

Amplify Science

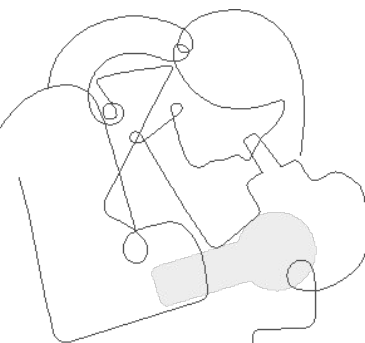
Plant and Animal Relationships Unit Deep Dive

Grade 2

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

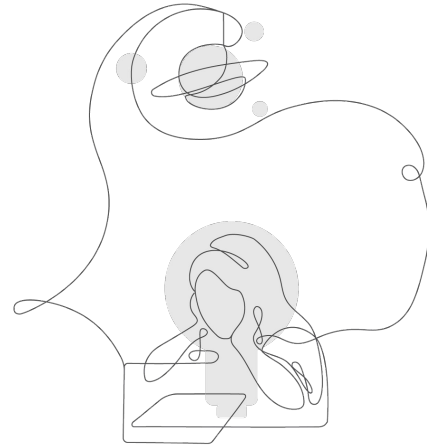
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-
-

[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: [udipp.lausd.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

Submit

All Amplify Products



LMS App Center

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

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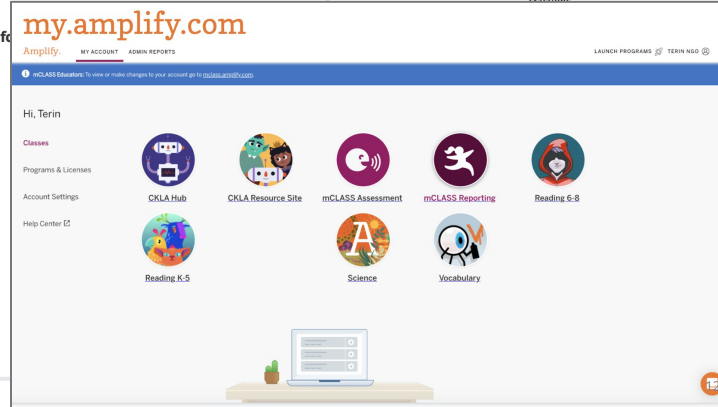
To learn more about using the LMS App Center, please refer to the following video overview.

[← 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
S: amplify.com/support/
Textbook Title(s):
NA



Vendor Support Desk:
P: 800.823.9969
E: help@amplify.com
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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

U 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 with Google

Sign in to continue to Amplify Curriculum Delivery Application

Email or phone

Forgot email?

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Create account Next

Sign in with Google

Hi Teacher

nationalsci20@pd.tryamplify.net

Enter your password

Show password

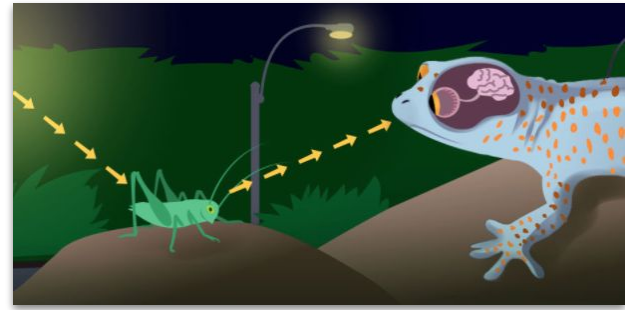
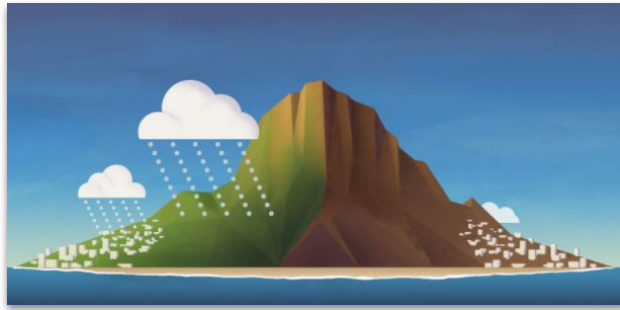
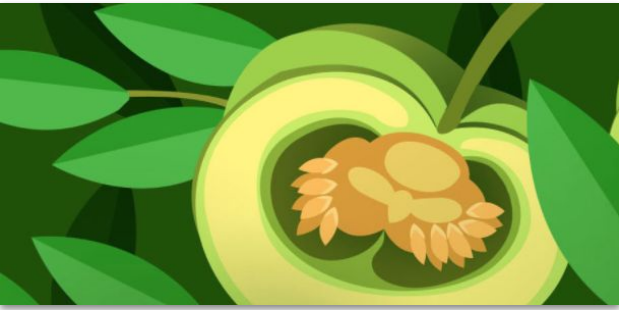
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Forgot password? Next

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

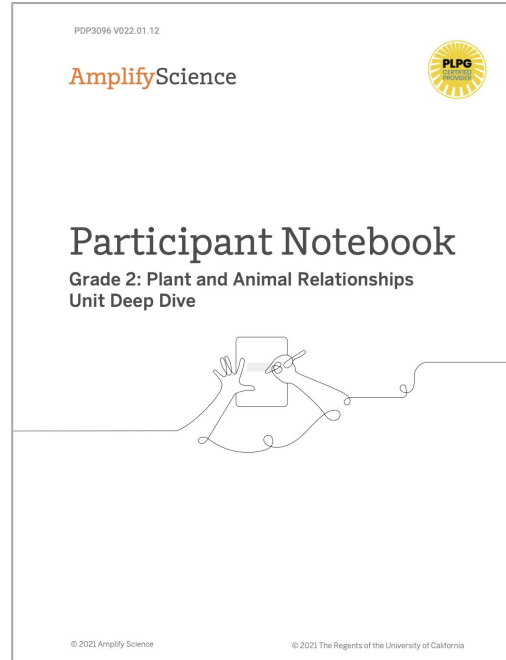
3 = Mild

4 = Comfortable

5 = Extremely Comfortable

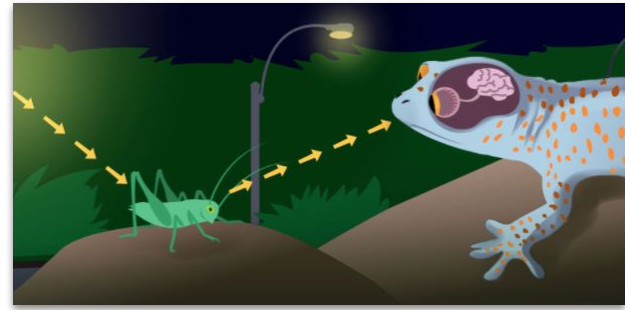
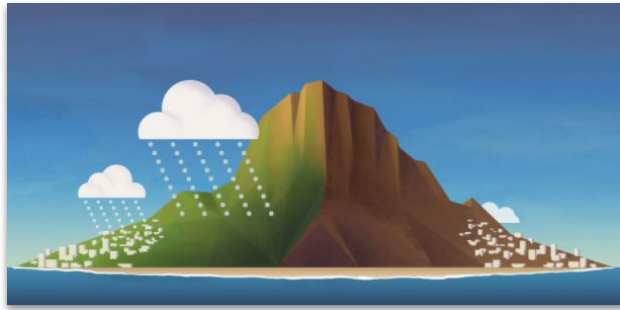
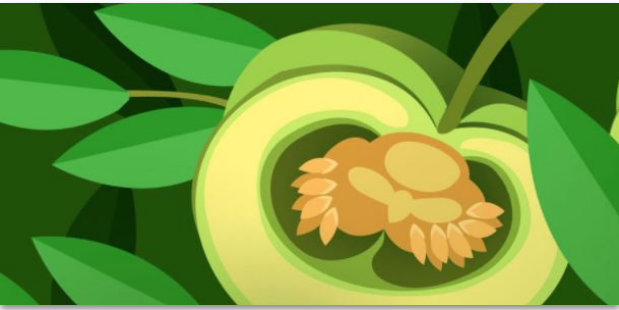


Participant Notebook



Hardcopy and digital

<https://bit.ly/44Lr0rC>



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 lessons 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 2

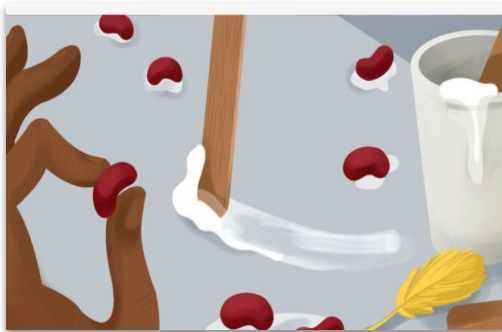


Plant and Animal Relationships

Domain: Life Science

Unit type: Investigation

Student role: Plant Scientists

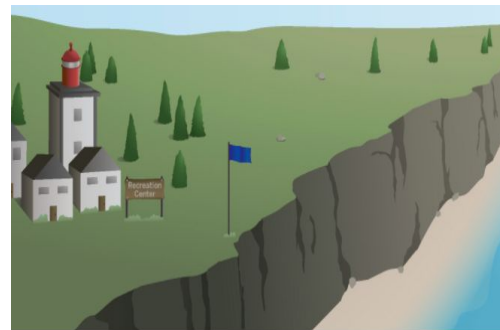


Properties of Materials

Domains: Physical Science,
Engineering Design

Unit type: Engineering
design

Student role: Glue engineers



Changing Landforms

Domain: Earth and Space
Science

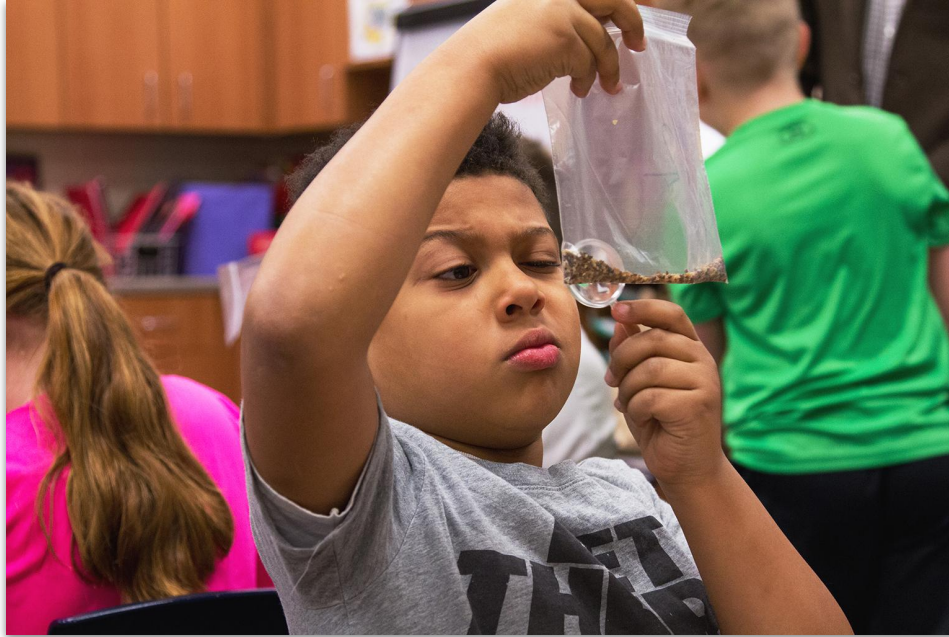
Unit type: Modeling

Student role: Geologists

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.

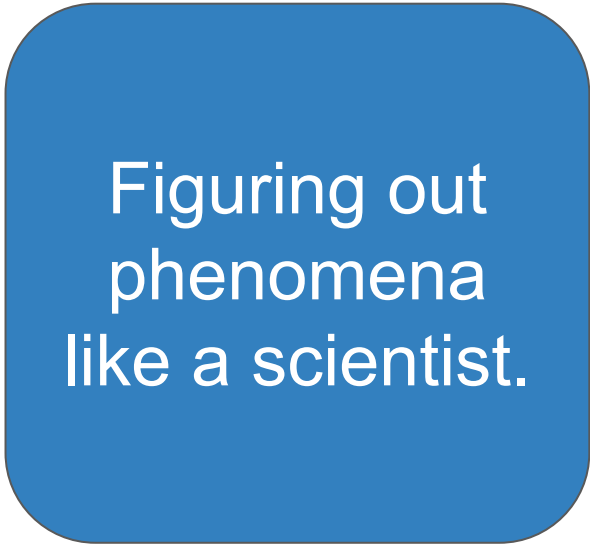
Read like a scientist.

Talk like a scientist.

Write like a scientist.

Critique like a scientist.

Argue like a scientist.



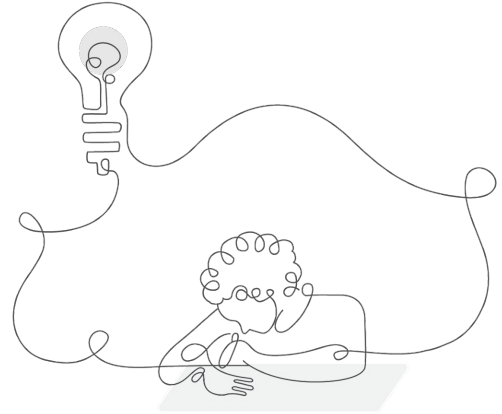
Figuring out
phenomena
like a scientist.

