# **Amplify** Science

## Needs of Plants and Animals Unit Deep Dive

Grade K

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





## 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





## 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



https://bit.ly/3R39ED5







#### 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









#### Plan for the day

- Introduction and framing
- Unit internalization and preparation
- Progress Build
- Digging into Chapter 1
- Model lesson
- Digging into Chapter 2
- Closing

## 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.



Here is how we introduce the phenomenon for this unit.

## Grade K | Needs of Plants and Animals Lesson 1.1: Pre-Unit Assessment

SAMA CONTRACTOR



## Activity 1 Introducing Students' Role as Scientists



We have an interesting new challenge to take on in science! We have been asked to help a group of children who live in a neighborhood called Mariposa Grove.

#### **Children from Mariposa Grove**



## **The Field**



### The Garden

The children in Mariposa Grove need our help. They want to know why there are no monarch caterpillars in the Garden and how they can make the Garden into a place where the caterpillars can live again.

#### **Chapter 1 Question**

# Why are there no monarch caterpillars since the Field was made into the Garden?

#### We are going to be **scientists**.

In order to help the children, we are going to be scientists and figure out what changed in the Garden, and why the monarchs no longer live there.

## 

# Turn and talk to a partner about what you know about **scientists**.

We are going to practice saying the word. Say the word after me: scientist.
Now say the word together: scientist.
Now whisper the word scientist to your partner. A scientist is a person who learns about the natural world. Vocabulary scientist

#### a person who learns about the natural world

Activity 1

#### Amplify Science Anchoring phenomenon

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


### Pg. 4

## **Unit Overview**

				Student rol
3-dimensional learning students	engage with to explain	the anchor p	ohenomenon:	
DCIs: What scientists want to know	SEPs: What scientists do		CCCs: How scientists th	ink
Learning that occurs in Chapter 1		Learning that	at occurs in Chapter 2	
Learning that occurs in Chapter 3	6	Learning that	at occurs in Chapter 4	
	andings and preconce	ptions		
Science Background: Key underst	arrentiga una preconce			

# Needs of Plants and Animals

Problem: How can the kids in Mariposa Grove attract monarch caterpillars to their neighborhood?

Role: Scientist

narch version of the second se

What: Students assume the role of scientists helping a group of children from the fictional community of Mariposa Grove to explain why there are no more caterpillars in a community garden that was converted from a field which once had caterpillars; students also advise the children on what they can do to attract the monarchs.

# **Coherent storylines**



Chapter 1: Why are there no monarch caterpillars since the Field was made int...

7 Lessons



Chapter 2: Why did two milkweed seeds become plants, but the other did not?

7 Lessons

Chapter 3: Why do the milkweed plants that get water grow differently?

4 Lessons

Chapter 4: How do we make the Garden a place where monarch caterpilla... 4 Lessons



