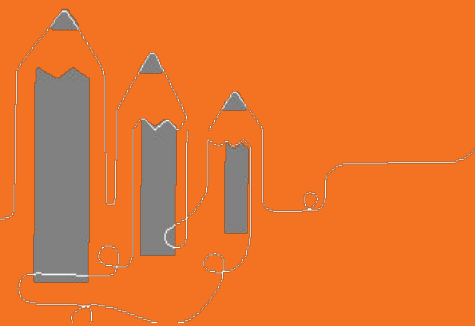
LESSON 1.4  
Surviving by Not Being  
Eaten

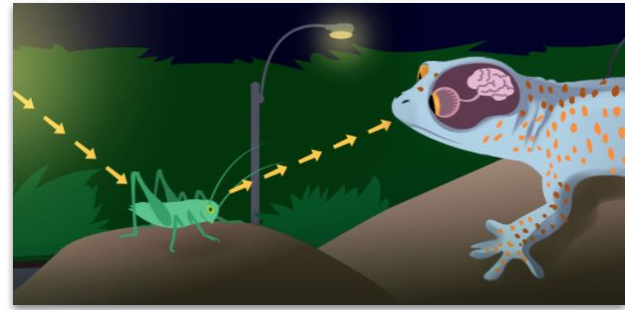
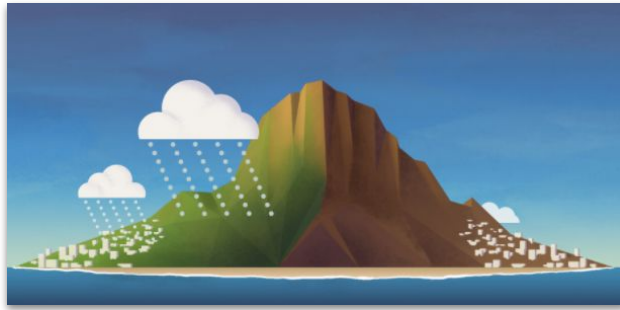
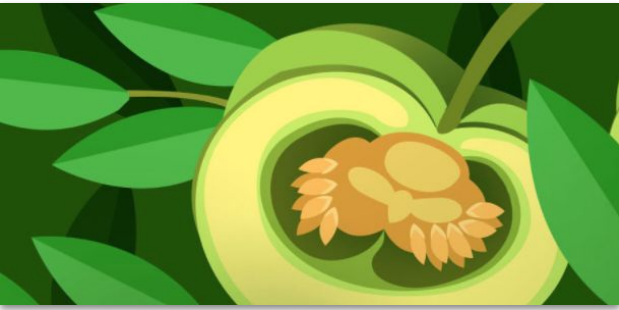


LESSON 1.5  
Explaining Sea Turtle  
Survival



# Break





## Plan for the day

- Introduction and framing
- Unit Internalization
- Digging into Chapter 1
- **Model Lesson**
- Digging into Chapter 2
- Planning
- Closing

# Animal and Plant Defenses: Chapter 1

Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive? ⓘ



LESSON 1.1  
Pre-Unit Assessment



LESSON 1.2  
Tortoise Parts



LESSON 1.3  
Animal and Plant  
Structures



LESSON 1.4  
Surviving by Not Being  
Eaten



LESSON 1.5  
Explaining Sea Turtle  
Survival

# 4 Easy Steps to teaching a lesson

## DIRECTIONS:

1. Download the **Classroom Slides** for **Lesson 1.4** and review them.
2. Read the **Overview**.
3. Explore the **Materials & Preparation** document.
4. Read the **Differentiation** document.

The screenshot shows the Lesson 1.4 interface titled "Lesson 1.4: Surviving by Not Being Eaten". It features a background illustration of a green and yellow spotted animal. A "Printable Lesson Guide" button is visible. Below the title, there are three tabs: "1. Introduction to the Survival", "2. TEACHER-LED DISCUSSION Explaining Not Being Eaten", and "3. WRITING Writing About Survival". A "RESET LESSON" button is located on the left. The main content area is divided into three sections: "Overview", "Materials & Preparation", and "Differentiation". The "Overview" section contains text about the Survival Game and the teacher's role. The "Materials & Preparation" section lists resources like "Classroom Slides 1.4 | PowerPoint", "Classroom Slides 1.4 | Google Slides", "Survival Game Events—Part 2", "Explanation Language Frames: Lesson 1.4", "Optional: Chapter 1 Home Investigation: Animal or Plant Structure copymaster", and "Chapter 1: Clipboard Assessment Tool".

Lesson 1.4:  
Surviving by Not Being Eaten

Printable Lesson Guide

1 Introduction to the Survival

2 TEACHER-LED DISCUSSION  
Explaining Not Being Eaten

3 WRITING  
Writing About Survival

RESET LESSON

Overview

Students learn that living things also have an additional survival need: to not be eaten. Students play a modified version of the Survival Game, in which living things have to get what they need (water, air, food) as well as not be eaten in order to survive. The teacher introduces a pair of Explanation Language Frames and students use these frames to explain one reason why living things in the Survival Game did or did not survive. The teacher revises the key concept from Lesson 1.1 to include students' new learning about what else living things need in order to survive. The teacher introduces the Investigation Notebooks, and then students draw and label in their notebooks what animals need to do to survive. The purpose of this

Digital Resources

- Classroom Slides 1.4 | PowerPoint
- Classroom Slides 1.4 | Google Slides
- Survival Game Events—Part 2
- Explanation Language Frames: Lesson 1.4
- Optional: Chapter 1 Home Investigation: Animal or Plant Structure copymaster
- Chapter 1: Clipboard Assessment Tool

# Unit: Animal and Plant Defenses Lesson: 1.4

**Purpose:** For students to expand students' understanding of what animals and plants need to survive by highlighting that living things must also not be eaten in order to survive.

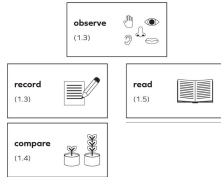
## Materials and Preparation: Before the Lesson

1. Write the Investigation Question on the board: "How do animals and plants do what they need to do to survive?"
2. On a sentence strip, write "and to not be eaten." In Activity 2, you will add this piece to the key concept posted in Lesson 1.1.
3. Create a word ring for each student.
4. Locate the large plastic cups, Survival Game Role Cards, and Survival Game Need Cards used in Lesson 1.1.
5. Prepare the Explanation Language Frame materials.
6. Print out Chapter 1: Clipboard Assessment Tool.