Previewing the unit

Introducing the phenomenon

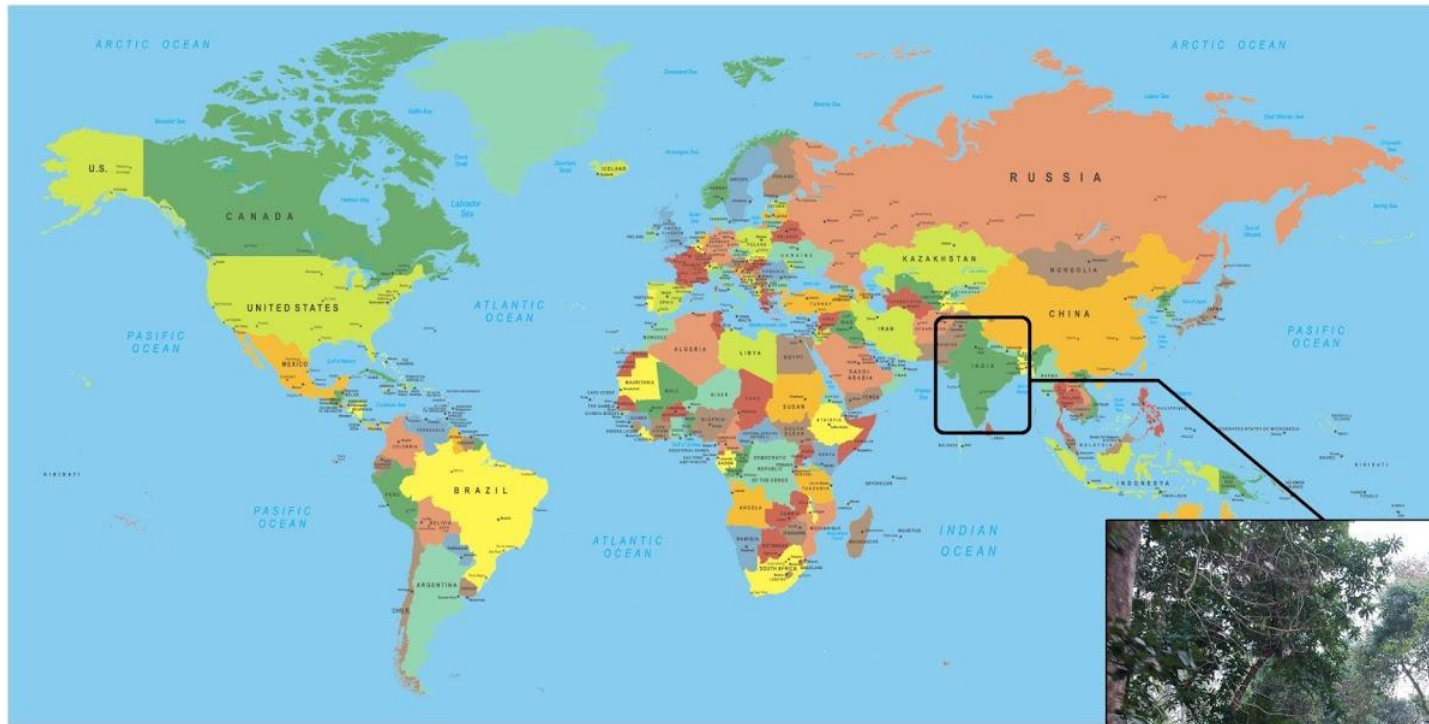
Amplify Science units are designed around complex phenomena that drive student learning through the unit.

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



The unit we're beginning is called *Plant and Animal Relationships: Investigating Systems in a Bengali Forest*.

In this unit, you will **investigate why the chalta trees are not growing in the Bengali Tiger Reserve**.



Broadleaf Forest

Bengal Tiger Reserve



The Bengal Tiger Reserve is a section of the forest where tigers are protected. Lots of different kinds of plants and animals live in the Bengal Tiger Reserve.



The lead scientist at the Reserve thinks something is **changing** with the trees. We are going to help figure out **what is happening** with the trees that live in the Reserve.



In this unit, we will be **plant scientists**.

Plant scientists try to answer questions about plants in the places where they live.

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		

Plant and Animal Relationships

Problem: What is happening to the chalta trees in the Bengal Tiger Reserve?

Role: Plant Scientists

Students examine what plant structures allow a plant to get what it needs to grow and how plants depend on the parts of their habitat to get them to new places where there is ample sunlight and water.

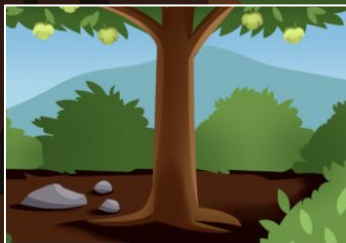


Coherent storylines



Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger...

7 Lessons



Chapter 2: Why aren't the chalta seeds getting what they need to grow?

5 Lessons



Chapter 3: Why aren't the chalta seeds getting to places where they...

6 Lessons



Chapter 4: How are other seeds in the reserve able to get to place where they can grow?

Navigating to the Unit Map

Plant and Animal Relationships

Printable Teacher Guide

Unit Overview

Chapters

Printable Resources

Planning for the Unit

Teacher References

Offline Preparation

Unit Overview

What's in This Unit?

Chapters

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve?

Chapter 2: Why aren't the chalta seeds getting the sunlight and water they need to grow?

Chapter 3: Why aren't the chalta seeds getting to places where they can grow?

LESSON 1.1 Pre-Unit Assessment

LESSON 1.4 Discovering the Problem in the Reserve

LESSON 1.5 What Are Seeds?

LESSON 1.6 Investigating Seed Needs

Unit Map

What is happening to the chalta trees in the Bengal Tiger Reserve?

In their role as plant scientists, students figure out why there are no new chalta trees growing in the Bengal Tiger Reserve, which is part of a broadleaf forest. Students investigate what chalta trees need to survive, and then they collect and analyze qualitative and quantitative data to solve the mystery.

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve?

Students figure out: The chalta trees in the Bengal Tiger Reserve make seeds. Only the seeds that get enough water and sunlight will sprout and grow into new adult plants. There are no new chalta trees because the chalta seeds must not be getting enough water and sunlight.

How they figure it out: Students read a book that models how scientists study habitats, and then students observe their own sample study sites to learn about the diversity of plants in a habitat. Students analyze maps of the tiger reserve from 1995 and 2015 and discover that no new chalta trees have grown during that time, but other plants have. They investigate seeds, read about seed needs, and record measurements of seeds planted in various conditions as they construct an understanding that seeds need sunlight and water to mature into full-grown plants. The class co-constructs a scientific explanation, concluding that the chalta seeds must not be getting the sunlight and water they need.

Chapter 2: Why aren't the chalta seeds getting the sunlight and water they need to grow?

Students figure out: The chalta trees in the tiger reserve use their roots to get water from the soil and their leaves to get sunlight. Growing chalta seeds need space far enough away from other plants so their roots can spread and their leaves can get sunlight. The chalta seeds must not be getting to places where they can get what they need to grow.

How they figure it out: Students investigate roots and leaves from different plants and obtain information from a book that enables them to explain how a plant is a system with different structures that work together to help the plant grow. Students play a board game and engage with a variety of models, including a digital app, as they discover that plants need to be in a place where they have space for their roots to absorb water and where the sun is not blocked by other plants' leaves. Students consolidate their understanding in a written scientific explanation to the lead scientist of the Bengal Tiger Reserve.

Chapter 3: Why aren't the chalta seeds getting to places where they can grow?

Students figure out: The chalta trees in the Bengal Tiger Reserve depend on elephants to disperse their seeds. Elephants eat the chalta fruit for food, move to other places in the habitat, and leave droppings with seeds inside in locations that might have water and sunlight. A fence built in 1996 has prevented elephants from coming inside the reserve, so elephants no longer disperse chalta seeds to places where they might grow.

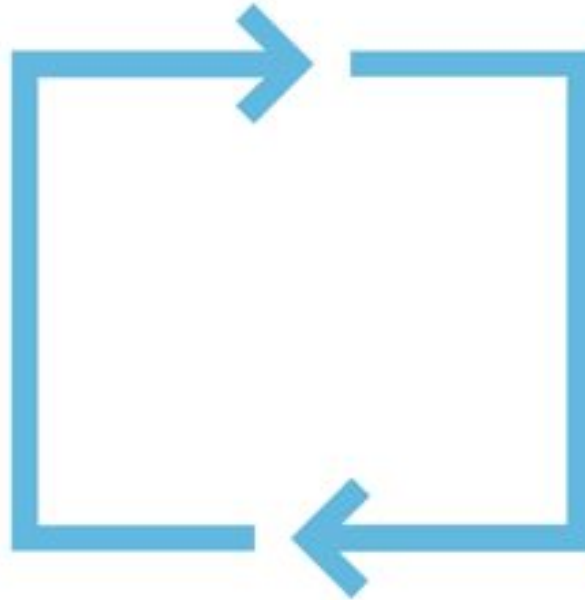
How they figure it out: Students engage with a model in which they simulate animal dispersal of seeds, measure how many seeds were dispersed to places where the seeds are likely to grow, and analyze their results. Students obtain information about how the different parts of the Bengal Tiger Reserve habitat interact, and they create diagrams that show the interdependence of plants and animals. Students revisit the digital app to explain how seeds in particular habitats get dispersed. Students apply their

Amplify Science Approach



Multimodal instruction

For each key concept, students w
with evidence in varied modalities



**Do,
Talk,
Read,
Write,
Visualize**

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

Plant and Animal Relationships: Investigating Systems in a Bengali Forest

There are many new trees growing in the Bengal Tiger Reserve but none of them are chalta trees.
What is happening to the chalta trees in the Bengal Tiger Reserve?

There are no new chalta trees growing in the Bengal Tiger Reserve.
Why aren't new chalta trees growing in the Bengal Tiger Reserve?

How do scientists study habitats? (1.2, 1.3, 1.4)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

- Read *My Nature Notebook* (1.2)
- Discuss and record ways to study a habitat (1.2)
- Investigate a sample study site habitat (1.3)
- Read about the broadleaf forest and other habitats in *Handbook of Habitats* (1.4)

- One way scientists study habitats is by observing the plants in them over time. (1.4)
- There are many types of habitats. Each habitat has many different types of plants and animals. (1.4)

- Count the trees in the Bengal Tiger study site and discuss data (1.4)
- Revisit Bengal Tiger study site maps (1.5)
- Discuss data about chalta trees in the Bengal Tiger Reserve (1.7)
- Explain why there are no new chalta trees growing in the Bengal Tiger Reserve (1.7)

The chalta trees in the Bengal Tiger Reserve make seeds. Only the seeds that get enough water and sunlight will sprout and grow into new adult plants. There are no new chalta trees because the chalta tree seeds must not be getting enough water and sunlight.

How do new plants grow? (1.5, 1.6)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

- Observe and sort seeds (1.5)
- Read about seeds in *Handbook of Habitats* (1.5)
- Sequence plant growth cards (1.5)
- Investigate water and seeds (1.6)
- Investigate sunlight and plant growth (1.6)
- Discuss relationships between science words (1.7)

- Plants make seeds that can grow into new plants. (1.5)
- Only seeds that get enough sunlight and water sprout and grow into full-grown plants. (1.6)

Do



Talk



Read



Write



Visualize



Navigating to the Coherence Flowchart

Plant and Animal Relationships

Printable Teacher Guide

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

Unit Overview

What's in This Unit?

What is the connection occurred in a broadleaf a great diversity of plant needs, but without the depend on animals to

[Read more >](#)

Chapters

Chapter 1: Why

LESSON 1.1
Pre-Unit Assessment

LESSON 1.4
Discovering the Problem in the Reserve

LESSON 1.5
What Are Seeds?

LESSON 1.6
Investigating Seed Needs

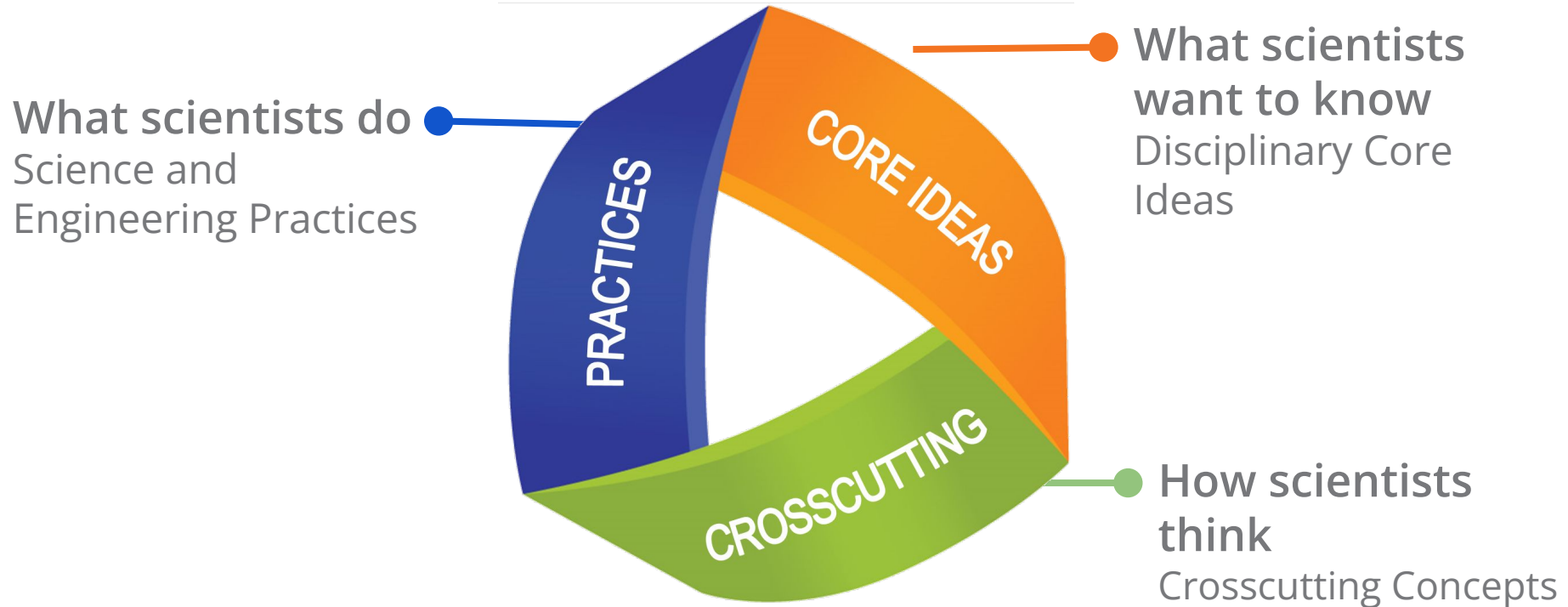
Printable Resources

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

Plant and Animal Relationships & NGSS

Pg. 3

Using 3-D teaching and learning for figuring out phenomena



Plant and Animal

Practices Disciplinary Core Ideas Crosscutting Concepts

As plant scientists, students use and create models to investigate and then plan and carry out investigations to explain why new chalta trees are not growing in a section of a broadleaf forest in India (systems and systems models; scale, proportion, and quantity). In so doing, they figure out how the parts of a habitat system interact generally and about seed dispersal mechanisms specifically (systems and systems models, structure and function).

