Amplify Science

Unit 4: Ecosystem Restorati

(with a focus on Science & Engineering Practices)

Grade 5, Part 1

School/District Name: LAUSD
Date:
Presented by:

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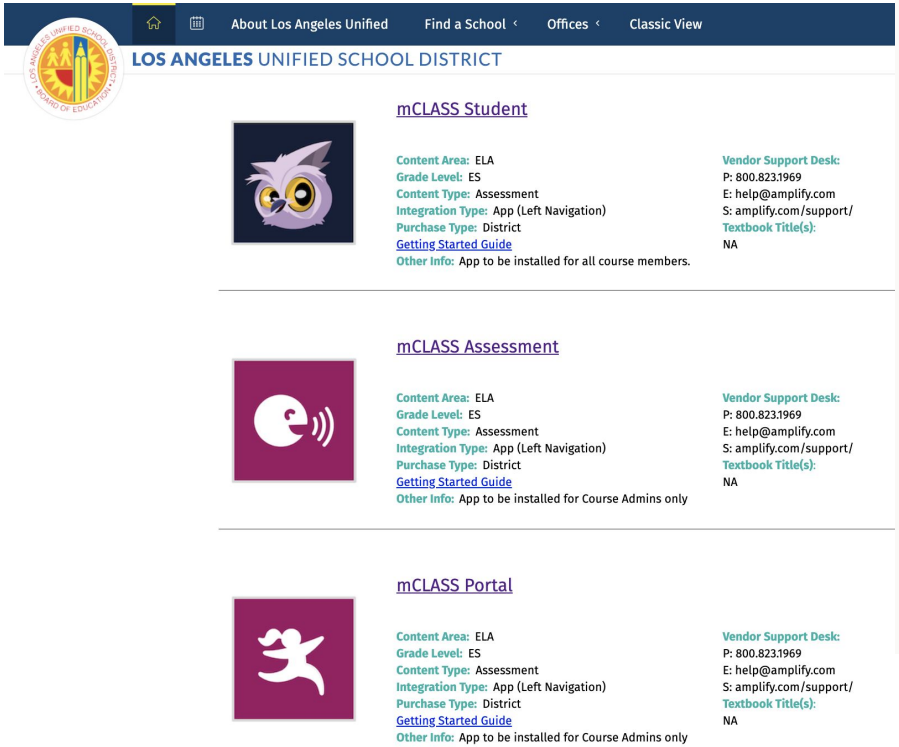
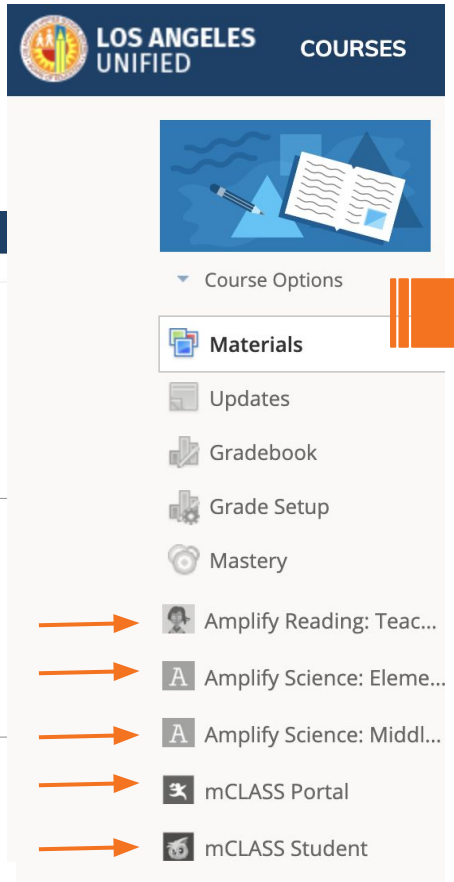
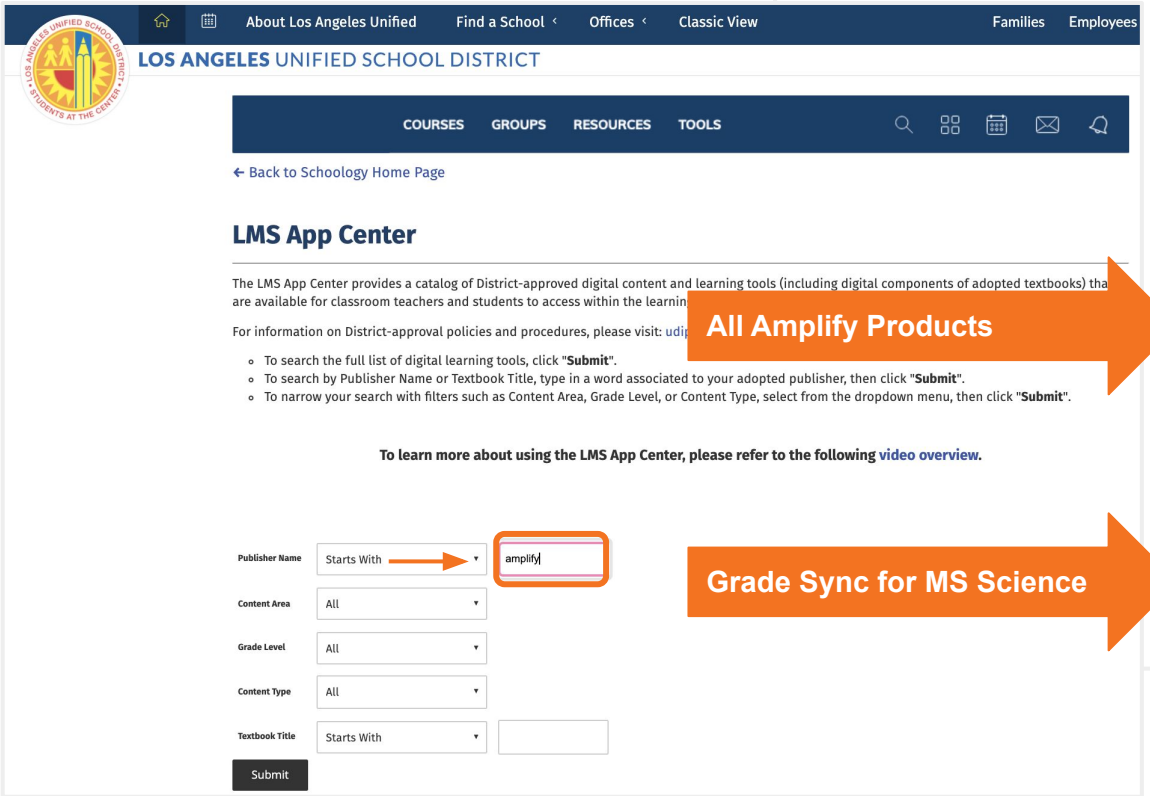
PLPG CERTIFIED PROVIDER