# Animal and Plant Defenses



## What Scientists Do To answer questions, scientists . . .



**Unit Question:** How do animal and plants survive?

**Chapter 1 Question:** How does Spruce the Sea Turtle do what she needs to do to survive?

**Investigation Question:** What do animals and plants need to do to survive?

**Investigation Question:** How do animals and plants do what they need to do to survive?

## Key Concepts

**#1-** To survive, animal and plants need to get water, air, and food.

**#2.** Animals and plants have structures that help the do what they need to do to survive.

## What do living things need to live and grow?

Animals		Plants	
food	(1,4)	water	(2,4)
water	(2,4)	light	(3,2)
to stay safe	(3,4)		

## Vocabulary

scientist

survive

observe

structue

A stylized illustration of a sea turtle swimming in blue water. The turtle is yellow with dark green spots on its head and shell. It is swimming towards the left, with its head and front flippers visible. The background is a solid blue color, and there are green seaweed-like shapes in the bottom right corner.

**Grade 1 | Animal and Plant Defenses**

# **Lesson 1.4: Surviving by Not Being Eaten**

## Activity 1

# Revisiting the Survival Game







We have been working as **aquarium scientists**.

We are trying to help the aquarium director explain to kids how sea turtles, like Spruce, survive in the ocean.

## Investigation Question:

How do animals and plants do what they need to do to survive?

## Key Concept

Animals and plants have structures that help them do what they need to do to survive.



What **structures** do you think Spruce uses to do what she needs to do to survive?



We are going to play the **Survival Game** again.

This time we will think about something different that living things need to do to survive.

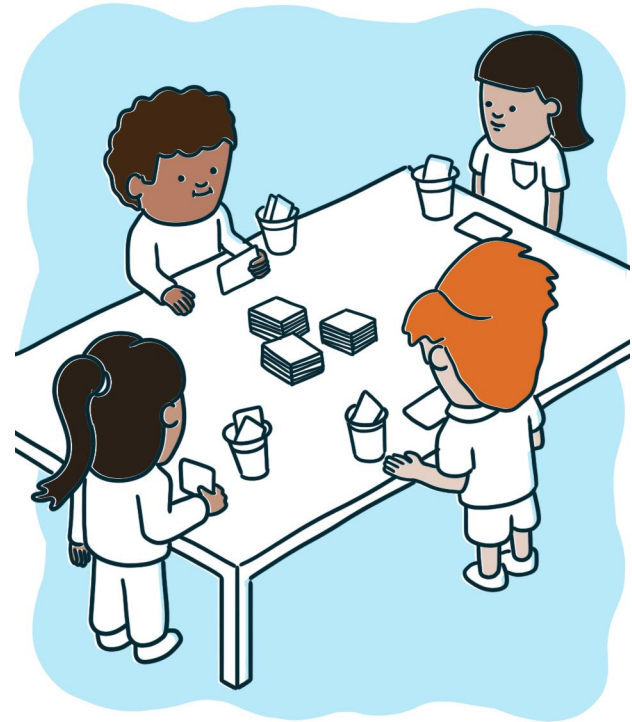
## Setting Up the Survival Game

1.  
Each player takes a cup.
2.  
Without looking, each player chooses a Role Card with a living thing on it.
3.  
Make three piles of Need Cards in the middle: food, air, and water.



## Playing the Survival Game (Round 1)

1.  
Listen to the directions for the living thing on your Role Card.
2.  
When I tell you to, take a Need Card from one of the piles.
3.  
Use your cup to hold your Need Cards.





Which living things **survived** in Round 1 of the game?

Which living things **did not survive**?

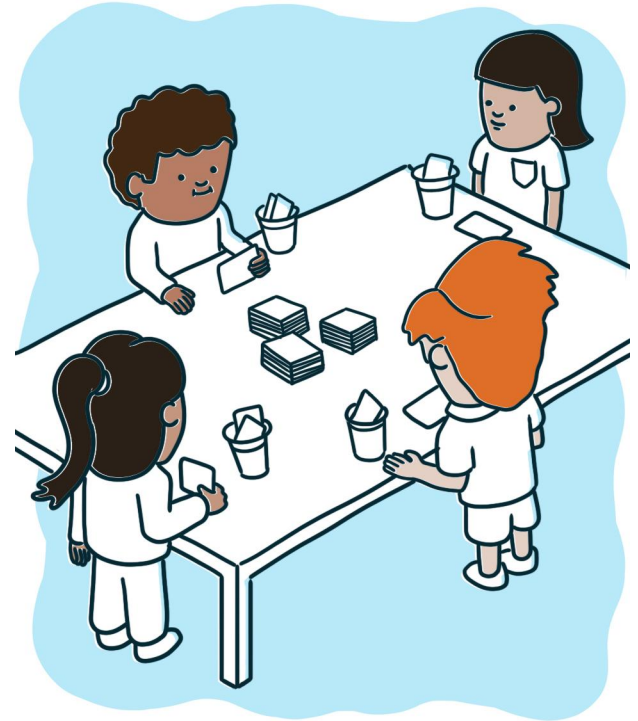




Why did only **some** living things survive?

## Playing the Survival Game (Round 2)

1.  
Listen to the directions for the living thing on your Role Card.
2.  
When I tell you to, take a Need Card from one of the piles.
3.  
Use your cup to hold your Need Cards.





Which living things **survived** in Round 2 of the game?

Which living things **did not survive**?



Why did only **some** living things survive?

## Playing the Survival Game (Round 3)

1.  
Listen to the directions for the living thing on your Role Card.
2.  
When I tell you to, take a Need Card from one of the piles.
3.  
Use your cup to hold your Need Cards.





Which living things **survived** in Round 3 of the game?

Which living things **did not survive**?



Why did only **some** living things survive?



We played three rounds of the Survival Game.



What did you notice?





What did the animals and plants in the Survival Game **need to do** to survive?

Why did some animals and plants **not survive**?

Scientists look for **patterns** when they make observations about the world.

A pattern is something similar that happens over and over again.