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve?

Students investigate and analyze data about the relationship between seeds, sunlight, and water (systems and system models; scale, proportion, and quantity) in order to gather evidence to explain why new chalta trees are not growing in the Bengal Tiger Reserve (systems and system models; scale, proportion, and quantity).

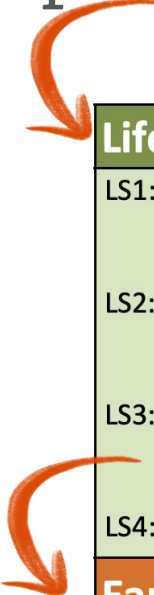
Chapter 2: Why aren't the chahta seeds getting what they need to grow?

Students obtain information about the role of different plant parts within the system of a plant in order to explain why new chalta trees are not getting what they need to grow in the Bengal Tiger Reserve (systems and system models, structure and function). Students also use and create models to figure out that seeds need space to spread their roots and leaves (systems and system models; scale, proportion, and quantity).

LESSON 1.4

Discovering the the Reserve

Disciplinary Core Ideas: **Plant and Animal Relationships**



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 **Plant and Animal Relationships**

inquiry

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

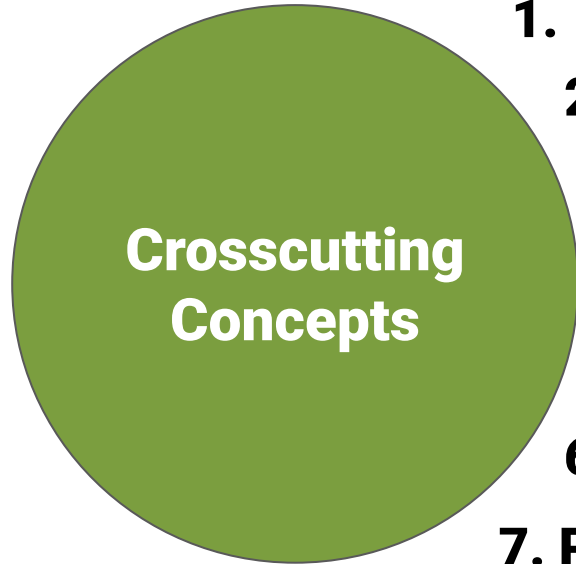
math

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: **Plant and Animal Relationships**



- 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**

Plant and Animal Relationships: 3D Statements

3-D Statements



Key

Practices Disciplinary Core Ideas Crosscutting Concepts

Unit Level

As plant scientists, students use and create models to investigate and then plan and carry out investigations to explain why new chalta trees are not growing in a section of a broadleaf forest in India (systems and systems models; scale, proportion, and quantity). In so doing, they figure out how the parts of a habitat system interact generally and about seed dispersal mechanisms specifically (systems and systems models, structure and function).


Plant and Animal Relationships



Explore or review the key planning documents


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

Plant and Animal Relationships

 Printable Teacher Guide ▾

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

Unit Overview




What's in This Unit?

What is the connection between chalta fruit, elephants, and droppings? Students find out as they investigate a mystery that really occurred in a broadleaf forest habitat in northeastern India. Earth is comprised of a vast array of complex habitats, each including a great diversity of plants and animals that interact in a myriad of ways. Like animals, plants are living things with particular needs, but without the ability to move on their own, how can plants get to places where those needs can be met? Many plants depend on animals to disperse their seeds to new places in their habitats where they are able to get the water and sunlight that


[Read more >](#)

Chapters


Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve? ⓘ




LESSON 1.1
Pre-Unit Assessment




LESSON 1.2
My Nature Notebook




LESSON 1.3
Investigating Habitats



LESSON 1.4
Discovering the Problem in the Reserve



LESSON 1.5
What Are Seeds?



LESSON 1.6
Investigating Seed Needs

Plant and Animal Relationships

Unit Question: How do the living things in a habitat depend on each other?

Navigating to the Lesson Overview Compilation

Plant and Animal Relationships

Printable Teacher Guide

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

Unit Overview

What's in This Unit

What is the connection between chalta fruit, elephants, and droppings? Students find out that a great diversity of plants and animals that interact in a myriad of ways. Like animals, plants need, but without the ability to move on their own, how can plants get to places where they depend on animals to disperse their seeds to new places in their habitats where they grow?

[Read more >](#)

Chapters

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve?

[Lesson Overview Compilation](#)

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Books in This Unit

Apps in This Unit

Opportunities for Unit Extensions

Flextensions in This Unit

Offline Preparation

Unit Overview

What's in This Unit?

What is the connection between chalta fruit, elephants, and droppings? Students find out that a great diversity of plants and animals that interact in a myriad of ways. Like animals, plants need, but without the ability to move on their own, how can plants get to places where they depend on animals to disperse their seeds to new places in their habitats where they grow?

[Read more >](#)

Chapters

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve?

LESSON 1.1
Pre-Unit Assessment

LESSON 1.2
My Nature Notebook

LESSON 1.3
Investigating Habitats

LESSON 1.4
Discovering the Problem in the Reserve

LESSON 1.5
What Are Seeds?

LESSON 1.6
Investigating Seed Needs

Lesson Overview Compilation

Lessons in This Unit

Chapter 1 Lessons

- Lesson 1.1: Pre-Unit Assessment
- Lesson 1.2: My Nature Notebook
- Lesson 1.3: Investigating Habitats
- Lesson 1.4: Discovering the Problem in the Reserve
- Lesson 1.5: What Are Seeds?
- Lesson 1.6: Investigating Seed Needs
- Lesson 1.7: Explaining Why There Are No New Chalta Trees

Chapter 2 Lessons

- Lesson 2.1: Exploring Plant Parts
- Lesson 2.2: A Plant Is a System
- Lesson 2.3: Investigating How Roots and Leaves Grow
- Lesson 2.4: Finding a Good Place to Grow
- Lesson 2.5: Why Aren't New Chalta Trees Growing?

Chapter 3 Lessons

- Lesson 3.1: Habitat Scientist
- Lesson 3.2: Investigating How Seeds Move
- Lesson 3.3: Investigating Seed Dispersal
- Lesson 3.4: Diagramming a System
- Lesson 3.5: Plant and Animal Interdependence
- Lesson 3.6: Explaining the Problem in the Reserve

Chapter 4 Lessons

- Lesson 4.1: Investigating Seeds
- Lesson 4.2: Planning the Seed Investigations
- Lesson 4.3: Conducting the Seed Investigations
- Lesson 4.4: End-of-Unit Assessment

Chapters at a Glance

Unit Question

How do the living things in a habitat depend on each other?

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve?

Chapter Question

Why aren't new chalta trees growing in the Bengal Tiger Reserve?

Plant and Animal Relationships



Unit Question: How do the living things in a habitat depend on each other?

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

Navigating to the Progress Build

Plant and Animal Relationships

Printable Teacher Guide

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

Unit Overview

What's in This Unit

What is the connection between a great diversity of plants and animals in a broadleaf forest? Without the ability to depend on animals to disperse their seeds, plants would not be able to grow in a broadleaf forest.

[Read more >](#)

Chapters

Chapter 1: Why are there so many different kinds of plants and animals in a broadleaf forest?



LESSON 1.1
Pre-Unit Assessment



LESSON 1.4
Discovering the Problem in the Reserve

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
Apps in This Unit
Opportunities for Unit Extensions
Flextensions in This Unit
Offline Preparation

What Are Seeds?

Unit Overview

What's in This Unit?

What is the connection between a great diversity of plants and animals in a broadleaf forest? Without the ability to depend on animals to disperse their seeds, plants would not be able to grow in a broadleaf forest.

[Read more >](#)

Chapters

Chapter 1: Why are there so many different kinds of plants and animals in a broadleaf forest?



LESSON 1.1
Pre-Unit Assessment



LESSON 1.4
Discovering the Problem in the Reserve

Investigating Seed Needs

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 guides the instruction designed to address specific gaps in students' understanding. This document will serve as an overview of the *Plant and Animal Relationships* 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.

In the *Plant and Animal Relationships* unit, students will learn to write scientific explanations about how an animal's role in dispersing a plant's seeds can help explain why there are no new chalta trees growing in a broadleaf forest habitat.

Prior knowledge (preconceptions): Students are likely to understand that some animals eat plants for food and that plants need water and sunlight to grow. Students may have learned that new plants grow from seeds. However, it is not expected that students have considered the interdependence of plants and animals in a habitat or how a plant's seeds can be moved to new places in a habitat. While these ideas are not necessary for students to participate fully in the unit, prior exposure to them will prepare students well for what they will be learning.

Progress Build Level 1: Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

There are many different types of habitats. Each of these habitats has many different kinds of plants and animals. These plants make seeds that can sprout and grow, but only those seeds that get enough sunlight and water will sprout and grow into full-grown plants.

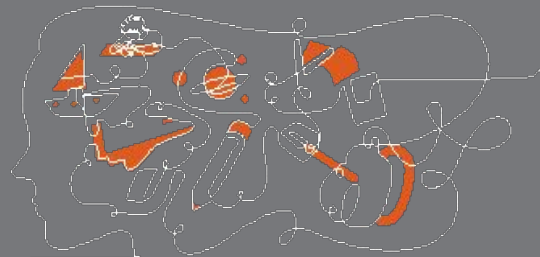
Progress Build Level 2: In order to grow, seeds need space to get sunlight on their leaves and to spread their roots to get water.

There are many different types of habitats. Each of these habitats has many different kinds of plants and animals. These plants make seeds that can sprout and grow, but only those seeds that get enough sunlight and water will sprout and grow into full-grown plants. **Plants have roots that spread in the soil to get water, and they have leaves to get sunlight. In order to grow into full-grown plants, seeds need space away from other plants so they can spread their roots and get sunlight on their leaves.**

Progress Build Level 3: Some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

Progress Build

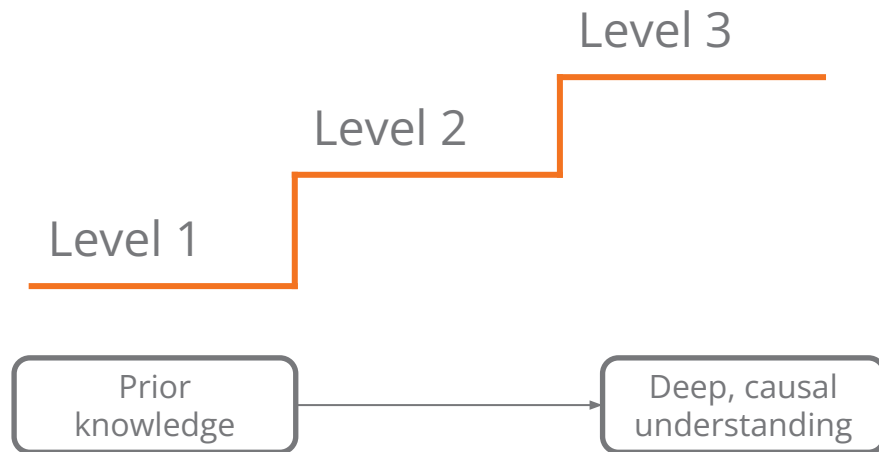
A Progress Build describes the way in which students' explanations of the central phenomenon should develop and deepen over the course of a unit. It is an important tool in understanding the design of the unit and in supporting students' learning. **A Progress Build organizes the sequence of instruction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

Plant and Animal Relationships

Prior knowledge (preconceptions): Students are likely to understand that some animals eat plants for food and that plants need water and sunlight to grow.

Level 1

Plants make seeds, which can sprout and grow into new plants only if they get enough sunlight and water.

Level 2

In order to grow, seeds need space to get sunlight on their leaves and to spread their roots to get water.

Level 3

Some plants depend on animals to disperse their seeds, and some animals depend on these plants for food.