Last year's Amplify apps.



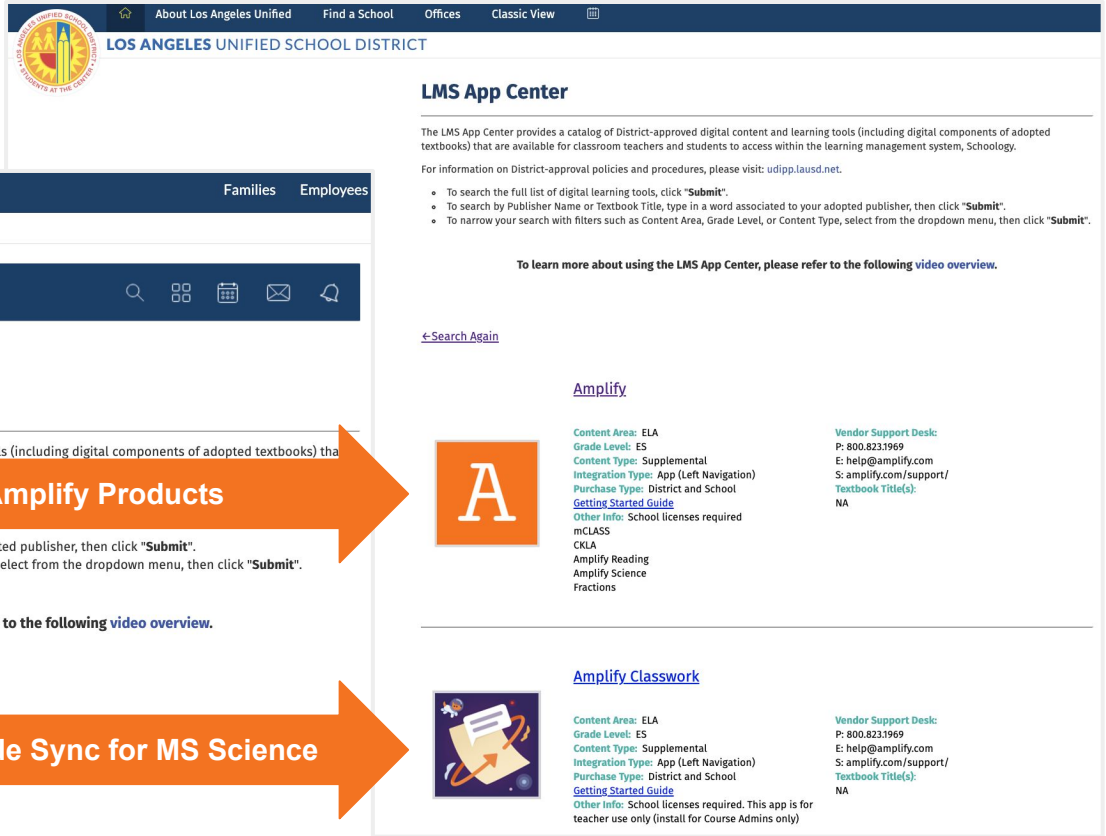


This year's app(s).



All Amplify Products

Grade Sync for MS Science



my.amplify.com

Amplify. MY ACCOUNT ADMIN REPORTS LAUNCH PROGRAMS TERIN NGO

mCLASS Educators: To view or make changes to your account go to mclass.amplify.com.