We observed something similar happening over and over again in the **Survival Game.**

The animals and plants that got air, water, and food, and did not get eaten **survived**.

The animals and plants that did not get air, water, and food, or got eaten **did not survive**.

That is a **pattern**.

## Activity 2

# Explaining Not Being Eaten



We are going to use these words to **talk like scientists** about why living things **survive**.

The \_\_\_\_\_ did survive because

it \_\_\_\_\_.



plant



snake



fish



mountain lion

We want to **explain why** an animal did or did not survive.

When scientists like us make explanations, we connect what happened to why it happened using the word **because**.

The \_\_\_\_\_ did survive because

it \_\_\_\_\_.

We can use these words to explain **why the fish survived** in Round 1 of the Survival Game.



fish

Approved for the California State Science Standards (CASSS) by the California State Board of Education (SBE) in 2002. © 2002 by the Regents of the University of California. All rights reserved.



Now, we are going to **talk like scientists** about why living things **do not survive**.

The \_\_\_\_\_ did survive because

it \_\_\_\_\_.

The \_\_\_\_\_ did not survive because

it \_\_\_\_\_.



plant



snake



fish



mountain lion

We can use these words to explain **why the snake did not survive** in Round 1 of the Survival Game.

The \_\_\_\_\_ did survive because

it \_\_\_\_\_.

The \_\_\_\_\_ did not survive because

it \_\_\_\_\_.



The \_\_\_\_\_ did survive because

it \_\_\_\_\_.

The \_\_\_\_\_ did not survive because

it \_\_\_\_\_.



Choose another living thing from the Survival Game. Let's **explain why** it did or did not survive.



plant



snake



fish



mountain lion

was not eaten

was eaten

## Key Concept

To survive, animals and plants need to get water, air, and food.

Now, we have learned about something else animals and plants need to do to survive.

They need **to not be eaten**.

Let's add that to our wall.

## Key Concept

To survive, animals and plants need to get  
water, air, and food, and to not be eaten.

## Activity 3

# Writing About Survival



AmplifyScience



### Animal and Plant Defenses:

Spikes, Shells, and Camouflage

Investigation Notebook

We will draw and write in **notebooks** when we work as scientists.

This will help us **remember** things we figure out.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Animals Doing What They Need to Do to Survive**

Directions:

1. Choose one kind of animal.
2. Visualize the animal doing each thing it needs to do to survive.
3. In each box, draw the animal doing one thing it needs to do to survive.
4. Label your drawings.


Today, we are going to use the notebook to draw and write what we have learned about **surviving by not being eaten**.

## Key Concept

Animals and plants have structures that help them do what they need to do to survive.

Scientists **visualize**.

You can visualize your animal using its **structures** to do what it needs to do to survive.



This **word ring** is a tool we can use to remember a word or how to spell it.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Animals Doing What They Need to Do to Survive**

Directions:

1. Choose one kind of animal.
2. Visualize the animal doing each thing it needs to do to survive.
3. In each box, draw the animal doing one thing it needs to do to survive.
4. Label your drawings.


I will **show you how** to visualize a structure and then draw it in the box.

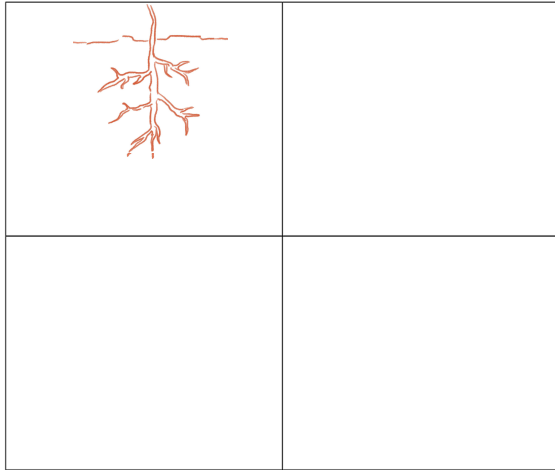
I will draw the **structure** a plant uses to get water. Then I will label what I drew.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Animals Doing What They Need to Do to Survive**

Directions:

1. Choose one kind of animal.
2. Visualize the animal doing each thing it needs to do to survive.
3. In each box, draw the animal doing one thing it needs to do to survive.
4. Label your drawings.



Here is a drawing of the structure I visualized.


Now I can label what I drew. The roots are the **structure** the plant uses to get the **water** it needs to survive.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Animals Doing What They Need to Do to Survive**

Directions:

1. Choose one kind of animal.
2. Visualize the animal doing each thing it needs to do to survive.
3. In each box, draw the animal doing one thing it needs to do to survive.
4. Label your drawings.

 <p>structure for getting water</p>	

I can use the word ring to  
help me spell **structure**.

We have learned about several things that animals need to survive.



Choose an **animal**.

Close your eyes and **visualize** a few ways that animal uses its **structures** to do what it needs to do to survive.





Tell your partner about your animal and the ways you visualized the animal using its **structures.**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Animals Doing What They Need to Do to Survive**

Directions:

1. Choose one kind of animal.
2. Visualize the animal doing each thing it needs to do to survive.
3. In each box, draw the animal doing one thing it needs to do to survive.
4. Label your drawings.


Animal and Plant Defenses—Lesson 1.4

3

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Turn to page 3 in your notebooks.



In each box, **draw and label** one thing your animal does to survive.



# End of Lesson



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HALL OF SCIENCE  
UNIVERSITY OF CALIFORNIA, BERKELEY

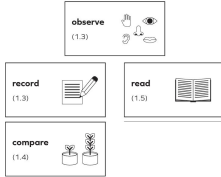
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# Animal and Plant Defenses