Unpacking the Progress Build

Group Work time

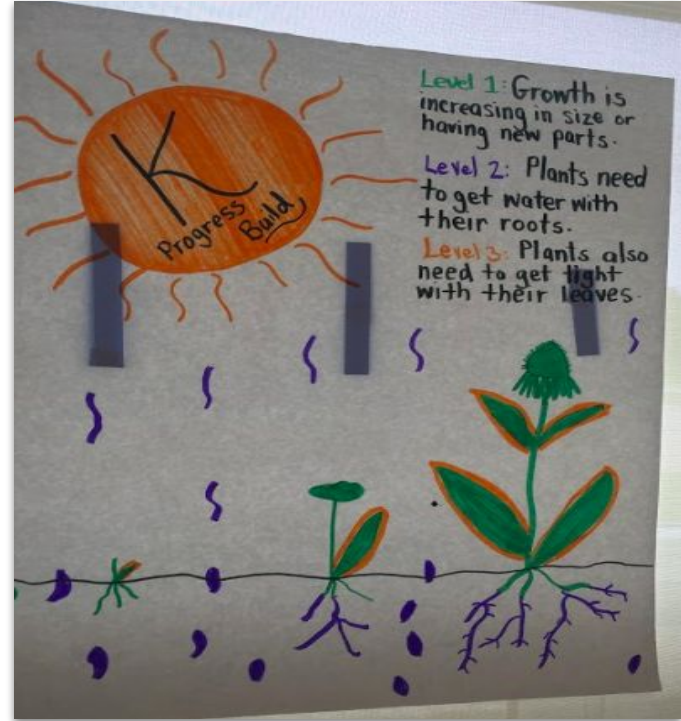
The purpose of this next work time is to understand what the levels of the Progress Build are in this unit, and reinforce understanding of its science concepts.



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.



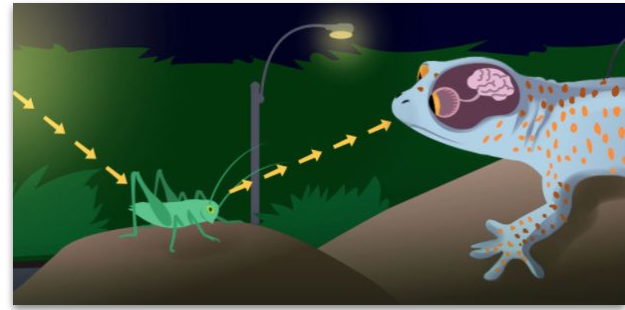
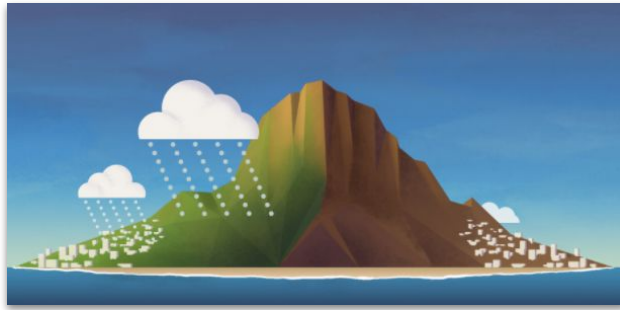
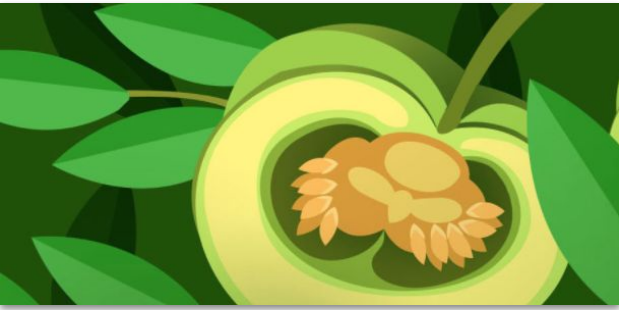
Progress Build analysis

Presentations



Questions?





Plan for the day

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

Plant and Animal Relationships: Chapter 1

Chapters

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve? ①



LESSON 1.1
Pre-Unit Assessment



LESSON 1.2
My Nature Notebook



LESSON 1.3
Investigating Habitats



LESSON 1.4
Discovering the Problem in
the Reserve



LESSON 1.5
What Are Seeds?



LESSON 1.6
Investigating Seed Needs



LESSON 1.7
Explaining Why There Are
No New Chalta Trees

Digging in to chapter 1

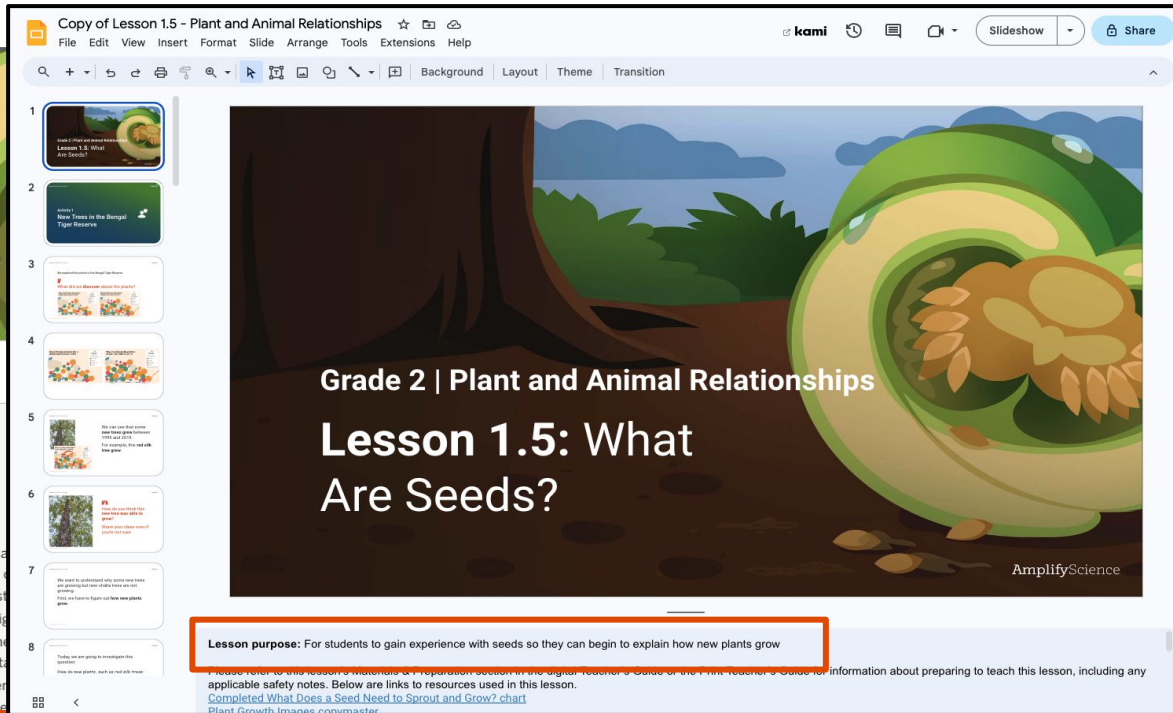
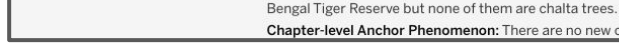
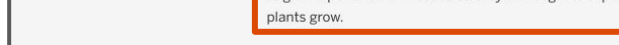
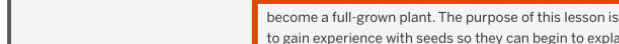
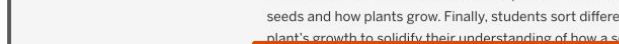
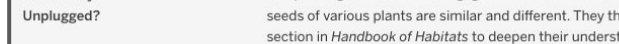
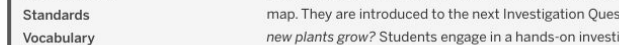
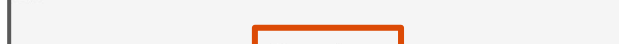
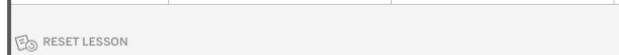
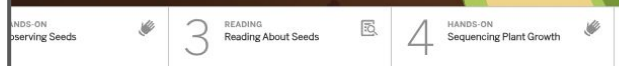
Group Work time

1. Form groups of 2, 3 or 4
2. Each group will pick a lesson in Chapter 1 (1.1 - 1.7)
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



Purpose of the lesson

Lesson Brief



Classroom
Slides

Amplify.

Modalities

Lesson at a Glance

1: New Trees in the Bengal Tiger Reserve (10 min.)

As students investigate the Bengal Tiger Reserve Sample Study Site Maps, they are invited to consider where new plants come from. A new Investigation Question initiates seed and plant investigations.

2: Observing Seeds (25 min.)

Students observe a variety of seeds to make note of the ways that seeds from different plants are similar and different. Students sort the seeds by size, which provides an opportunity for an On-the-Fly Assessment of students' ability to think about relative size when categorizing objects.

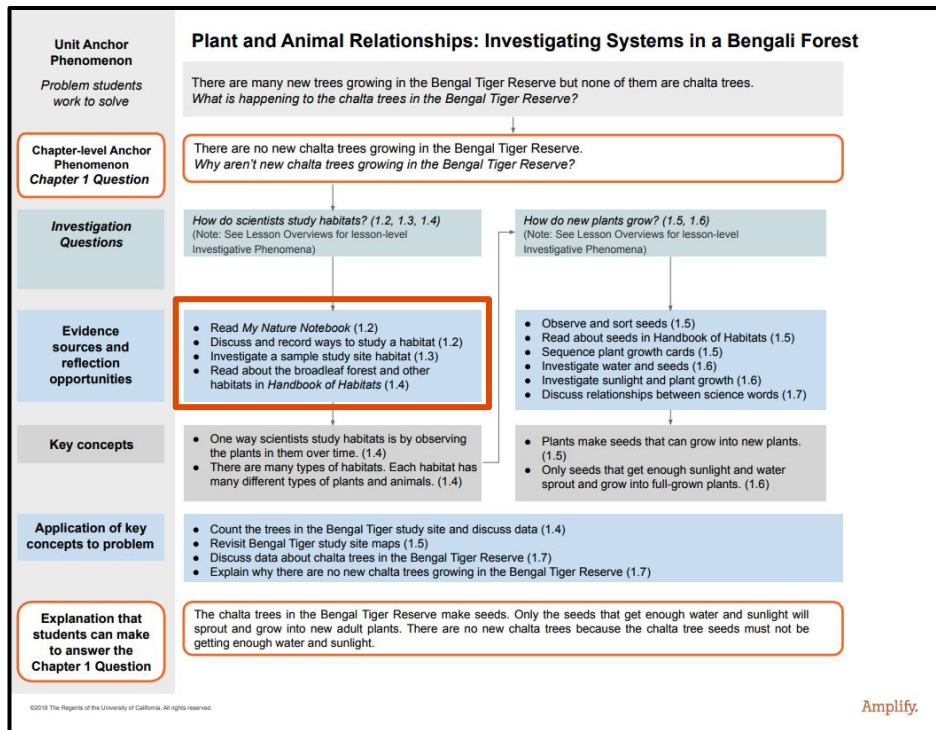
3: Reading About Seeds (15 min.)

Students deepen their understanding of seeds and how new plants grow as they read a section of *Handbook of Habitats*.

4: Sequencing Plant Growth (10 min.)

As students sequence a series of images depicting a plant's growth, they consolidate their understanding of how a seed becomes a new plant and leverage core vocabulary.

The Lesson Brief



Coherence Flowchart

Vocabulary

Lesson 1.5:
What Are Seeds?

Printable Lesson Guide

HANDS-ON: Preserving Seeds

3 READING: Reading About Seeds

4 HANDS-ON: Sequencing Plant Growth

RESET LESSON

Overview

Materials & Preparation

Differentiation

Standards

Vocabulary

Unplugged?

Overview

In this lesson, students continue to discuss what has changed in the Bengal Tiger Reserve and how new trees have appeared on the 2015 map. They are introduced to the next Investigation Question: *How do new plants grow?* Students engage in a hands-on investigation of how seeds of various plants are similar and different. They then read a section in *Handbook of Habitats* to deepen their understanding of seeds and how plants grow. Finally, students sort different stages of a plant's growth to solidify their understanding of how a seed can become a full-grown plant. The purpose of this lesson is for students to gain experience with seeds so they can begin to explain how new plants grow.

Unit Anchor Phenomenon: There are many new trees growing in the Bengal Tiger Reserve but none of them are chalta trees.