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Classes

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Reading 6-8

Reading K-5

Science

Vocabulary

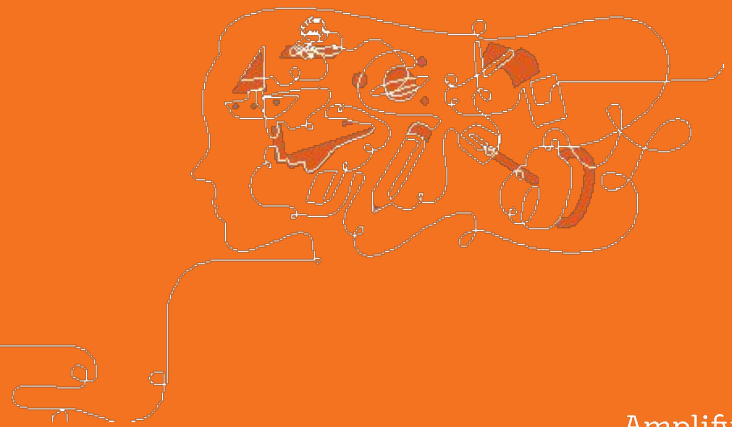
Amplify. on Schoology

2021-2022

Schoology

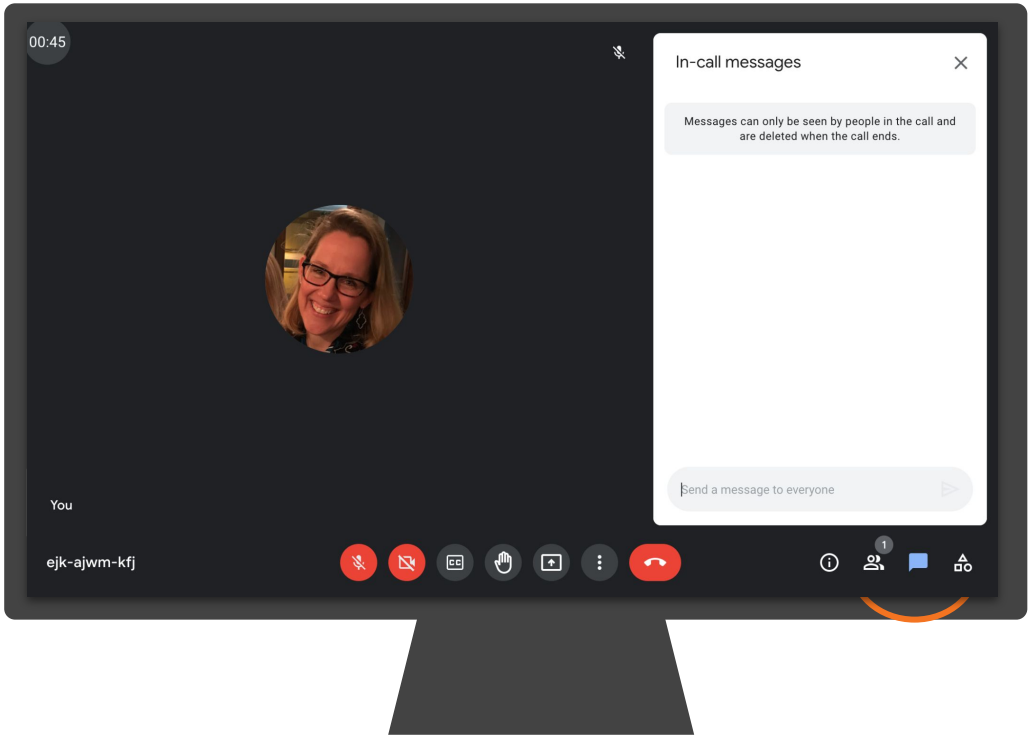
- To join Amplify ES Group: W4PK-W466-63F5B