**What Scientists Do**  
To answer questions, scientists . . .



**Unit Question:** How do animal and plants survive?

**Chapter 1 Question:** How does Spruce the Sea Turtle do what she needs to do to survive?

**Investigation Question:** What do animals and plants need to do to survive?

**Investigation Question:** How do animals and plants do what they need to do to survive?

## Key Concepts

**#1-** To survive, animal and plants need to get water, air, and food.

**#2.** Animals and plants have structures that help the do what they need to do to survive.

**#3.** To survive, animals and plants need to get water, air, and food and not to be eaten

## Vocabulary

scientist

survive

observe

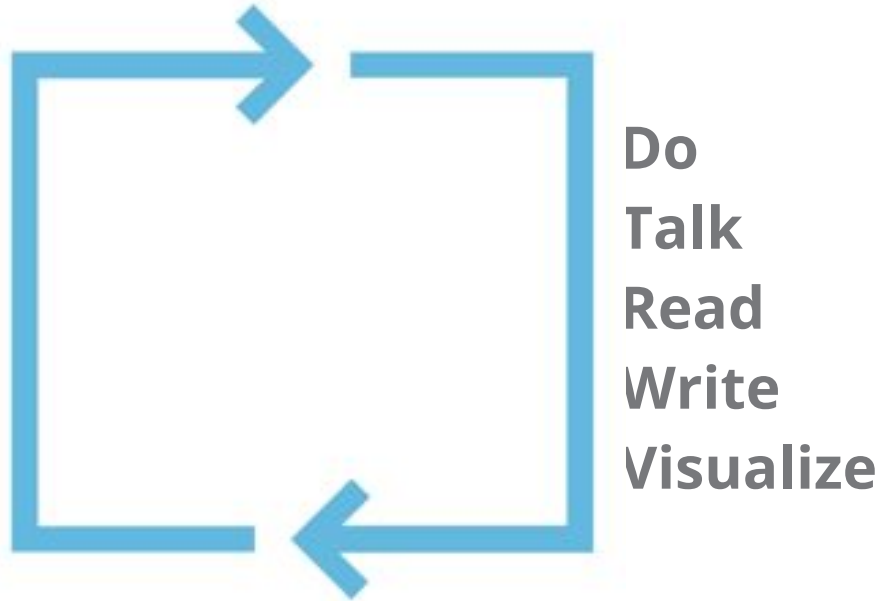
structue

# Animal and Plant Defenses

A stylized illustration of a sea turtle swimming in the ocean. The turtle is light yellow with dark green spots on its head and shell. It is swimming towards the left, with its head and front flippers visible. The background is a solid blue color, representing the ocean.

Students **investigate** how Spruce can survive in the ocean, particularly since sharks live in the area. They then **investigate** a question about Spruce's offspring: *How can Spruce the Sea Turtle's offspring survive where there are sharks?* ...Students **gather evidence** through careful **observations of photographs and videos** of real organisms and by **reading science texts**. Students **create multiple models** throughout the unit to **explain** their ideas about how defenses function.

## Lesson 1.4 Multimodal learning



# Animal and Plant Defenses: Lesson 1.4

## Do: Playing the Survival Game

Students play the survival game again to think about other things animals and plants need to do to survive.



# Animal and Plant Defenses: Lesson 1.4

## Talk: Talk like scientists

Students talk like scientists about why living things do or do not survive.

The \_\_\_\_\_ did survive because

it \_\_\_\_\_.

The \_\_\_\_\_ did not survive because

it \_\_\_\_\_.



# Animal and Plant Defenses: Lesson 1.4

Write: How animals do what they need to do to survive

Students draw and write what we they have learned about surviving by not being eaten.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Animals Doing What They Need to Do to Survive**

Directions:

1. Choose one kind of animal.
2. Visualize the animal doing each thing it needs to do to survive.
3. In each box, draw the animal doing one thing it needs to do to survive.
4. Label your drawings.


Animal and Plant Defenses—Lesson 1.4

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3

# Animal and Plant Defenses: Lesson 1.4

## Visualize: An animal and its structure

Students visualize animal and plant structures used to do what it needs to do in order to survive

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Animals Doing What They Need to Do to Survive

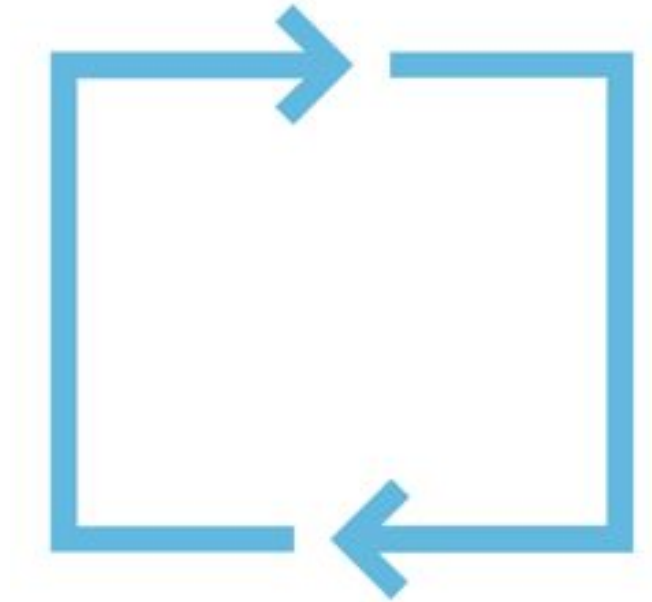
#### Directions:

1. Choose one kind of animal.
2. Visualize the animal doing each thing it needs to do to survive.
3. In each box, draw the animal doing one thing it needs to do to survive.
4. Label your drawings.