Chapter-level Anchor Phenomenon: There are no new chalta trees

Materials & Preparation

Materials

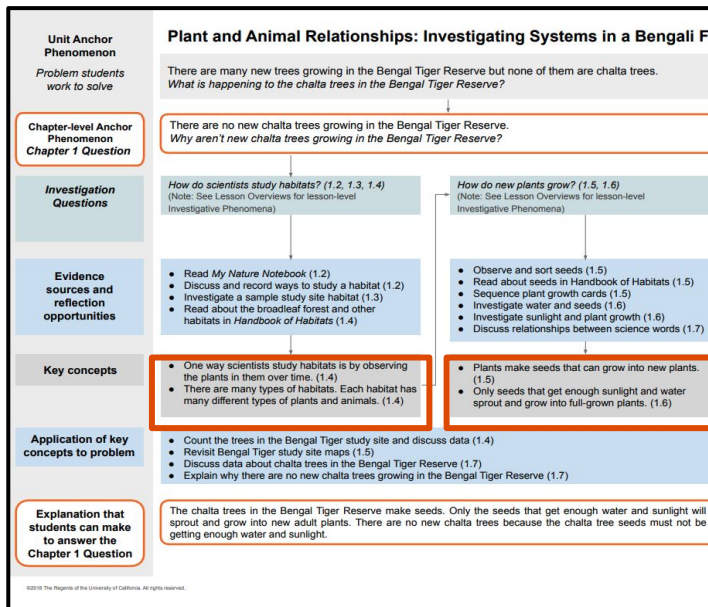
For the Classroom Wall

- key concept: *Plants make seeds that can grow into new plants.*
- 2 vocabulary cards: *seeds, sprout*
- Counting Trees in the Sample Study Site chart
- Setting a Purpose chart

- chart
- Plant Growth Images copymaster
- Setting a Purpose chart: Completed
- Plant and Animal Relationships Investigation Notebook, pages 11–13

Lesson
Brief:

Key Concepts



Coherence
Flowchart

Lesson
Overview
Compilation

Lesson Overview Compilation

Lessons in This Unit

Chapter 1 Lessons

Lesson 1.1: Pre-Unit Assessment
Lesson 1.2: My Nature Notebook
Lesson 1.3: Investigating Habitats
Lesson 1.4: Discovering the Problem in the Reserve
Lesson 1.5: What Are Seeds?
Lesson 1.6: Investigating Seed Needs
Lesson 1.7: Explaining Why There Are No New Chalta Trees

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Chapter 4 Lessons

Lesson 4.1: Investigating Seeds
Lesson 4.2: Planning the Seed Investigations
Lesson 4.3: Conducting the Seed Investigations
Lesson 4.4: End-of-Unit Assessment

Chapters at a Glance

Unit Question

How do the living things in a habitat depend on each other?

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve?

Chapter Question

Why aren't new chalta trees growing in the Bengal Tiger Reserve?

Investigation Questions

- How do scientists study habitats? (1.2, 1.3, 1.4)
- How do new plants grow? (1.5, 1.6)

Key Concepts

- One way scientists study habitats is by observing the plants in them over time. (1.4)
- There are many types of habitats. Each habitat has many different types of plants and animals. (1.4)
- Plants make seeds that can grow into new plants. (1.5)
- Only seeds that get enough sunlight and water sprout and grow into full-grown plants. (1.6)

Materials & Preparation

Materials

For the Classroom Wall

- key concept: *Plants make seeds that can grow into new plants.*
- 2 vocabulary cards: *seeds, sprout*
- Counting Trees in the Sample Study Site chart
- Setting a Purpose chart

Materials and
Preparation

Digging in to chapter 1

Group Work time

1. Form groups of 2, 3, or 4
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 - a. Purpose of lesson
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 - d. Key Concepts introduced



Presentations



Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve? ⓘ



LESSON 1.1
Pre-Unit Assessment



LESSON 1.2
My Nature Notebook



LESSON 1.3
Investigating Habitats



LESSON 1.4
Discovering the Problem in
the Reserve



LESSON 1.5
What Are Seeds?



LESSON 1.6
Investigating Seed Needs



LESSON 1.7
Explaining Why There Are
No New Chalta Trees

**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**

Plant and Animal Relationships: Investigating Systems in a Bengali Forest

There are many new trees growing in the Bengal Tiger Reserve but none of them are chalta trees.
What is happening to the chalta trees in the Bengal Tiger Reserve?

There are no new chalta trees growing in the Bengal Tiger Reserve.
Why aren't new chalta trees growing in the Bengal Tiger Reserve?

How do scientists study habitats? (1.2, 1.3, 1.4)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

How do new plants grow? (1.5, 1.6)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

- Read *My Nature Notebook* (1.2)
- Discuss and record ways to study a habitat (1.2)
- Investigate a sample study site habitat (1.3)
- Read about the broadleaf forest and other habitats in *Handbook of Habitats* (1.4)

- Observe and sort seeds (1.5)
- Read about seeds in *Handbook of Habitats* (1.5)
- Sequence plant growth cards (1.5)
- Investigate water and seeds (1.6)
- Investigate sunlight and plant growth (1.6)
- Discuss relationships between science words (1.7)

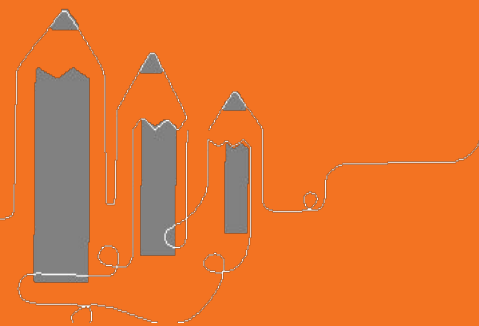
- One way scientists study habitats is by observing the plants in them over time. (1.4)
- There are many types of habitats. Each habitat has many different types of plants and animals. (1.4)

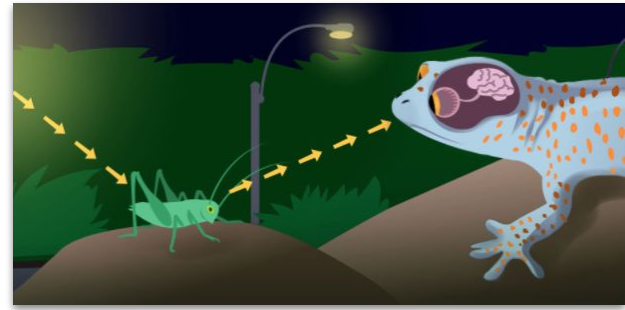
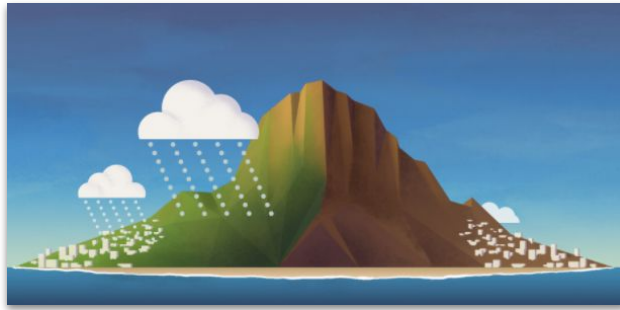
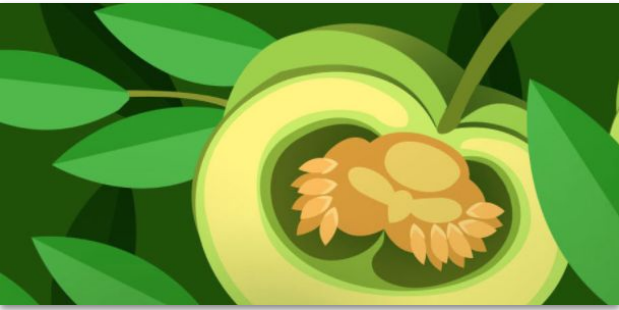
- Plants make seeds that can grow into new plants. (1.5)
- Only seeds that get enough sunlight and water sprout and grow into full-grown plants. (1.6)

- Count the trees in the Bengal Tiger study site and discuss data (1.4)
- Revisit Bengal Tiger study site maps (1.5)
- Discuss data about chalta trees in the Bengal Tiger Reserve (1.7)
- Explain why there are no new chalta trees growing in the Bengal Tiger Reserve (1.7)

The chalta trees in the Bengal Tiger Reserve make seeds. Only the seeds that get enough water and sunlight will sprout and grow into new adult plants. There are no new chalta trees because the chalta tree seeds must not be getting enough water and sunlight.

Break





Plan for the day

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

Plant and Animal Relationships: Lesson 1.5

Chapter 1: Why aren't new chalta trees growing in the Bengal Tiger Reserve? ⓘ



LESSON 1.1
Pre-Unit Assessment



LESSON 1.2
My Nature Notebook



LESSON 1.3
Investigating Habitats



LESSON 1.4
Discovering the Problem in
the Reserve



LESSON 1.5
What Are Seeds?



LESSON 1.6
Investigating Seed Needs



LESSON 1.7
Explaining Why There Are
No New Chalta Trees

4 Easy Steps to Teaching a lesson

DIRECTIONS:

1. 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.

The screenshot shows the interface for Lesson 1.5: What Are Seeds?. At the top, there's a title bar with the lesson title and a 'Printable Lesson Guide' button. Below this is a navigation bar with four tabs: 'HANDS-ON Observing Seeds', '3 READING Reading About Seeds', '4 HANDS-ON Sequencing Plant Growth', and a fourth tab. The main content area is divided into three sections: 'Overview', 'Materials & Preparation', and 'Digital Resources'. The 'Overview' section contains a paragraph about the lesson's focus on seeds and plant growth. The 'Materials & Preparation' section lists documents like 'Differentiation Standards' and 'Vocabulary Unplugged?'. The 'Digital Resources' section lists various resources like 'Classroom Slides 1.5 | PowerPoint', 'Classroom Slides 1.5 | Google Slides', 'All Projections', 'What Does a Seed Need to Sprout and Grow? chart', 'Plant Growth Images copymaster', 'Setting a Purpose chart: Completed', and 'Plant and Animal Relationships Investigation Notebook, pages 11-13'. Four numbered orange arrows point to specific elements: Arrow 1 points to the 'Classroom Slides 1.5 | PowerPoint' link in the Digital Resources section. Arrow 2 points to the 'Overview' section header. Arrow 3 points to the 'Materials & Preparation' section header. Arrow 4 points to the 'Vocabulary Unplugged?' link in the Materials & Preparation section.

Lesson 1.5: What Are Seeds?

Printable Lesson Guide

HANDS-ON Observing Seeds 3 READING Reading About Seeds 4 HANDS-ON Sequencing Plant Growth

RESET LESSON

Overview

Materials & Preparation

Differentiation Standards

Vocabulary Unplugged?

Overview

In this lesson, students continue to discuss what has changed in the Bengal Tiger Reserve and how new trees have appeared on the 2015 map. They are introduced to the next Investigation Question: *How do new plants grow?* Students engage in a hands-on investigation of how seeds of various plants are similar and different. They then read a section in *Handbook of Habitats* to deepen their understanding of seeds and how plants grow. Finally, students sort different stages of a plant's growth to solidify their understanding of how a seed can become a full-grown plant. The purpose of this lesson is for students to gain experience with seeds so they can begin to explain how new plants grow.

Unit Anchor Phenomenon: There are many new trees growing in the Bengal Tiger Reserve but none of them are chalta trees.

Chapter-level Anchor Phenomenon: There are no new chalta trees

Digital Resources

- Classroom Slides 1.5 | PowerPoint
- Classroom Slides 1.5 | Google Slides
- All Projections
- What Does a Seed Need to Sprout and Grow? chart
- Plant Growth Images copymaster
- Setting a Purpose chart: Completed
- Plant and Animal Relationships Investigation Notebook, pages 11-13

Unit: Plant and Animal Relationships

Lesson: 1.5

Purpose: The purpose of this lesson is for students to gain experience with seeds so they can begin to explain how new plants grow.

Materials and Preparation: Before the Lesson

1. Write the Investigation Question on the board. Write “How do new plants grow?”
2. Create the “What Does A Seed Need to sprout and Grow? Chart
3. Prepare cups of seeds.

Plant and Animal Relationships



Unit Question

How do the living things in a habitat depend on each other?

Chapter 1 Question

Why aren't new chalta trees growing in the Bengal Tiger Reserve?

Investigation Question: How do scientists study habitats?

Key Concepts

One way scientists study habitats is by observing the plants in them over time.

There are many types of habitats. Each habitat has many different types of plants and animals.

Vocabulary

habitat

observe



Grade 2 | Plant and Animal Relationships

Lesson 1.5: What Are Seeds?

Activity 1

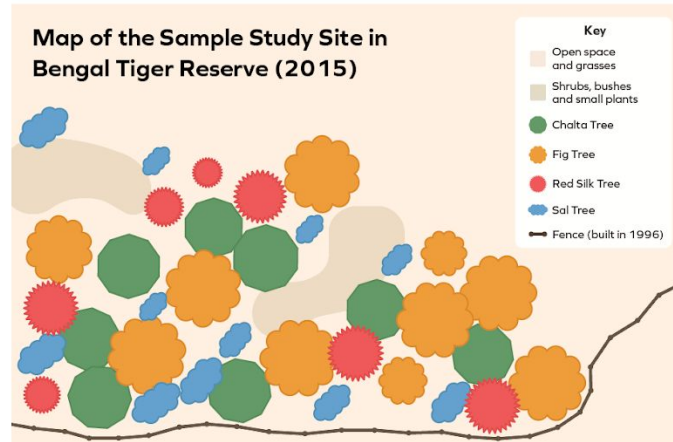
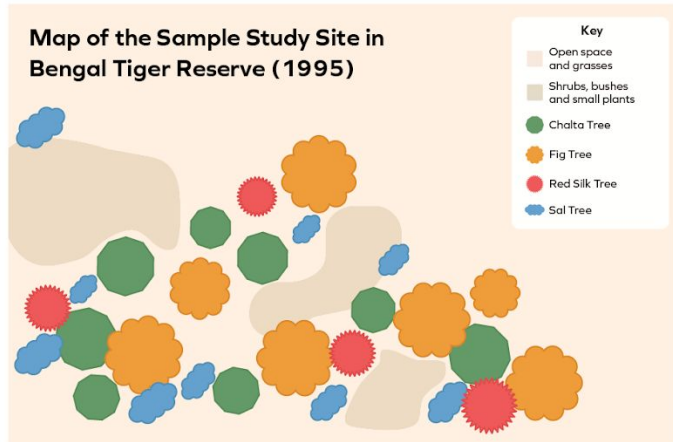
New Trees in the Bengal Tiger Reserve



We explored the plants in the Bengal Tiger Reserve.