**Amplify**Science

## Navigating to the Unit Map

Needs	of Plants and 22 Lessons Needs	Animals	and Animals			
Unit Overview	🖶 Printab	le Teacher Guide 🔻	Unit Map			
Chapters Printable Resources Planning for the Unit 🗸	Unit Overview Chapters Printable Resources	Unit Overv <sup>What's</sup> in This Unit	How can the kids in Mariposa Grove attract monarch caterpillars to their neighborhood? Students take on the role of scientists in order to figure out why no monarch caterpillars live in the area that was converted from field to a community vegetable garden. They investigate how plants and animals get what they need to live and grow, and then they make a new plan for the garden that will provide for the needs of monarch caterpillars and produce vegetables for humans.			
Teacher References V Offline Preparation	Planning for the Unit Unit Map Progress Build Getting Ready to Teach	Over the past 20 year causes of this decline necessary for the moi The Needs of Plants a	Chapter 1: Why are there no monarch caterpillars since the Field was made into the Garden? Students figure out: Last year, the Field was a place where monarch caterpillars could live because it had milkweed for them to eat. Now that it is a Garden, there are no monarch caterpillars. The caterpillars cannot live in the Garden because the milkweed they need to eat is not there.			
	Materials and Preparation Science Background Standards at a Glance Teacher References A	assume the role of sci no more caterpillars in children on what they students figure out th by observing and recc	How they figure it out: Students learn to make multisensory observations as they go on a science walk to figure out what things live in the neighborhood. By investigating photos of animals eating and animals in their habitats, students construct the idea that animals can only live in a place that has the food they need. They observe and compare two images of Mariposa Grove and its plants—one from a year ago when it was the Field and one taken since it became the Garden. Finally, the class co-constructs an explanation for why monarch caterpillars no longer live in the Garden.			
	Lesson Overview Compilation Standards and Goals 3-D Statements	opportunities for stud their environment in c things. At the end of tl Grove in such a way tł	Chapter 2: Why did two milkweed seeds become plants, but the other did not? Students figure out: Ms. Ray planted milkweed seeds in three pots, but nothing grew in one pot. The milkweed seed in that pot did not grow because it did not get water. Plants need water to grow, and they get water from the soil around them by using their			
	Assessment System Embedded Formative Assessments Books in This Unit Opportunities for Unit Extensions	Why? Past standards expec they would begin to u Standards (NGSS) ex beginning—not just b	How they figure it out: Students watch time-lapse videos in order to investigate what happens when plants grow. They also observe and record the growth of radish seeds and sprouting garlic plants. Students discover different ways to measure the growth of plants. They figure out that plant growth means a plant is getting bigger or adding parts that were not there before. By observing what happens to plants that do and don't have water, students can explain that plants need water.			
	Offline Preparation	Animals unit, this exp caterpillars as part of	Chapter 3: Why do the milkweed plants that get water grow differently? Students figure out: Two of Ms. Ray's milkweed pots got water, and the seeds in those pots grew. However, the plants grew differently from each other. One plant grew more because it got the light it needed, but the other plant grew less because it did not get the light it needed. Plants need light to live and grow, and they get light with their leaves			

# **Amplify Science Approach**

How can the kids in Mariposa Grove attract monarch caterpillars to their neighborhood?

How do we make the Garden a place where monarch caterpillars can live again?

Introduce a **phenomenon** and a related problem

Collect **evidence** from multiple sources Build increasingly complex **explanations**  **Apply** knowledge to solve a different problem

## Multimodal instruction

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





# Navigating to the Coherence Flowchart



# Animal and Plant Defenses & NGSS Using 3-D teaching and learning for figuring out phenomena



## Navigating to the **3-D Statements**

Needs of		<sup>22 Lessons</sup> Needs of Plant		3-D Statements t			
🖶 Printa	able Teache	🖶 Printab	le Teacher Guide 🔻	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			
Unit Overview Chapters Printable Resources	Un <sup>What</sup>	Unit Overview Chapters Printable Resources	Unit Ovel, What's in This l	(structure and function). Students apply what they learn by developing models and constructing explanations to communic their ideas about how aquarium animals use their defenses to survive (cause and effect). Chapter Level Chapter 1: How does Spruce the Sea Turtle do what she needs to do to survive?			
Planning for the Unit ✓     Over t     Planning for the Unit ✓       Teacher References ✓     neces     Progression		Planning for the Unit A Unit Map Progress Build	Over the past 20 y causes of this dec necessary for the The Needs of Plan	20 Students analyze and interpret data to figure out that all animals and plants need air, water, food, and the ability to def dec themselves from being eaten in order to survive (cause and effect). Students apply what they learn in order to explain plants and animals, as well as Spruce the Sea Turtle, use their specific structures to grow and survive (structure and fu Chapter Targeted 3-D Learning Objectives			
onnie i reparation	The ∧ Read	Materials and Preparation Science Background Standards at a Glance	assume the role o no more caterpilla children on what t students figure ou	These objectives are formatively assessed across the chapter [see assessment guidance locations noted] DCI: LSI.A: Structure and Function LSI.A-PI: All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp ob periods themselves, move from place to place and cook, find, and take in ford, water, and die Plants also have different to			
	Ch	Teacher References A Lesson Overview Compilation	by observing and opportunities for s their environment	(roots, stems, leaves, flowers, fruits) that help them survive <del>and grow</del> . [OTFA 2; OTFA 3; CJ 1] SEP: Obtaining, Evaluating, and Communicating Information			
	Cha Gar(	3-D Statements Assessment System	Grove in such a wa	<ul> <li>INFO-P3: Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic m icons), and other media that will be useful in answering a scientific question and/or supporting a scientific claim. [OTFA 1 CCC: Structure and Function</li> </ul>			
	8	Embedded Formative Assessments Books in This Unit Opportunities for Unit Extensions	Past standards ex they would begin t Standards (NGSS beginning—not inter	<ul> <li>SF-P1: The shape and stability of structures of natural and designed objects are related to their function(s). [OTFA 2: CJ 1</li> <li>Chapter 2: How can Spruce the Sea Turtle survive where there are sharks?</li> <li>Students explore plant and animal defenses by developing and using models and by obtaining information from text, image:</li> </ul>			
	LESSO	Offline Preparation	Animals unit, this	videos about how animals use their structures to defend themselves from predators (structure and function: cause and effe			