structure for  
getting water

# Lesson 1.4 Multimodal learning



**Do** Students play the survival game

**Talk** Students talk like scientists about why living things do or do not survive.

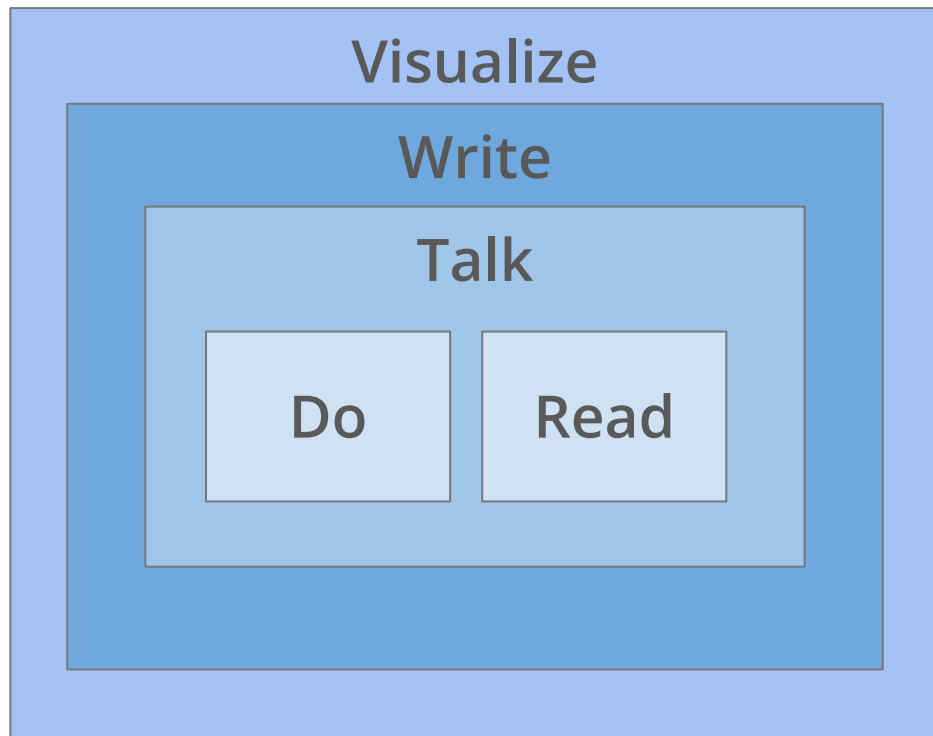
**Read**

**Write** Students write about how animals can survive

**Visualize** Students visualize and draw animal and plant structures used in order to do what it needs to do to survive

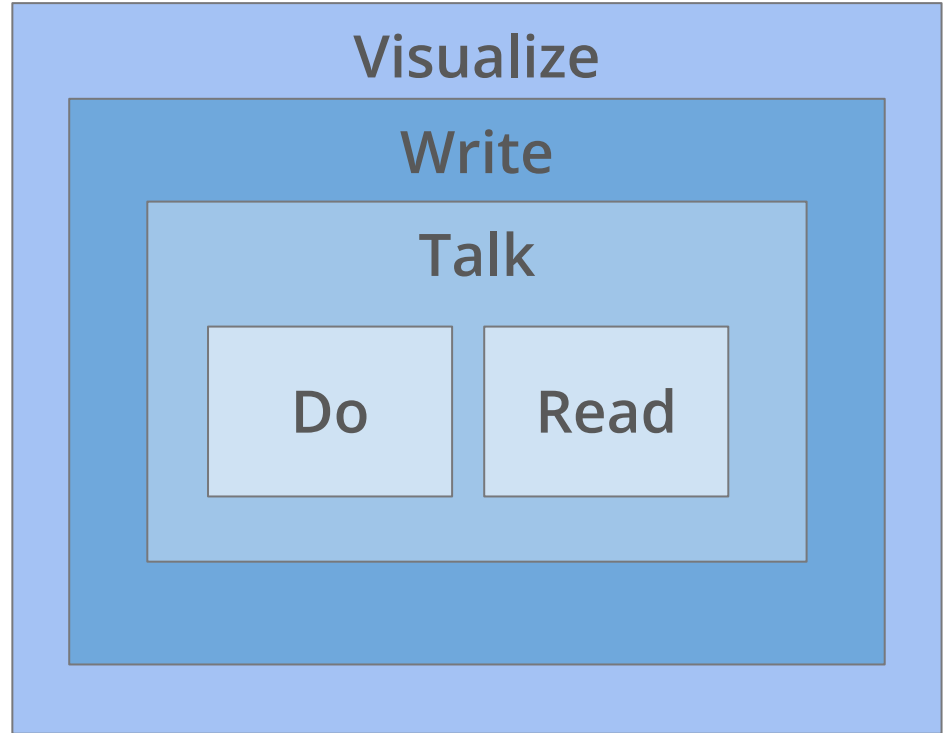
# Multimodal instruction (multiple at bats)

Activities of different modalities are intentionally sequenced to support deep understanding of complex concepts.



# Reflection

How will multiple at-bats with multimodal evidence sources support diverse learners in your class to master complex science ideas?



# Evidence sources work together

**Teacher tip:** Every evidence source plays an important role in student learning. Be sure to teach every activity in order!



The \_\_\_\_\_ did survive because \_\_\_\_\_

it \_\_\_\_\_.

The \_\_\_\_\_ did not survive because \_\_\_\_\_

it \_\_\_\_\_.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Animals Doing What They Need to Do to Survive**

Directions:

1. Choose one kind of animal.
2. Visualize the animal doing each thing it needs to do to survive.
3. In each box, draw the animal doing one thing it needs to do to survive.
4. Label your drawings.


Animal and Plant Defenses—Lesson 1.4

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# Animal and Plant Defenses: Chapter 1

Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive? ⓘ



LESSON 1.1  
Pre-Unit Assessment



LESSON 1.2  
Tortoise Parts



LESSON 1.3  
Animal and Plant  
Structures



LESSON 1.4  
Surviving by Not Being  
Eaten



LESSON 1.5  
Explaining Sea Turtle  
Survival

**Unit Anchor Phenomenon**

*Problem students work to solve*

**Chapter-level Anchor Phenomenon  
Chapter 1 Question**

**Investigation Questions**

**Evidence sources and reflection opportunities**

**Key concepts**

**Application of key concepts to problem**

**Explanation that students can make to answer the Chapter 1 Question**

## Animal and Plant Defenses: Spikes, Shells, and Camouflage

Spruce the Sea Turtle and her offspring survive in the ocean.  
*How can a sea turtle survive in the ocean after being released by an aquarium?*

Spruce the Sea Turtle survives in the ocean.  
*How does Spruce the Sea Turtle do what she needs to do to survive?*

*What do animals and plants need to do to survive? (1.1)*  
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

- Play the Survival Game (1.1)

- To survive, animals and plants need to get water, air, and food. (1.1)

*How do animals and plants do what they need to do to survive? (1.2, 1.3, 1.4, 1.5)*  
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

- Read *Tortoise Parts* (1.2)
- Observe students eating (1.2)
- Describe structures in *Tortoise Parts* (1.3)
- Watch videos of plant and animal structures (1.3)
- Read *Spikes, Spines, and Shells* (1.3)
- Revisit the Survival Game (1.4)
- Write about how animals do what they need to do to survive. (1.4)