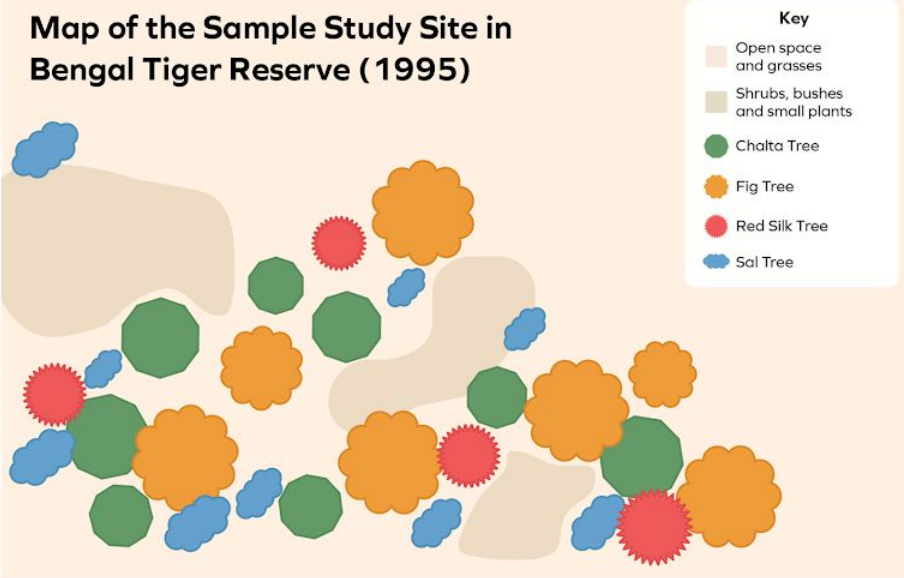


What did we **discover** about the plants?

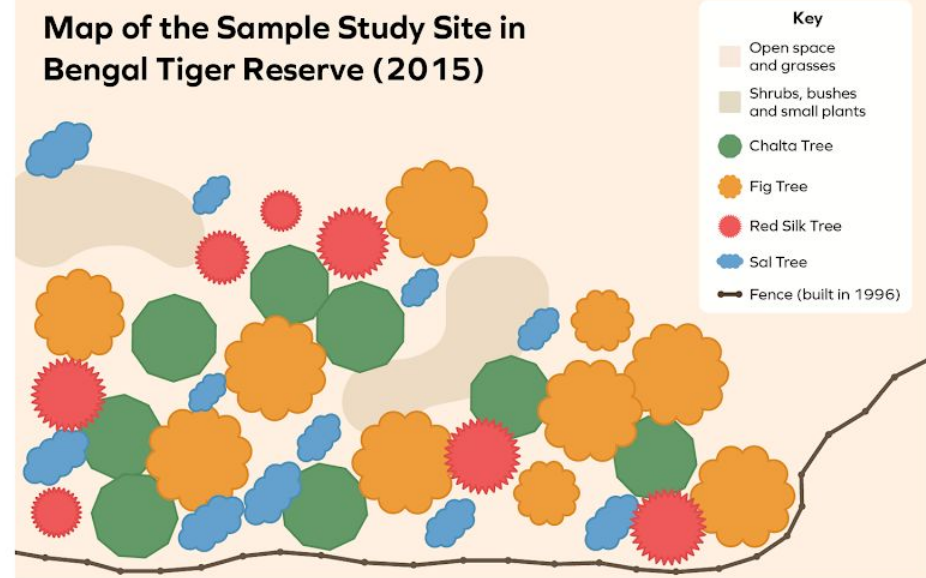


Which plants on the 2015 map are new plants?

Map of the Sample Study Site in
Bengal Tiger Reserve (1995)



Map of the Sample Study Site in
Bengal Tiger Reserve (2015)



I think _____ is a new plant.

Today, we are going to investigate this question:

How do new plants grow?



What ideas do you already have about **how new plants—like trees, bushes, and grasses—grow?**

One idea I have about how new plants grow is _____.

Activity 2

Observing Seeds





We think that **seeds** might have something to do with how **new plants** grow.

Setting a Purpose

Reading	Investigating
	Investigate what seeds look like and find out how seeds from different plants are similar and different.

Let’s record the **purpose** of our **investigation**.



Let's observe the seeds
to see **what they look like**
and to see what we
notice about how they
are **similar and different.**



Observe and **sort** the seeds into groups based on what they look like.



What different
categories did you use to
sort your seeds?

One category I used to sort my seeds is _____.

Name: _____ Date: _____

Seed Observations

Directions:

1. Put your seeds in order from biggest to smallest.
2. Pick two seeds that are different sizes.
3. Draw a picture of each seed in the boxes below.
4. Label your drawings "bigger" and "smaller."
5. Complete the sentence in each box.

<p>This seed is about the same size as a _____.</p>	<p>This seed is about the same size as a _____.</p>
---	---

Turn to page 12 in your notebooks.

Let's go over the
directions together.

Name: _____ Date: _____

Seed Observations

Directions:

1. Put your seeds in order from biggest to smallest.
2. Pick two seeds that are different sizes.
3. Draw a picture of each seed in the boxes below.
4. Label your drawings "bigger" and "smaller."
5. Complete the sentence in each box.

<p>This seed is about the same size as a _____.</p>	<p>This seed is about the same size as a _____.</p>
---	---



Order your seeds from
biggest to smallest.

Draw pictures of two
seeds that are different
sizes.

Seeds



These are images of seeds like the ones you just observed.



What **plant** do you predict these **seeds** will grow into? What do you think the plants will look like?

Plants

Oak Tree



Marigold Plant



Lima Bean Plant



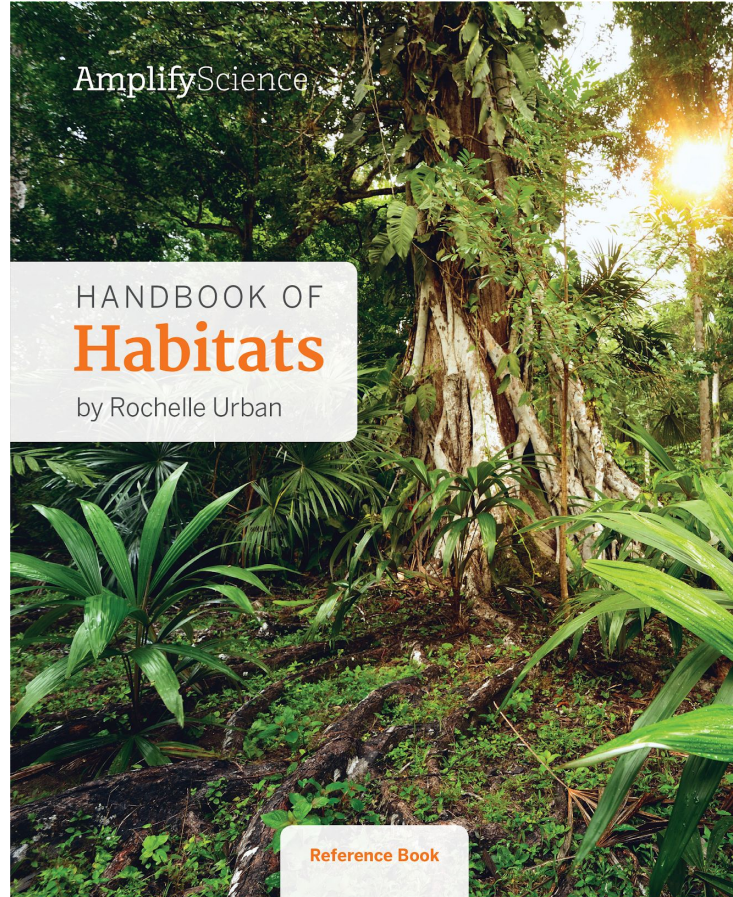
Activity 3

Reading About Seeds



Remember, we are investigating this question:

How do new plants grow?



Let's read in *Handbook of Habitats* to find out more about seeds and how new plants grow.

Setting a Purpose

Reading	Investigating
Find out more about seeds and how new plants grow.	Investigate what seeds look like and find out how seeds from different plants are similar and different.

Let’s record our **purpose** for reading.

Contents

Different Habitats 4

Kinds of Plants 6

Making New Plants 7

Amazon Rain Forest 10

Broadleaf Forest 16

Everglades Wetlands 22

Serengeti Plains 28

Sonoran Desert 34

A New York City Park 40

Glossary 46

Index 47

Turn to page 3.

Remember, the **table of contents** lists the sections of the book and tells us where to find them.

Making New Plants

Plants start as **seeds**. A seed is something that can **sprout** and grow into a plant. Seeds may look very different. Still, every seed is made by a plant.



Some seeds are big. A coconut is a very big seed.



Some seeds are inside sweet fruits, like these apple seeds.



Some seeds are inside hard shells. A walnut is a seed with a very hard shell.



Some seeds are small. The seeds inside this kiwi are tiny.



Some seeds have fluffy parts, like these dandelion seeds.

Turn to page 7.



Read **pages 7–9** with your partner.



What **new** information did you find out about seeds?

What did you find out about **how new plants grow**?

**What Does a Seed Need to
Sprout and Grow?**



We will use this chart to keep track of what a seed needs to grow.



Based on what we read in *Handbook of Habitats*, what are **two things that seeds need to grow?**

**What Does a Seed Need to
Sprout and Grow?**

water

sunlight

We will **add to this chart**
as we continue to
investigate seeds.

Vocabulary



seeds

things a plant makes that can grow into new plants

Vocabulary



sprout

to start to grow from a seed

Activity 4

Sequencing Plant Growth



Strawberry Plants



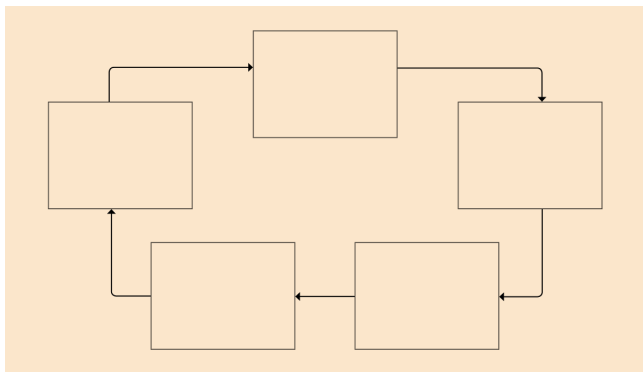
We think we know **how seeds grow** into full-grown plants.

Name: _____ Date: _____

New Plant Growth

Directions:

1. Put the pictures in order of how you think the plant grows.
2. Glue one picture in each box below.
3. Decide which picture is a picture of seeds. Then label it "seeds."
4. Decide which picture is a picture of a seed sprouting. Then label it "seed sprouting."
5. Decide which picture is a picture of a full-grown plant. Then label it "full-grown plant."



Turn to page 13 in your notebooks.



Let's use what we know to put pictures of a plant in **growing order**.



Based on what we've investigated so far, what do we know about **how new plants grow?**

Key Concept

Plants make seeds that can grow into new plants.

End of Lesson



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Plant and Animal Relationships



Unit Question

How do the living things in a habitat depend on each other?

Chapter 1 Question

Why aren't new chalta trees growing in the Bengal Tiger Reserve?

Investigation Question: How do scientists study habitats?

Investigation Question: How do new plants grow?

Key Concepts

One way scientists study habitats is by observing the plants in them over time.

There are many types of habitats. Each habitat has many different types of plants and animals.

Vocabulary

habitat

observe

seeds

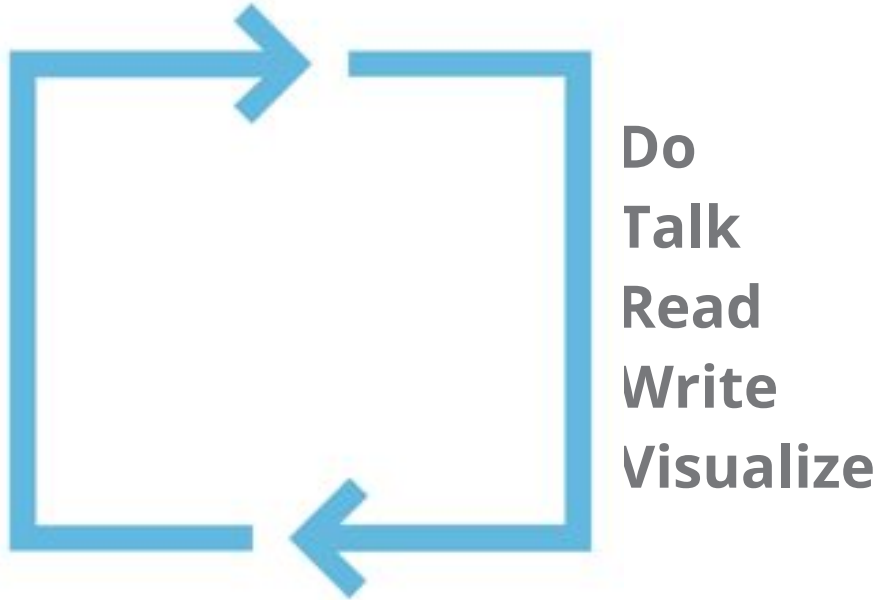
sprout

Plant and Animal Relationships



Along with firsthand experiences, students **read** informational texts, focus on how to **plan and carry out** investigations about plant needs, and **engage in student-to-student discussions** as they come to understand some challenging life science concepts. Students use their newfound understanding of plant needs and plant-animal relationships in a habitat to **explain** what chalta seeds need to grow into full-grown trees and why no new chalta trees are growing in the Bengal Tiger Reserve.