## Disciplinary Core Ideas: Animals and Plant Defenses

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

10

## Science and Engineering Practices Needs of Plants and Animals

- 1. Asking questions (for science) and defining problems (for engineering)
- 2. Developing and using models 
  3. Planning and carrying out investigations
  - 4. Analyzing and interpreting data
  - 5. Using mathematics and computational thinking
  - 6. Constructing explanations (for science) and designing solutions (for engineering) V
  - 7. Engaging in argument from evidence
  - 8. Obtaining, evaluating, and communicating information

inquiry

Crosscutting Concepts: Needs of Plants and Animals

Crosscutting Concepts

- . 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

# Needs of Plants and Animals 3D Statements

# 3-D Statements Key Practices Disciplinary Core Ideas Crosscutting Concepts Unit Level Students carry out investigations to determine what plants and animals need to live and grow (systems and system models) in order to help a group of kids from the fictional town of Mariposa Grove solve the problem of why there are no longer monarch caterpillars living in a garden in their neighborhood (cause and effect). At the end of the unit, the class designs a solution to the problem by developing a model (scale, proportion, and quantity) for a garden that provides for both human and animal needs.

## Navigating to Materials and Preparation



## Explore or review the key planning documents

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



## Explaining the phenomenon: Science Concepts

# Unit Question: What do living things need to live and grow?



## Navigating to the Lesson Overview Compilation

#### Needs of Plants and Animals

🖶 Printable Teacher Guide 🔻

W

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

OV Unit Overview ca Chapters ne Printable Resources Planning for the Unit A R 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** 

#### Needs of Plants and Animals



#### Unit Overview

#### What's in This Unit?

Over the past 20 years, we have witnessed a steady causes of this decline are complex, it appears to be necessary for the monarch caterpillars to eat in orde

The Needs of Plants and Animals unit examines the assume the role of scientists helping a group of child no more caterpillars in a community garden that wa children on what they can do to attract the monarch students figure out that monarch caterpillars feed o by observing and recording plants under different w opportunities for students to learn how plants get w their environment in order to meet their needs and e things. At the end of the unit, students engage in a d Grove in such a way that it accommodates the need

#### Why?

Past standards expected that even the youngest stu they would begin to understand the relationship bet Standards (NGSS) expect kindergarten students to beginning-not just between plants and animals but Animals unit, this expectation is met by asking stude caterpillars as part of their investigation into why the

Chapters	200		
Printable Resources	Less		
Planning for the Unit 🥆	Chap		
Unit Map Progress Build	Lesso		
Getting Ready to Teach	Lesso		
Materials and Preparation Science Background	Lesso		
Standards at a Glance	Chap		
Teacher References ^	Lesso Lesso		
Lesson Overview Compilation	Lesso Lesso		
Standards and Goals	Lesso		
3-D Statements	Lesso		

Unit Overview

#### Assessment System **Embedded Formative** Assessments

Books in This Unit **Opportunities for Unit** Extensions

Offline Preparation

#### 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 4.2: Making Models for the Exhibit Lesson 4.3: Aquarium Animal Exhibit Lesson 4.4: End-of-Unit Assessment

#### Chapters at a Glance

#### Unit Ouestion

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?

#### Lesson Overview Compilation

#### ons in This Unit

ter 11 essons n 1 1: Pre-Unit Assessment n 1.2. Tortoise Parts on 1.3: Animal and Plant Structures on 1.4: Surviving by Not Being Eaten on 1.5: Explaining Sea Turtle Survival

#### oter 2 Lessons

on 2.1: Whose Lunch Is This? on 2.2: Sharp Structures for Eating n 2.3: Introducing Modeling on 2.4: Modeling Shells and Armor n 2.5: Modeling Spikes sson 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 4.1: Frog Models

Explaining the phenomenon: Science Concepts

Unit Question: What do living things need to live and grow?