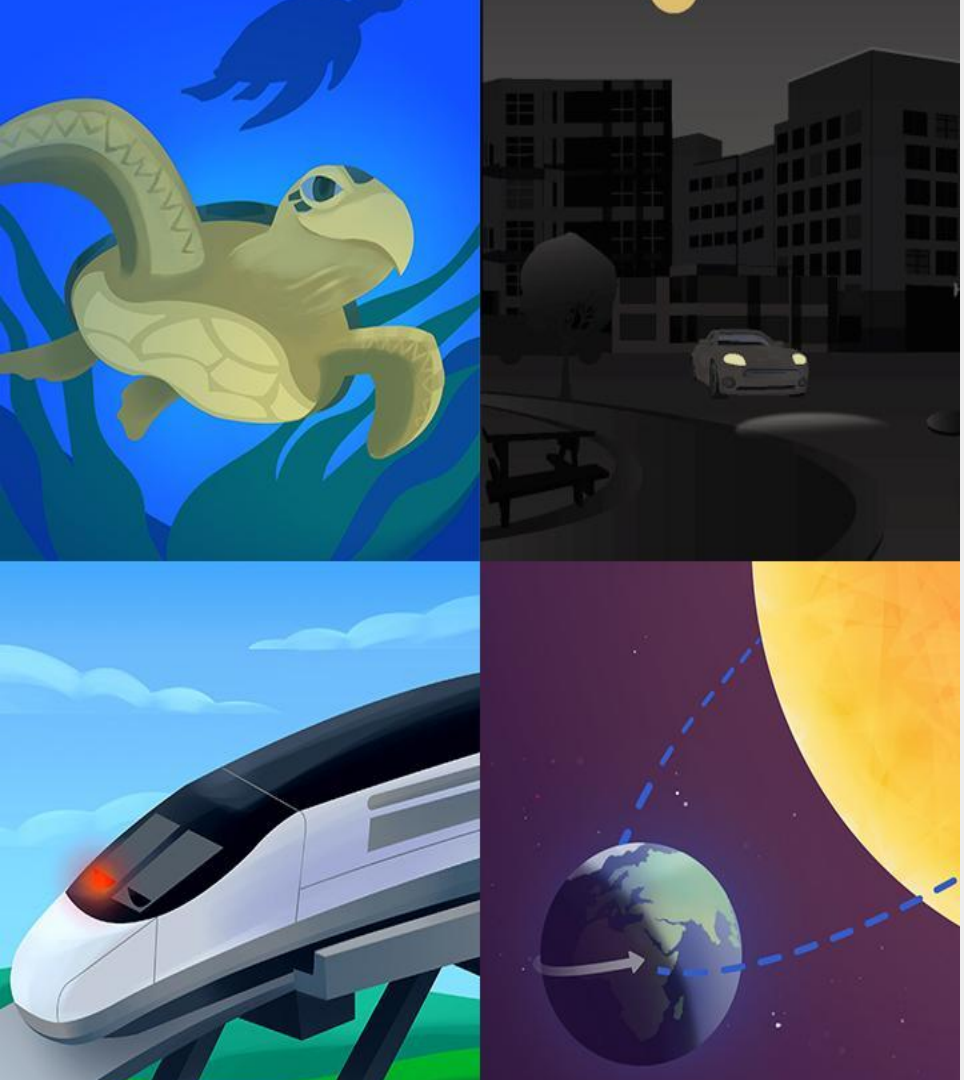
Part 1



Ice Breaker!

- **Question:** In the chat, share one or two of the Science and Engineering Practices in NGSS.





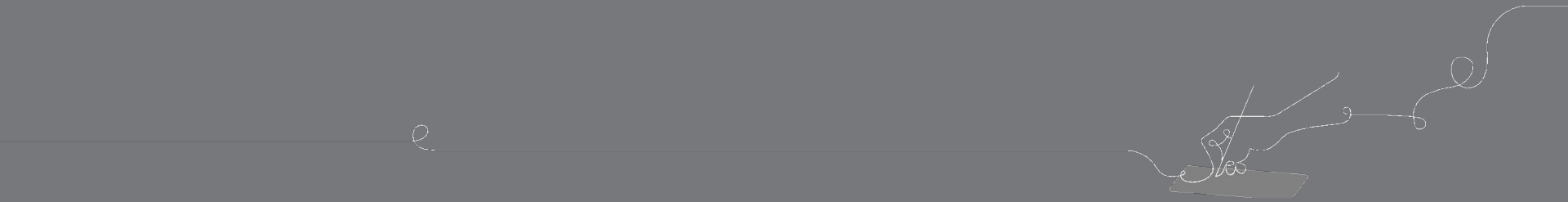
Plan for the day: Part 1

- Framing and Review
- Introducing the Unit
- Unit Internalization
- Identifying the Science and Engineering Practices
- Closing

Overarching goals

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

- ❑ Internalize the unit
- ❑ Identify the Science and Engineering Practices within the unit