Lesson 1.5 Multimodal learning

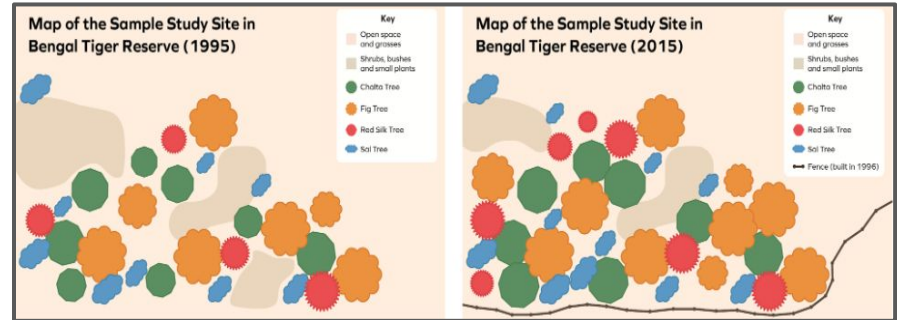


Plant and Animal Relationships Lesson 1.5

Visualize: Investigate New Trees in the Bengal Tiger Reserve

Students investigate the Bengal Tiger Reserve Sample Study Site Maps.

A new Investigation Question initiates seed and plant investigations



Plant and Animal Relationships Lesson 1.5

Do: Observing and Sorting Seeds

- Students observe a variety of seeds to make note of the ways that seeds from different plants are similar or different
- Students sort seeds by size



Plant and Animal Relationships Lesson 1.5

Write: Draw/Write Pictures of Seeds

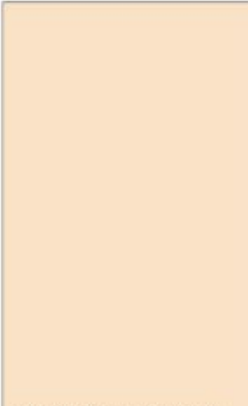
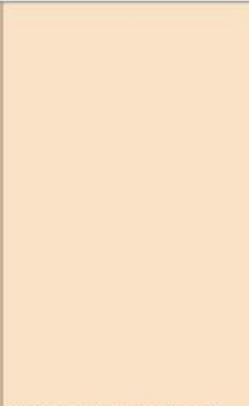
Students draw pictures of two seeds that are different sizes by using relative scales such as bigger and smaller to describe and categorize objects.

Name: _____ Date: _____

Seed Observations

Directions:

1. Put your seeds in order from biggest to smallest.
2. Pick two seeds that are different sizes.
3. Draw a picture of each seed in the boxes below.
4. Label your drawings "bigger" and "smaller."
5. Complete the sentence in each box.

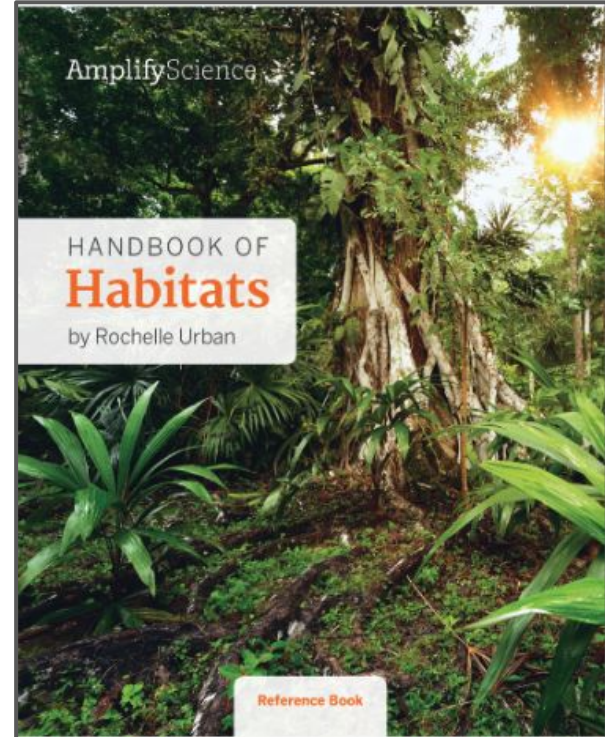
	
This seed is about the same size as a _____	This seed is about the same size as a _____

12 Plant and Animal Relationships—Lesson 1.5
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Plant and Animal Relationships Lesson 1.5

Read: About seeds

Students deepen their understanding of seeds and how new plants grow as they read a section of Handbook of Habitats.



Plant and Animal Relationships Lesson 1.5

Do: Sequencing Plan Growth

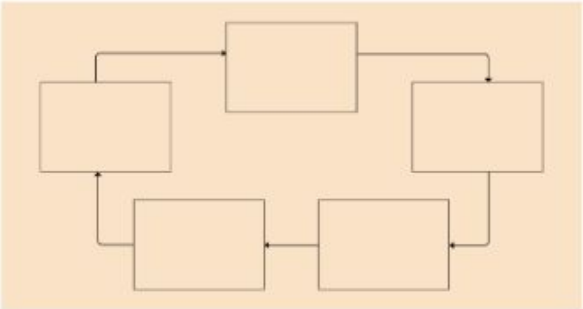
Students sequence a series of images depicting a plant's growth, they consolidate their understanding of how a seed becomes a new plant and leverage core vocabulary.

Name: _____ Date: _____

New Plant Growth

Directions:

1. Put the pictures in order of how you think the plant grows.
2. Glue one picture in each box below.
3. Decide which picture is a picture of seeds. Then label it "seeds."
4. Decide which picture is a picture of a seed sprouting. Then label it "seed sprouting."
5. Decide which picture is a picture of a full-grown plant. Then label it "full-grown plant."

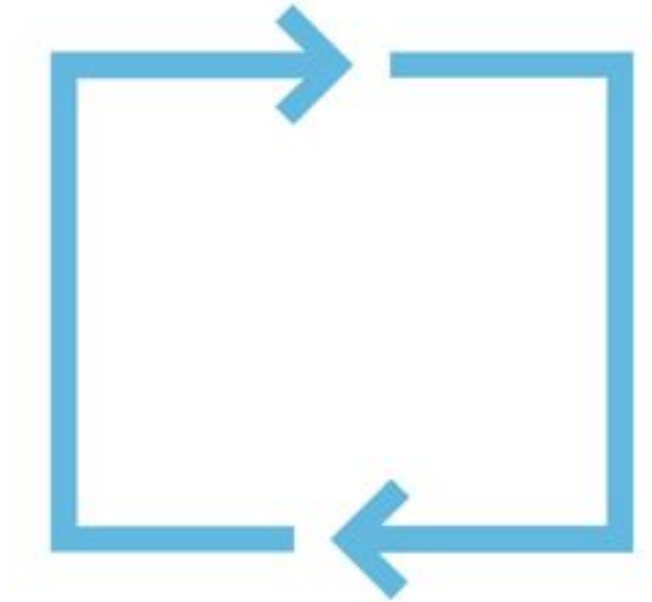


Plant and Animal Relationships—Lesson 1.5

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Lesson 1.5 Multimodal learning



Do

Observing and sorting seeds.
Sequencing Plant Growth

Talk

Read

Reading about Seeds

Write

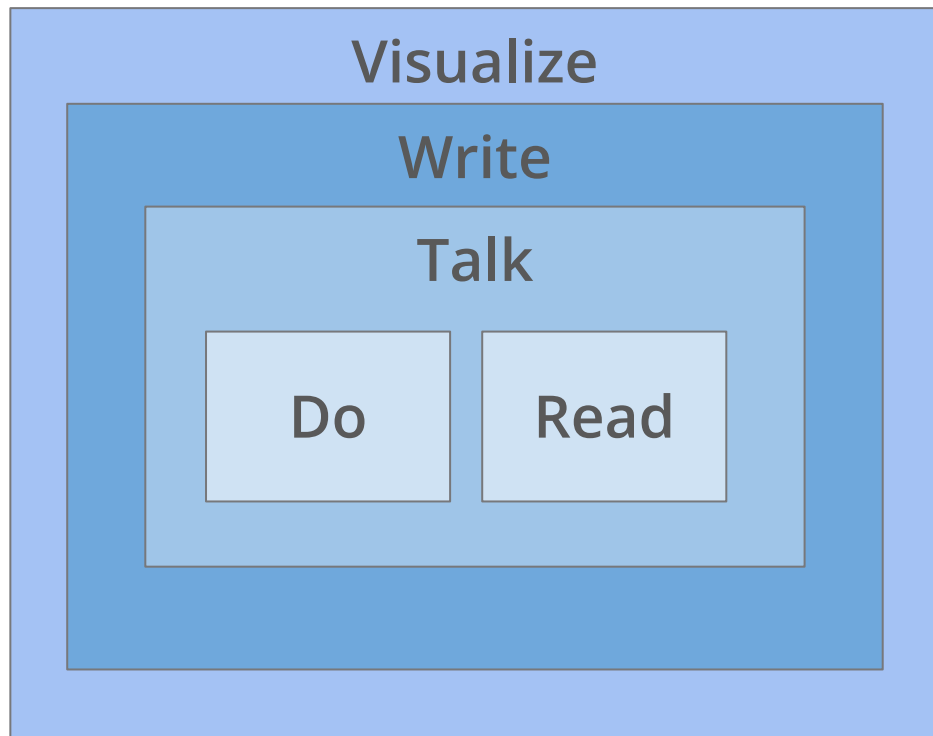
Drawing pictures of two seeds
Recording the sequence of Plant Growth

Visualize

Investigating the Bengal Tiger Reserve
Sample Study Site Map

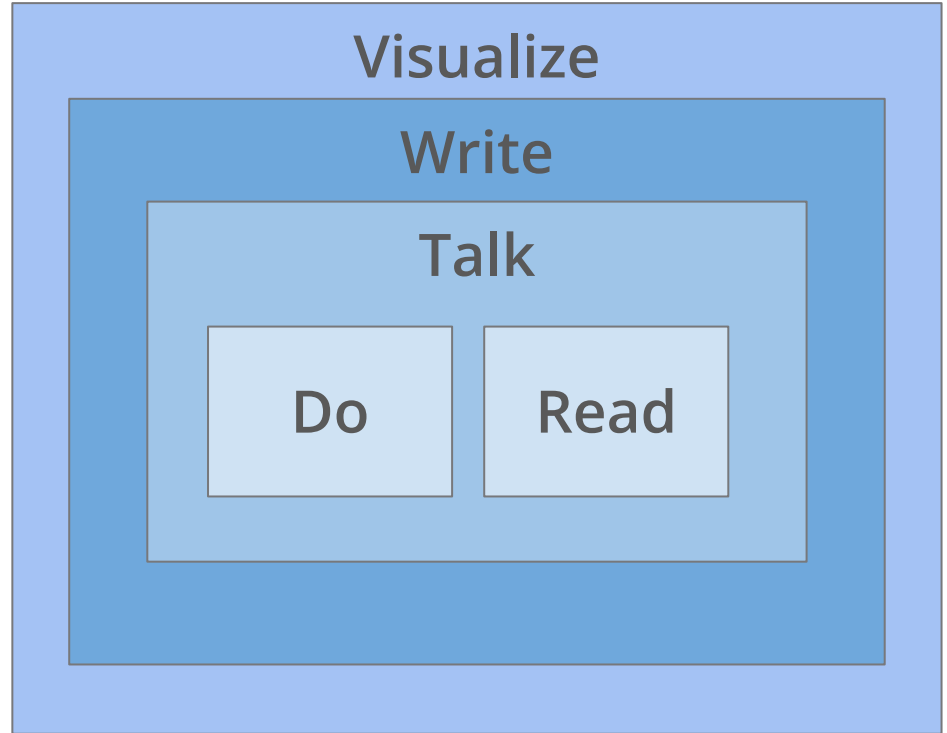
Multimodal instruction (multiple at bats)

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



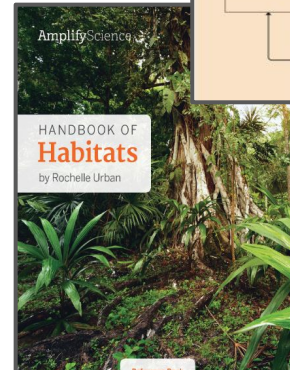
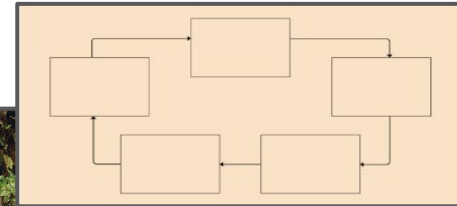
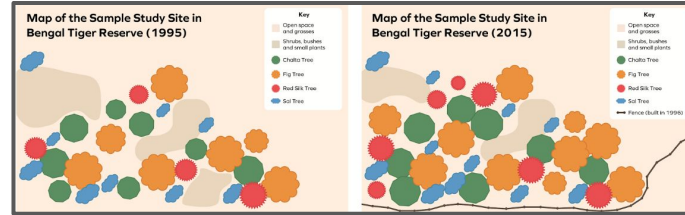
Reflection

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



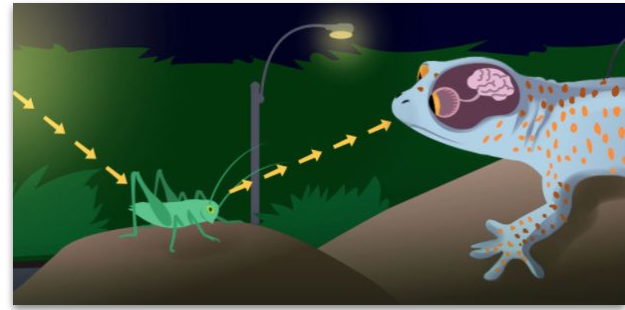
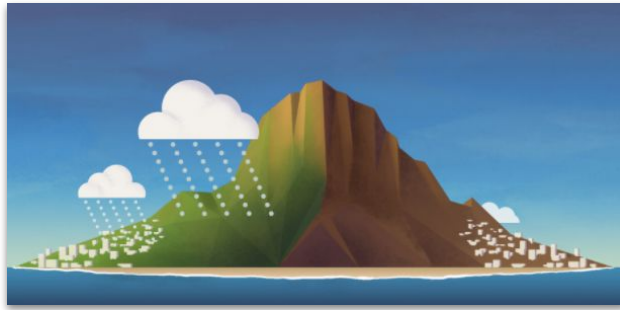
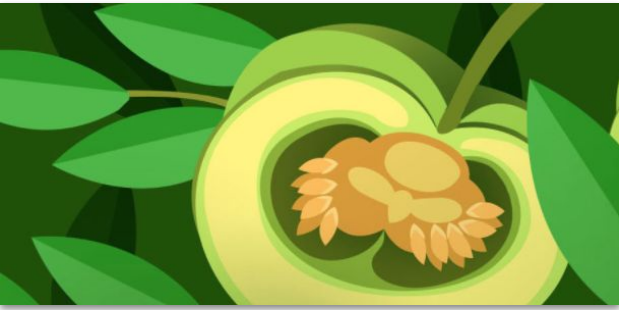
Evidence sources work together

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

Plant and Animal Relationships: Chapter 2

Chapter 2: Why aren't the chalta seeds getting what they need to grow? ⓘ



LESSON 2.1
Exploring Plant Parts



LESSON 2.2
A Plant Is a System



LESSON 2.3
Investigating How Roots
and Leaves Grow



LESSON 2.4
Finding a Good Place to
Grow



LESSON 2.5
Why Aren't New Chalta
Trees Growing?