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

## Navigating to the Progress Build

of Plants ai

Unit Overview

What's in This Unit?

Over the past 20 years, we causes of this decline are of

necessary for the monarc

The Needs of Plants and A assume the role of scienti

no more caterpillars in a c

children on what they can

students figure out that m by observing and recording

opportunities for students their environment in order

things. At the end of the ur Grove in such a way that it

Past standards expected t

they would begin to under Standards (NGSS) expect

beginning-not just betwee

Animals unit, this expecta caterpillars as part of their

Why?

Teacher Guide 🔻

#### Needs of Plants and Animals



Unit Overview

Printable Resources

Planning for the Unit ∨

Teacher References ∨

**Offline Preparation** 

Chapters

U	ineeds
w	Printable
Ov ca ne Th <b>Re</b>	Unit Overview Chapters Printable Resources Planning for the Unit A Unit Map
C G Les Pr	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

#### 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, 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 provides information to help guide decisions related to the instruction designed to address specific gaps in students' understanding. This document will serve as an overview of the *Animal and Plant Defenses: Spikes, Shells, and Camouflage* Progress Build. Since the Progress Build is an increasingly complex yet integrated explanation, we represent it below by including the new ideas for each level in bold. Depending on the standards for a given grade level, a unit may include additional supporting content; however, the Progress Build serves as the conceptual core of the unit.

In the Animal and Plant Defenses unit, students will learn to construct scientific explanations of why animals' and plants' offspring are able to survive in areas where there are animals that might eat them.

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. Students are expected to begin the unit with some ideas about plants' and animals' basic needs, such as light, water, and food, but they will have the opportunity to learn about a more comprehensive set of needs.

#### Progress Build Level 1: Avoiding Being Eaten

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

#### Progress Build Level 2: Structures for Defense

To survive, animals and plants must not be eaten by animals that try to eat them for food. Many animals and plants have body structures with qualities that make them good for stopping animals from finding and/or eating them.

#### Progress Build Level 3: Offspring's Structures

To survive, animals and plants must not be eaten by animals that try to eat them for food. Many animals and plants have body structures with qualities that make them good for stopping animals from finding and/or eating them. Animals' and plants' offspring have similar, though not identical, structures to their parents that work in the same ways.

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# 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.** 



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## 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 Needs of Plants and Animals

Foundational knowledge: Animals can only live in a place that has the food they need.



Level 3

having new parts.

# 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

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# Questions?









## Plan for the day

- Introduction and framing
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- Model Lesson
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- Closing

# Needs of Plants and Animals: Chapter 1



# Digging in to Chapter 1 Group Work time

- 1. Form groups or pairs.
- 2. Each group will pick a lesson in Chapter 1 (1.1 - 1.6)
- 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



# Purpose of the lesson

	Lesson 1.2: Science Walk E Printable Lesson Brief	
		1     Image: Second secon
1         TEACHER LED DISCUSSION         **         2         Partonic Reading Walk           Figure Reading         **         2         Partonic Reading Walk	Science B 3 Constraint Learning Living and Nonliving Things 4 4 Structure To Struct	Grade K   Needs of Plants and Animals
Overview Materials & Preparation	Overview	Construction of and expression of and expressions that clientic trans as well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the to force conclusions about what here as a well as to take the totake the totak
Differentiation	things. The lesson begins with a formal introduction to the word	7 of things are living 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
Standards Vocabulary	observe, followed by a discussion of the senses that scientists use to observe, which are referred to as their Science Tool Kit. Then,	BB      any applicable safety notes. Below are links to resources used in this lesson.
	partners identify living things in the illustrations of the book <i>Science</i>	Partner Reading Guidelines
	wark. Next, intereaction introduces a card-soft activity to help the class figure out what types of things are living. The lesson concludes with another card-soft activity, this time with partners softing living things in order to help them understand that both plants and animals are living. The purpose of this lesson is to further develop students' understanding of, and experience with, the practices that scientists	Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds

Amplify.

# Modalities

#### Lesson at a Glance

#### 1: Introduction to Observing (5 min.)

Students review what it means to observe as they prepare to work as scientists during the lesson. They also learn the Science Tool Kit movement routine to help them remember how scientists observe.