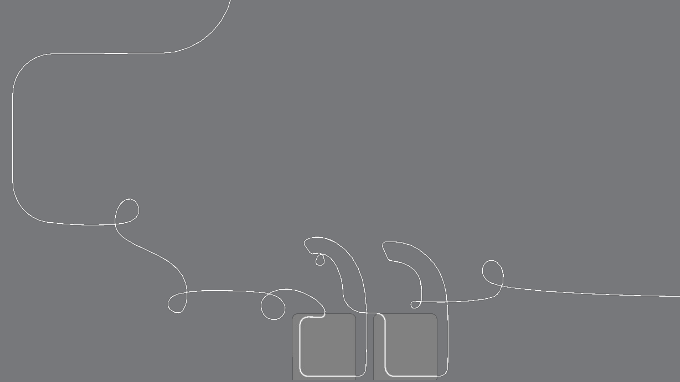
- Animals and plants have structures that help them do what they need to do to survive. (1.3)
- To survive, animals and plants need to get water, air, and food, and to not be eaten. (1.4)

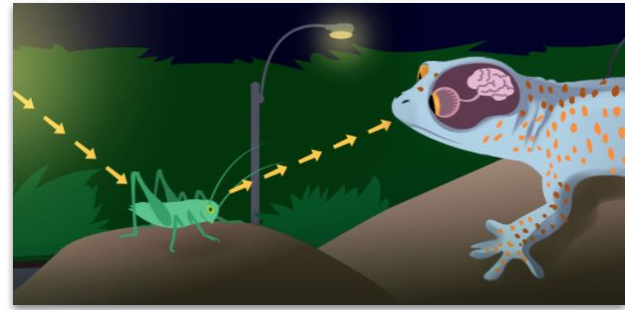
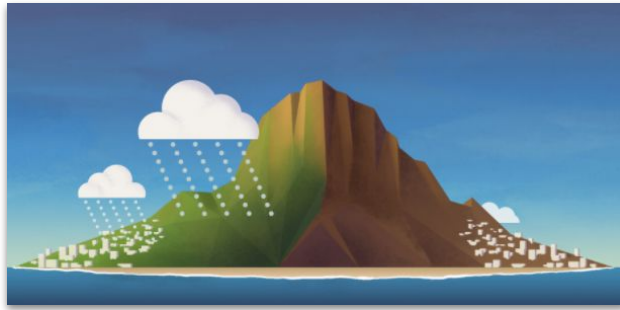
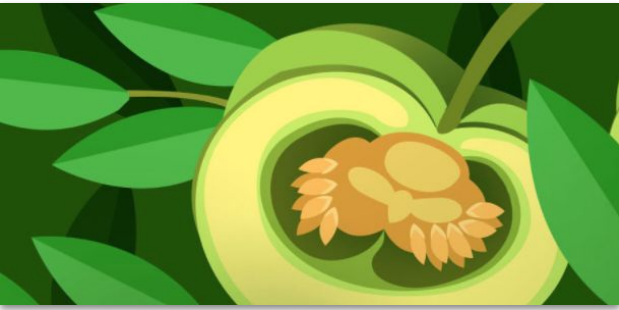
- Gather evidence about sea turtle structures and explain how they use those structures to survive (1.5)
- Write about how Spruce does what she needs to do to survive in the ocean (1.5)

Sea turtles have body parts that help them get food, air, and water. In the ocean, there are predators that might try to eat the sea turtle. To survive in the ocean, she needs to avoid being eaten by predators.



# Questions?





## Plan for the day

- Introduction and framing
- Unit Internalization
- Digging into Chapter 1
- Model Lesson
- Digging into Chapter 2
- Planning
- Closing

# Needs of Plants and Animals: Chapter 2

Unit Overview

| Chapters

Printable Resources

Planning for the Unit ▾

Teacher References ▾

Offline Preparation

## Chapter 2: How can Spruce the Sea Turtle survive where there are sharks? ⓘ



LESSON 2.1  
Whose Lunch Is This?



LESSON 2.2  
Sharp Structures for Eating



LESSON 2.3  
Introducing Modeling



LESSON 2.4  
Modeling Shells and Armor



LESSON 2.5  
Modeling Spikes



LESSON 2.6  
Modeling Camouflage



LESSON 2.7  
Explaining Defenses



LESSON 2.8  
Defending the Food Supply

# Digging into Chapter 2

## Group Work time

1. In your group, pick a lesson in Chapter 2 (from 2.1 to 2.8)
2. Using the **classroom slides**, each group member will present an activity
3. Be prepared to **teach** at least 1 activity in the lesson.
4. Remember to state the purpose of the lesson



# Presentations



## Chapter 2: How can Spruce the Sea Turtle survive where there are sharks? ©



LESSON 2.1  
Whose Lunch Is This?



LESSON 2.2  
Sharp Structures for Eating



LESSON 2.3  
Introducing Modeling



LESSON 2.4  
Modeling Shells and Armor



LESSON 2.5  
Modeling Spikes



LESSON 2.6  
Modeling Camouflage



LESSON 2.7  
Explaining Defenses



LESSON 2.8  
Defending the Food Supply

## Unit Anchor Phenomenon

Problem students work to solve

## Chapter-level Anchor Phenomenon Chapter 2 Question

### Investigation Questions

### Evidence sources and reflection opportunities

### Key concepts

### Application of key concepts to problem

### Explanation that students can make to answer the Chapter 2 Question

## Animal and Plant Defenses: Spikes, Shells, and Camouflage

Spruce the Sea Turtle and her offspring survive in the ocean.  
*How can a sea turtle survive in the ocean after being released by an aquarium?*

Spruce the Sea Turtle survives in the ocean where there are predators.  
*How can Spruce the Sea Turtle survive where there are sharks?*

*How do animals eat other living things? (2.1, 2.2)*  
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

- Read Whose Lunch Is This? (2.1)
- Observe videos of animals eating (2.1)
- Investigate food breaking apart (2.1)
- Act out food being broken apart (2.2)
- Revisit Whose Lunch Is This? (2.2)
- Describe animals' sharp structures for eating (2.2)
- Discuss which structures are and are not used for getting food (2.2)

- Many animals use their sharp structures to make animals and plants easier to eat. (2.2)

*How do animals and plants defend themselves? (2.3, 2.4, 2.5, 2.6, 2.7)*  
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