Digging into Chapter 2

Group Work time

1. In your group, pick a lesson in Chapter 2 (from 2.1 to 2.5)
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: Why aren't the chalta seeds getting what they need to grow? ⓘ



LESSON 2.1
Exploring Plant Parts



LESSON 2.2
A Plant Is a System



LESSON 2.3
Investigating How Roots
and Leaves Grow



LESSON 2.4
Finding a Good Place to
Grow



LESSON 2.5
Why Aren't New Chalta
Trees Growing?

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

Plant and Animal Relationships: Investigating Systems in a Bengali Forest

There are many new trees growing in the Bengal Tiger Reserve but none of them are chalta trees.
What is happening to the chalta trees in the Bengal Tiger Reserve?

There are no new chalta trees growing in the Bengal Tiger Reserve.
Why aren't the chalta seeds getting what they need to grow?

How do plants get the water and sunlight that they need to grow? (2.1, 2.2)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

- Observe and measure roots and leaves (2.1)
- Read *A Plant Is a System* (2.2)
- Discuss and record relationships between science words (2.2)

- Plants have leaves that get sunlight. Plants have roots that get water from the soil. (2.2)

Why can't plants always get the sunlight and water they need to grow? (2.3, 2.4, 2.5)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

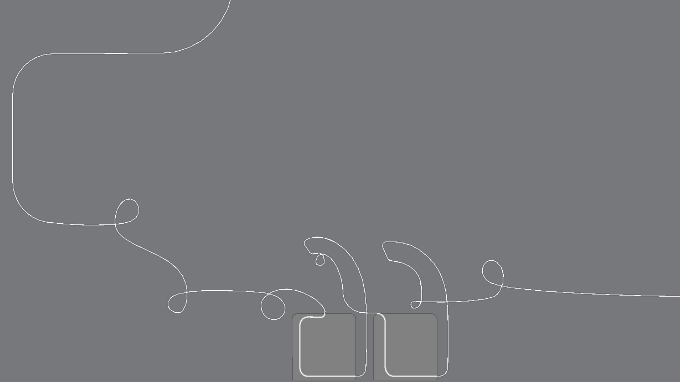
- Write about roots and leaves (2.3)
- Play Growing Roots game (2.3)
- Observe Sunlight and Leaves Model (2.3)
- Participate in Plant Growth Body Model (2.3)
- Test predictions of which seeds will grow with digital Modeling Tool (2.4)
- Write about a good place for a seed to grow (2.4)
- Discuss and test predictions with Modeling Tool (2.5)

- Without enough space, plants can't get sunlight and water they need to grow. (2.4)
- Leaves need space to get sunlight. Roots need space in the soil to get water. (2.4)

- Compose a scientific explanation about why the chalta seeds are not getting the sunlight and water they need to grow (2.5)

The chalta trees in the Bengal Tiger Reserve use their roots to get water from the soil and their leaves to get sunlight. The chalta tree seeds need to move away from other plants and get to a place where they can spread their roots and leaves to get what they need to grow. The chalta tree seeds must not be getting to a new place where they can grow.

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

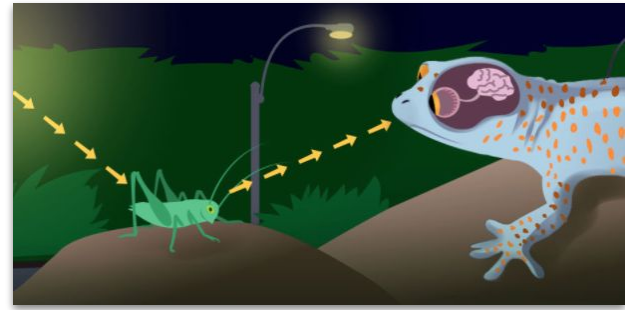
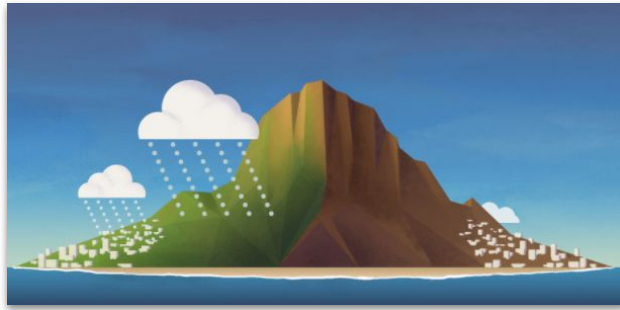
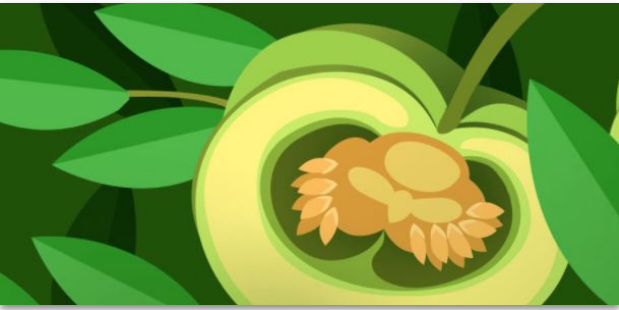


Lunch Break

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

Planning Resources **Links**

AmplifyScience

Gr. 2 Plant and Animal Relationships

Participant Links

[G2 Plant and Animal Relationships Deep Dive](#) (pdf)

Planning Resources

[Gr. 2 Unit 1 Lesson Planning Slides](#) (forced copy)

[Gr. 2 Plant and Animal Relationships Completed Material Prep Doc](#) (pdf)

[Gr. 2 Plant and Animal Relationships Chart List](#) (pdf)

[Gr. 2 Plant and Animal Relationships Investigation Questions](#) (pdf)

Other Resources

[Caregivers Site](#)

[Classroom Slides](#)

[Unit Guide Resources](#)

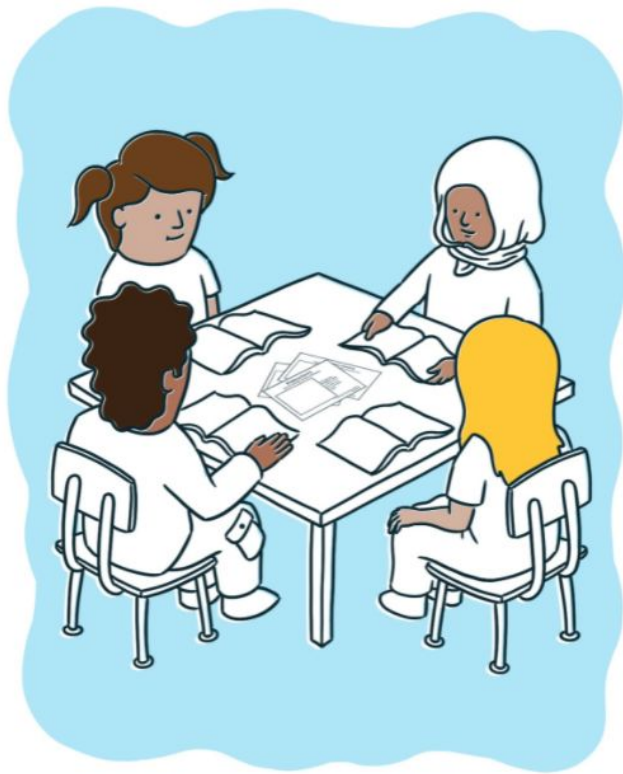


<https://bit.ly/467Ue4S>

Planning time

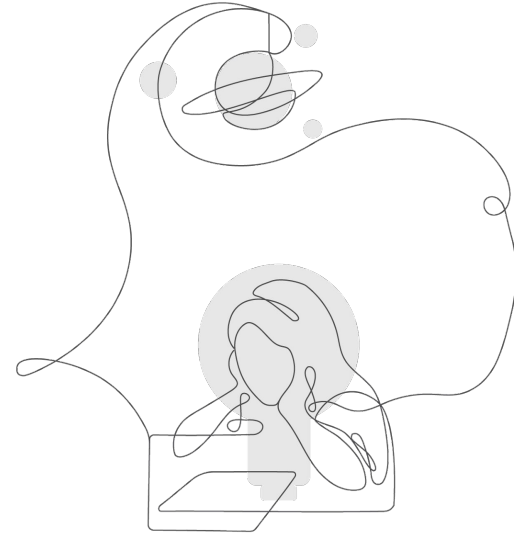
(Be prepared to share what you have been planning)

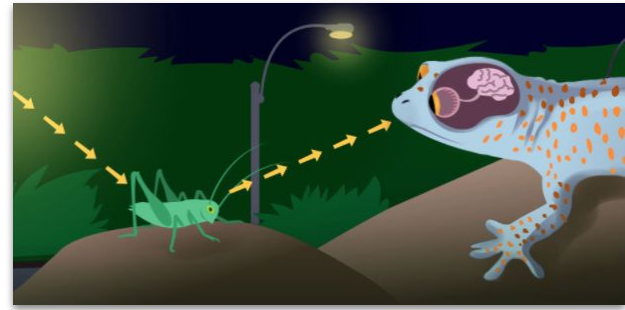
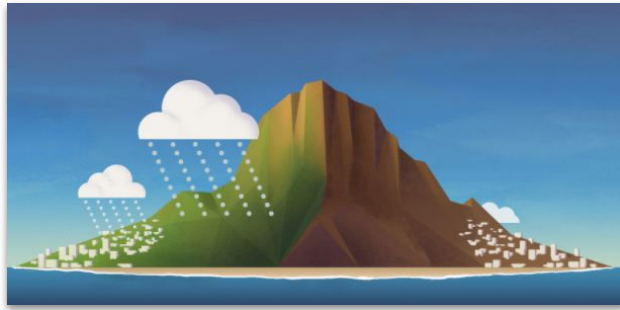
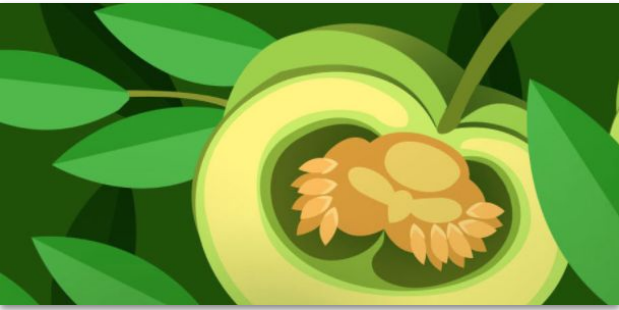
- Suggestions
 - Prep your charts
 - Read your unit's key documents
 - Familiarize yourself with the digital tools and sims
 - Familiarize yourself with the hands on activities
 - Preread the student texts
 - Download all the classroom slides for your unit and put in chapter folders
 - Review the differentiation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

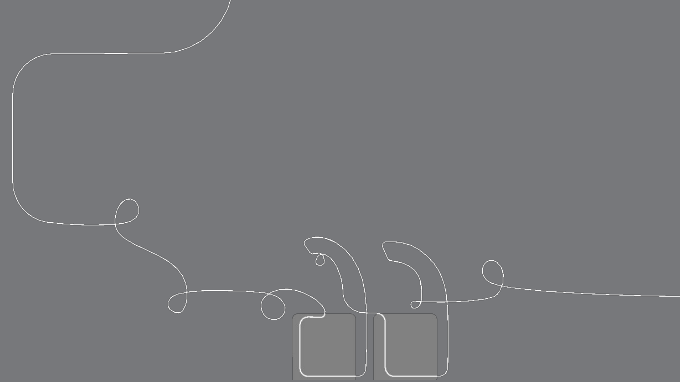
By the end of the day, you will:

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- ✓ 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!

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.



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Amplify Chat



Please provide feedback!

Type:

Strengthen

Session title:

Unit one deep dive

Professional Learning Specialist name:

Insert name

(insert email, if you would like)