#### 2: Partner Reading: Science Walk (15 min.)

Students identify living things in a Partner Reading of *Science Walk* and practice using the strategy of setting a purpose when reading.

#### 3: Comparing Living and Nonliving Things (10 min.)

The class collaboratively sorts a set of cards to explore the similarities and differences between living and nonliving things.

#### 4: Discussing Plants and Animals (15 min.)

Students sort cards depicting living things in order to help them identify that both plants and animals are living things.



Coherence Flowchart

#### The Lesson Brief

# Vocabulary

	Lesson 1.2: Science Walk						
		🖶 Print	able Lesson	Guide			
TEACHER-LED DISCUSSION Introduction to Observing	* 2	READING Partner Reading: Science Walk	3	TEACHER-LED DISCUSSION Comparing Living and Nonliving Things	-0 <sup>0</sup>	4	STUDENT-T DISCUSSIO Discussing Animals
Eo	RESET LESSON						

#### Overview Materials & Preparation Differentiation Standards Vocabulary

#### Overview

Students work as scientists to expand their understanding things. The lesson begins with a formal introduction to the observe, followed by a discussion of the senses that scient observe, which are referred to as their Science Tool Kit. The partners identify living things in the illustrations of the book *Science Walk*. Next, the teacher introduces a card-sort activity to help the class figure out what types of things are living. The lesson concludes with another card-sort activity, this time with partners sorting living things in order to help them understand that both plants and animals are living. The purpose of this lesson is to further develop students' understanding of, and experience with, the practices that scientists use, as well as to guide them to draw conclusions about what types of things are living.

## Materials & Preparation

Materials

#### For the Classroom Wall

• 1 vocabulary card: observe

Partner Reading Guidelines

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

#### Lesson Brief:

#### Amplify.

# **Key Concepts**



# Digging in to Chapter 1 Group Work time

- 1. Form groups or pairs.
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- 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



Unit Overview	Read more >					
Printable Resources Planning for the Unit ∨ Teacher References ∨	Chapters Chapter 1: Why are there no monarch caterpillars since the Field was made into the					
Offline Preparation	Garden? © LESSON 11 Pre-Unit Assessment	LESSON 1.2 Science Walk	LESSON 1.3 Observing a Place			
	l - some					





Investigating Animal





LESSON 1.5

Habitats

LESSON 1.6 Explaining Why There Are No Caterpillars


### Break











### 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 1



### 4 Easy Steps to teaching a lesson

### **DIRECTIONS:**

- Download the Classroom Slides for Lesson 1.1 and review them.
- 2. Read the **Overview**.
- 3. Explore the Materials & Preparation document.
- 4. Read the **Differentiation** document.



### Unit: Needs of Plants and Animals Lesson: 1.7

Purpose: For students to gather and record preliminary data, while continuing to build their understanding of what scientists do

### Materials and Preparation: Immediately Before the Lesson

- 1. Post the prepared Shared Writing chart paper in the discussion area. Keep the masking tape and one set of Mariposa Grove Cards near the chart. You will post these cards on the chart paper during the Shared Writing activity.
- 2. Add water to half of the plastic cups. Fill half of the plastic cups with enough water so the bottom half of the garlic cloves will be underwater (about an <sup>3</sup>/<sub>4</sub>"-1" of water). It is important that the garlic cloves not be totally submerged in the water once they are added to the cups.
- 3. Set out Do Plants Need Water Investigation materials.

Place one cup with water and one cup with no water at each partner workstation. Or, plan to distribute the cups as students transition from the discussion area to their workstations during Activity 3.

Set two empty cups, two garlic cloves, one intact garlic bulb, and a bottle (or glass) of water in the discussion area. You will use these to introduce the Do Plants Need Water Investigation in Activity 2.

Have on hand the following materials: Vocabulary card "investigate", "What Scientists Do "chart, demonstration Do Plants Need Water Investigation Materials, Mariposa Grove cards, "Handbook of Plants" big book, "What Does a Scientist Look LIke?" big book, marker, masking tape,

### Lesson 1.7 Differentiation



#### Specific Differentiation Strategies for English

Use of realia. Providing students with concrete materials to explore can help them connect scientific language to an experience. Whenever possible, provide students with physical materials and invite them to discuss their observations of how these materials relate to key concepts in the unit. In this lesson, you can give students time to observe cloves of garlic and invite them to share their background knowledge of this living thing.