- Revisit Spikes, Spines, and Shells (2.3)
- Create physical models of animal defenses (2.3)
- Observe video of shell defenses (2.4)
- Revisit Tortoise Parts and Spikes, Spines, and Shells (2.4)
- Create and discuss physical shell and armor defense models (2.4)
- Revisit Spikes, Spines, and Shells (2.5, 2.6)
- Observe video of spike defenses (2.5)
- Create and discuss spike defense models (2.5)
- Observe video of camouflage defenses (2.6)
- Create and discuss camouflage models (2.6)
- Write about one defense (2.7)
- Engage in the Survival Role-Play movement routine (2.7)

- Animals and plants have defenses, structures that keep other animals from eating them. (2.7)

*How can we use ideas about animal and plant defenses to solve a problem? (2.8)*  
(Note: See Lesson Overviews for lesson-level Design Problem)

- Write a plan to protect food supply (2.8)
- Build defenses for the aquarium food supply (2.8)

- Scientists can make things that copy animal or plant structures to solve human problems. (2.8)

- Write to explain how Spruce can use her defenses to survive once she is back in the ocean (2.7)

Spruce has body structures that function as defenses against being eaten by sharks. Spruce's shell can block a shark's sharp teeth from biting Spruce. Spruce's camouflage colors make it harder for sharks to see her.

# Questions?



# Goals for the day:

By the end of the day, you will:

- ✓ Experience how all the instructional components fit together in the context of the unit
- ✓ Gain a deeper understanding of the purposeful sequencing of each activity and lesson within a chapter
- ✓ Become more familiar with multimodal instruction and how it provides multiple at bats to support student success
- ❑ Use the Amplify curriculum and resources to prepare to teach





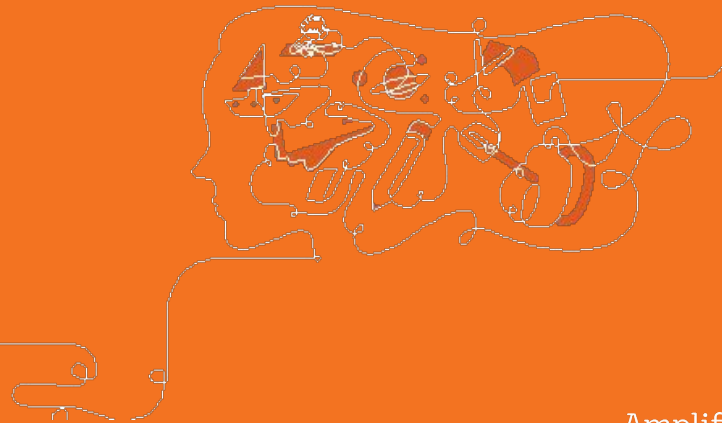
(reminder: after lunch)

# LAUSD SUMMER INSTITUTE 2023

Session 2 (after lunch)  
UCLA Center X Presentation



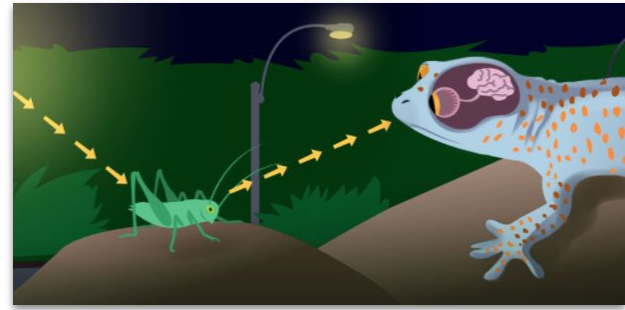
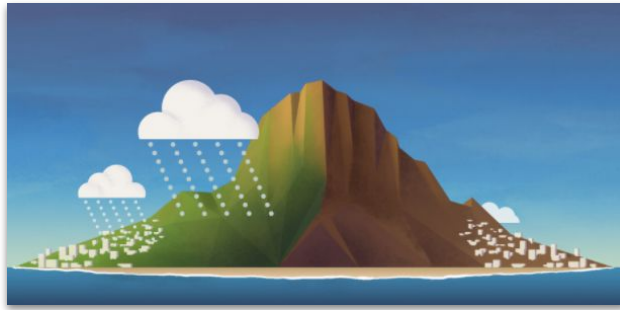
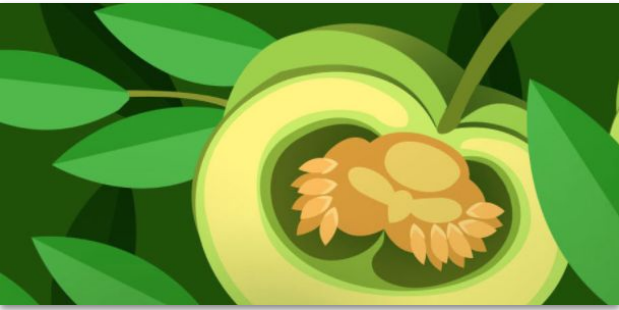
# Lunch Break



# LAUSD SUMMER INSTITUTE 2023

## Session 3 Planning





## Plan for the day

- Introduction and framing
- Unit Internalization
- Digging into Chapter 1
- Model Lesson
- Digging into Chapter 2
- **Planning**
- Closing

# Resources for Planning

AmplifyScience

## Gr. 1 Animal and Plant Defenses

### Participant Links

[Gr. 1 PN Animal and Plant Defenses Deep Dive](#) (pdf)

### Planning Resources

[Gr. 1, Unit 1 Lesson Planning Slide](#) (forced copy)

[Gr. 1 Animal and Plant Defenses Completed Material Prep Doc](#) (forced copy)

[Gr. 1 Animal and Plant Defenses Chart List](#) (pdf)

[Gr. 1 Animal and Plant Defenses Investigation Questions and Key Concepts](#) (pdf)

### Other Resources

[Caregivers Site](#)

[Classroom Slides](#)

[Unit Guide Resources](#)