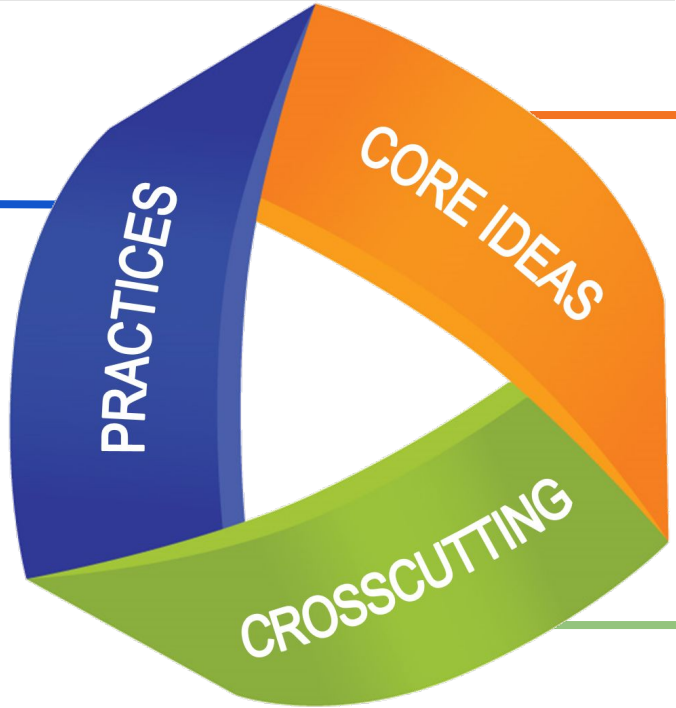


Next Generation Science Standards

Designed to help students build a cohesive understanding of science

What scientists do

Science and Engineering Practices



What scientists want to know

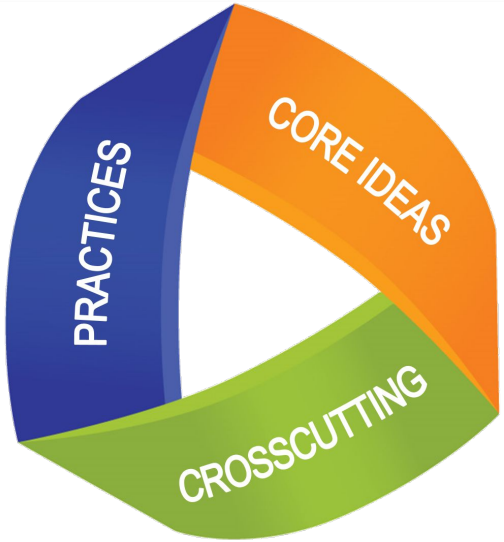
Disciplinary Core Ideas

How scientists think

Crosscutting Concepts

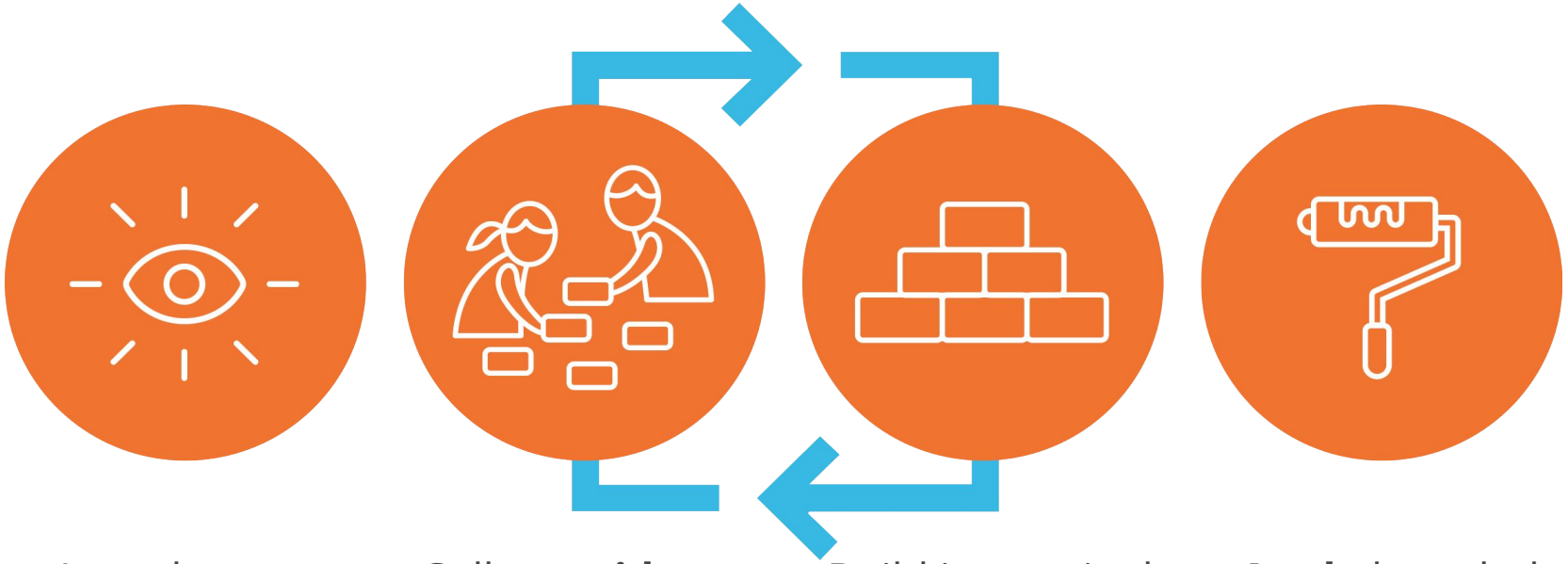
Next Generation Science Standards

Science and Engineering Practices