Specific Differentiation Strategies for Students Who

Writing support. Activity 3 is the first opportunity students will have to record observations of plants in their Investigation Notebooks. For this reason, students may benefit from more scaffolding The following strategies can be used to support students with the

- additional teacher modeling in a small group setting
- strategic partnering to provide students who need more support
- · established classroom routines to support students

Specific Differentiation Strategies for Students Who

Additional writing. At the end of the lesson, have students label the parts of their drawing that they recorded in their notebooks. You may even have them write a few sentences that more fully describe what they have recorded about their investigation. Students in kindergarten can be encouraged to combine drawing and writing in order to record and express their ideas.



### Grade K | Needs of Plants and Animals Lesson 1.7: Setting Up an Investigation

**Amplify**Science



### Activity 1 Writing About Caterpillars and the Garden

### Chapter 1 Question

### Why are there no monarch caterpillars since the Field was made into the Garden?

# Scientists record what they observe to help them **remember**.

# Scientists also record to **share what they learn** with others.

# We used these words to talk like scientists.

We can use them today to help us **write**.

Why are there no monarch caterpillars since the Field was made into the Garden?



# We will think about **the Garden** first.

First, you will share your ideas. Then, I will write them on this chart.



You can use these words to talk with a partner about **why monarch caterpillars cannot live in the Garden**.





### A monarch caterpillar **cannot live** in this place. Why not?



Activity 1

Why are there no monarch caterpillars since the Field was made into the Garden?





Why are there no monarch caterpillars since the Field was made into the Garden?





Needs of Plants and Armab Mar posa Grove Cards—Lesson 1.6—AMP6150606.08-KLS ID The Regents of the Linivaristy of California. All rights reserved image credit: Shutterstock

## Now, let's think about **the Field.**



When you talk to your partner about why monarch caterpillars can live in the Field, remember to talk like scientists by using the word because.



# Why **can** a monarch caterpillar live in this place?

Why are there no monarch caterpillars since the Field was made into the Garden?



# Let's **record** our ideas.

# Let's think about the new ideas we have learned.

# We have learned about **scientists** and about **living things**.

### Self-Assessment: Share a new idea you learned.





2.

Partner A shares. Partner B listens. Partners switch.

**3.** Partner B shares. Partner A listens.

1.



### Activity 2 Setting Up the Do Plants Need Water Investigation





### milkweed plant

Let's think about what plants need.

# What do you think plants need to live?



### to try to learn more about something



### We will **investigate** to find out if **plants need water** to live.

Our Science Tool Kit Sense of Sight Sense of @ Hearing Sense of Sense of a Smell Taste 2 Sense of Touch



### This is **garlic**.

#### Garlic

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Humans use the garlic **plant** in food. It has a strong taste that many people like.



# This is what a living **garlic plant** looks like.



### This is a **garlic clove**.



# How can we find out if the garlic plant **needs** water to live?



Scientists **investigate** by changing **one thing** and then **comparing** what happens.

The one thing we will change is **water**.

### Set up your investigation



1.

Put one clove of garlic in the cup **with water**.

Make sure the bottom part of the clove is **under water**.

2.



3.

Put one clove of garlic in the cup with **no water**.



### Activity 3 Recording Garlic Observations





# Let's **compare** the two cups.



**Needs of Plants and Animals:** 

Milkweed and Monarchs

# Scientists **record** in different ways.

Today, we will **draw pictures** in our **notebooks** to record what we observed.

Investigation Notebook


Let's look at page 4 in your notebooks.

Scientists write the date to help them remember when they observed something.



When scientists **record** what they observe, they try to make their drawing look **exactly like** what they see.

### Let's review the directions together.

**Activity 3** 



### Now let's look at page 5 in your notebooks.

### Here we will **record our own observations** of garlic with **no water**.

## Let's review the directions together.

Date: Name: \_\_\_\_ Garlic with No Water Directions: 1. Observe the garlic in no water. 2. In the cup, draw what you observe. 3. On the lines below, write what you observe. This garlic clove is in a cup with no water. 5 Needs of Plants and Animals—Lesson 1.7 @ 2008 The Regards of the University of California. All rights reserved. Permission granted to photocopy for classroom use.