<https://bit.ly/3P9RgG0>

# Planning time

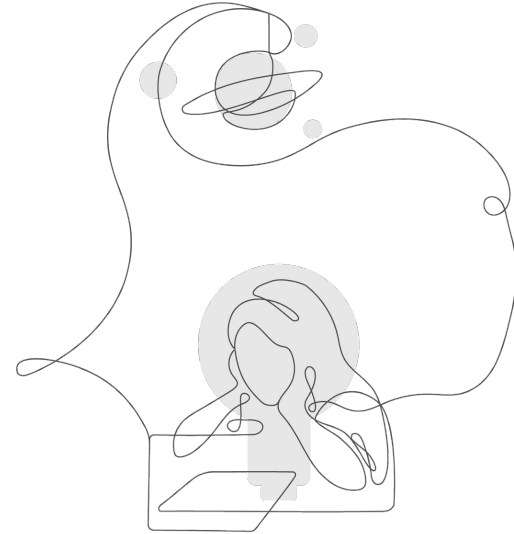
(Be prepared to share what you have been planning)

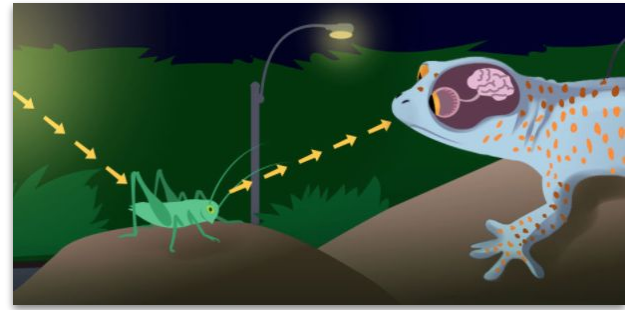
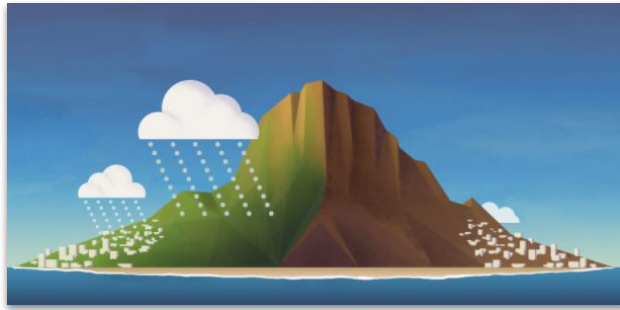
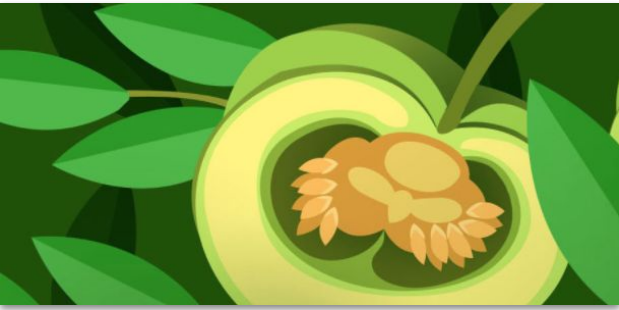
- Suggestions
  - Prep your charts
  - Read your unit's key documents
  - Familiarize yourself with the digital tools and sims
  - Familiarize yourself with the hands on activities
  - Preread the student texts
  - Download all the classroom slides for your unit and put in chapter folders
  - Review the differentiation in lessons and edit slides to meet the needs of your students.



# Share Out

- Are you planning differently for the unit after our work today?
  - Have you made any additions to your planning?
  - Have you made any adjustments?





## Plan for the day

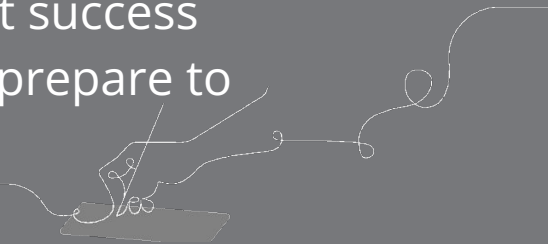
- Introduction and framing
- Unit Internalization
- Digging into Chapter 1
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- Digging into Chapter 2
- Planning
- Closing



# Goals for the day:

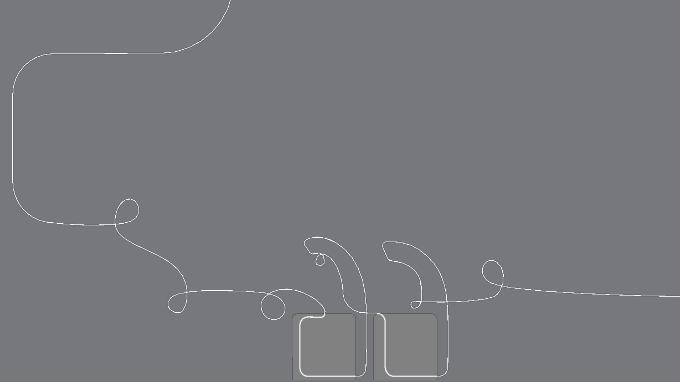
By the end of the day, you will:

- ✓ Experience how all the instructional components fit together in the context of the unit
- ✓ Gain a deeper understanding of the purposeful sequencing of each activity and lesson within a chapter
- ✓ Become more familiar with multimodal instruction and how it provides multiple at bats to support student success
- ✓ Use the Amplify curriculum and resources to prepare to teach



# Teaching science

“Science [is] both a body of knowledge and an evidence-based, model and theory building enterprise that continually extends, refines, and revises knowledge.”



# Closing reflection

Based on our work today in Part 2, share:

**Head:** something you'll keep in mind

**Heart:** something you're feeling

**Feet:** something you're planning to do

LAUSD Microsite-  
<https://amplify.com/lausd-science>



# Welcome to Amplify Science!

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This site contains supporting resources designed for the LAUSD Amplify Science adoption for grades TK–8.

- Access the [Amplify Science Program Hub](#) (To help orient you to the new design, watch this [video](#) and view this [reference guide](#).)
- Find out more about [Amplify Science@Home](#)
- Share the [Caregiver Hub](#) (Eng/Span) with your families
- For LAUSD ES Teachers- [Amplify Science & Benchmark Advance Crosswalk](#)
- Instructional guidance for a [Responsive Relaunch of Amplify Science in 21-22](#)

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

# Additional resources and ongoing support

## Customer Care

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-10PM EST and weekends 10AM-6PM EST.



[help@amplify.com](mailto:help@amplify.com)



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Amplify Chat