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)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Amplify Science Approach

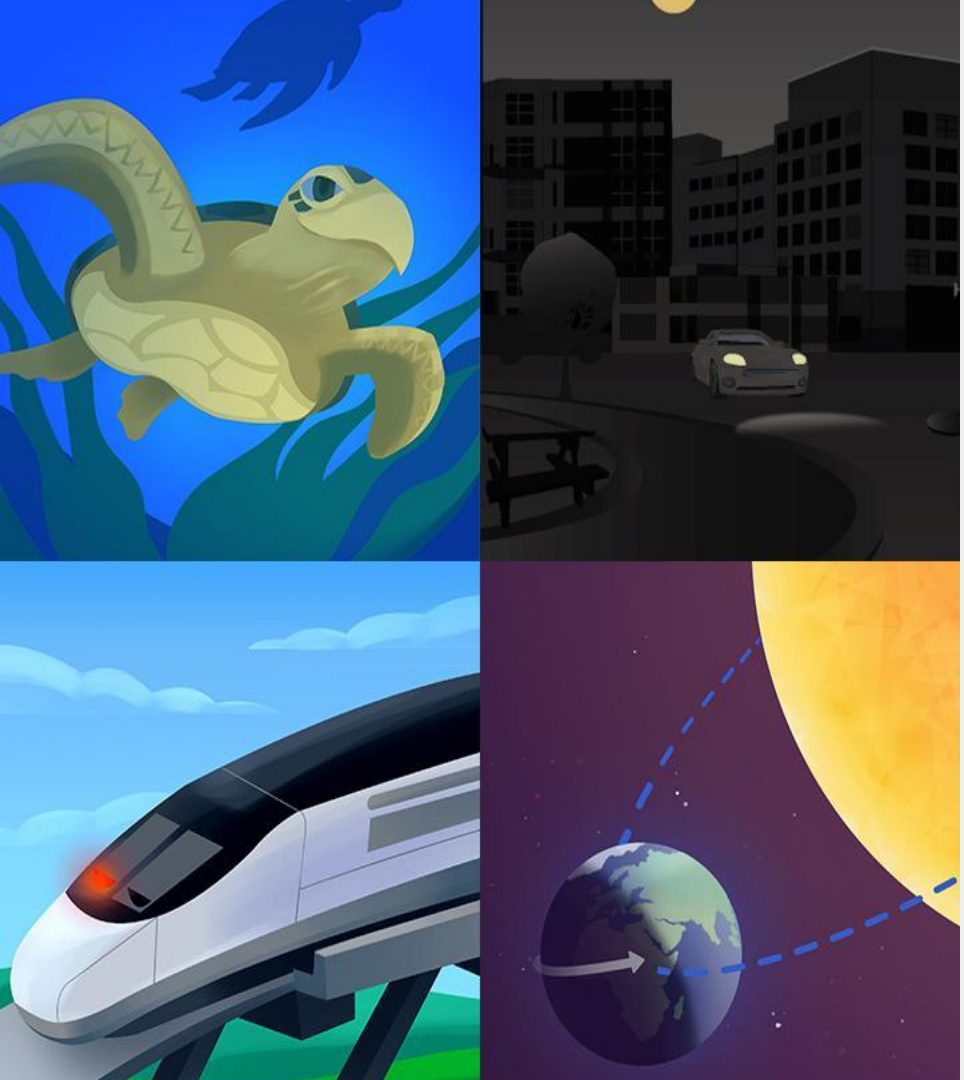


Introduce a **phenomenon** and a related problem

Collect **evidence** from multiple sources

Build increasingly complex **explanations**

Apply knowledge to solve a different problem



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Grade 5 | Ecosystem Restoration