# What details should I record on my drawing?

Name: Date	
Garlic with Water	
Directions:	
1.Observe the garlic in water.	
2. In the cup, draw what you observe.	
3. On the lines below, write what you observe.	
	e
\ /	
	7
This garlic clove is in a cup <b>with</b> water.	/
4 Needs of Plants and Animals—Lesson 1.7	
@ 2008 The Regards of the University of California. All rights reserved. Permission granted to photocopy for observom use.	water.
	Animala   1999 17

Turn to page 4 in your notebooks. When you are done, turn to page 5.

### Record your observations of both garlic cups.

# Share your drawing with a partner.



# We have been working as **scientists** to help the children in Mariposa Grove.



# Let's add scientists **investigate**.



## Let's add scientists **communicate**.





Let's talk about how we **recorded** and **compared** like scientists.





Let's talk about how we **investigated** and **communicated** like scientists.

Lesson 1.7: Setting Up an Investigation

### **End of Lesson**





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### Evidence sources work together

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





### Needs of Plants and Animals

Students **figure out** that monarch caterpillars feed on milkweed plants, and then **investigate** what milkweed plants need to grow by **observing and recording** plants under different water and light conditions. **Books and time-lapse videos** provide more opportunities for students to learn how plants get what they need to grow. At the end of the unit, students **engage in a design problem** as they recommend a plan to redesign the garden in Mariposa Grove in such a way that it accommodates the needs of both humans and monarchs.

### Lesson 1.7 Multimodal learning



Do Talk Read Write Visualize

### Talk: Students share ideas

Students talk about why monarch caterpillars cannot live in the Garden



Partner B listens

connet live there because the	
cannot nive there because the	_
they need are not there.	-
can live there because the	-
they need are there.	





Write: Students record their ideas

Students record their ideas about why monarch caterpillars no longer live in the Garden (teacher led).



Do: Students investigate what a garlic plant needs to live

Students compare how a clove of garlic grows with water and without water.

# Set up your investigation Image: Set up your investin your investigation <t

Visualize: Students draw their observations

Students draw their garlic observations

# Set up your investigation Image: Set up your investinvestin Image: Set

### Lesson 1.4 Multimodal learning



#### Students investigate what a garlic plant needs to live

**Talk** Students talk about why there are no longer any monarch butterflies in the Garden.

#### Read

Students record their ideas about why Write there are no longer monarch butterflies in the Garden.

Visualize Students draw their garlic plant observations

### 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!









### 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

Chapter 2: Why did two milkweed seeds become plants, but the other did not? ①



LESSON 2.1 Growing Seeds



LESSON 2.2 Comparing Plant Growth



LESSON 2.3 Investigating Plant Needs



LESSON 2.4 A Plant in the Desert



LESSON 2.5 Observing Garlic Roots



LESSON 2.6 Observing Radish Roots



LESSON 2.7 Water for Milkweed

### Digging into chapter 2

### Group Work time

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



### Presentations



Chapter 2: Why did two milkweed seeds become plants, but the other did not? ①









LESSON 2.1 Growing Seeds

Comparing Plant Growth Investigating Plant Needs







LESSON 2.4 LES A Plant in the Desert Ob

Deserving Garlic Roots Observ

LESSON 2.6 Observing Radish Roots





### 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



### Questions?



(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**

**Amplify** Science

Gr. K Needs of Plants and Animals

Participant Links

Gr. K PN Needs of Plants and Animals Deep Dive (pdf)

Planning Resources

Needs of Plants and Animals Lesson Planning Slides (forced copy)

Gr. K Needs of Plants and Animals Completed Material Prep Doc (forced copy)

Gr. K Needs of Plants and Animals Chart LIst (pdf)

Gr. K Needs of Plants and Animals Investigation Questions and Key Concepts (pdf)

Other Resources

Caregivers Site

Classroom Slides

Unit Guide Resources



## https://bit.ly/3PDWwn2

# **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
- Model Lesson
- Digging into Chapter 2
- Planning
- Closing

# Goals for the day:

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



# Welcome to Amplify Science!

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







Please provide feedback!

Type:

Strengthen

Session title:

Unit one deep dive

**Professional Learning Specialist name:** 

Insert name

(insert email, if you would like)