Lesson 1.2: Introducing Ecosystems

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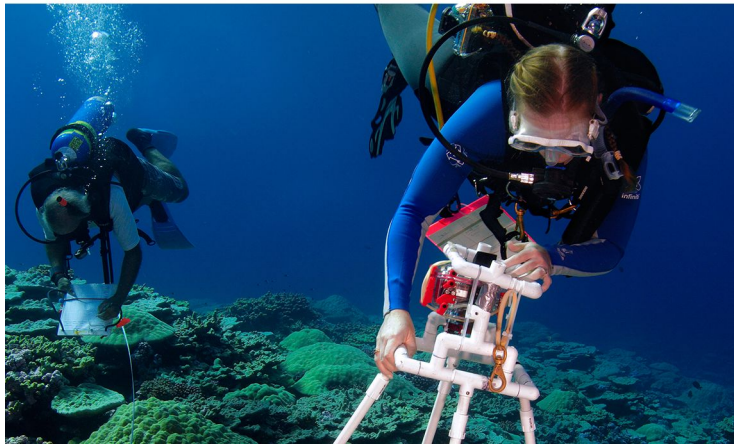
15 MIN

Activity 1

Introducing the Rain Forest Problem

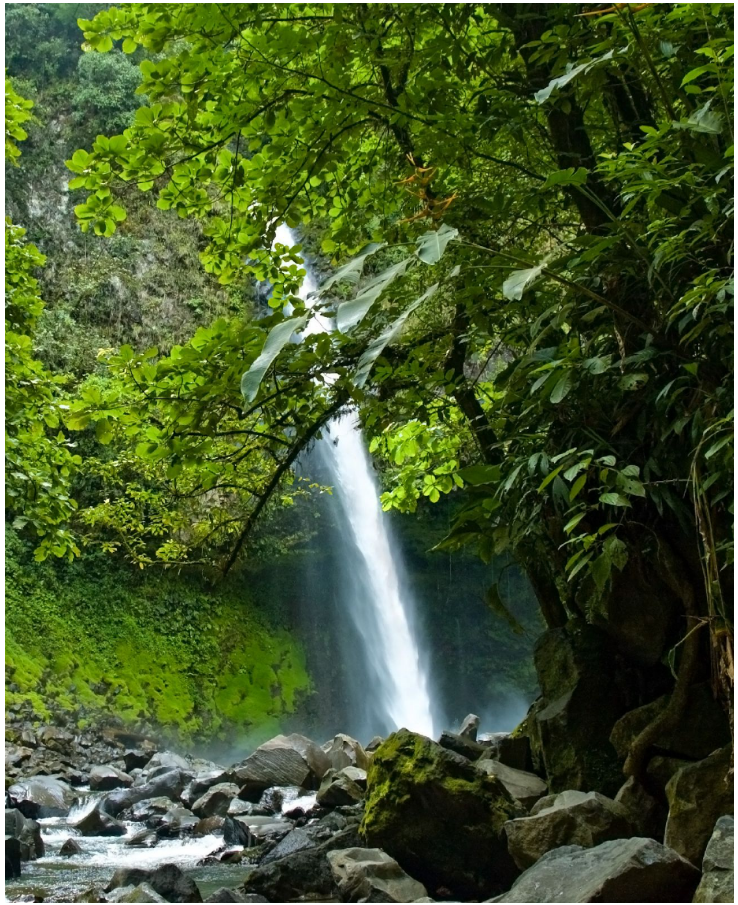


Remember, in this unit, we are taking on the role of **ecologists**—scientists who study ecosystems.

Ecologists observe ecosystems to draw conclusions about them.

Today, we will learn about a problem with the ecosystem in **Costa Rica.**

We can see from this map that Costa Rica is a country in Central America.



This is a photograph of an ecosystem in Costa Rica.

What kind of **ecosystem** do you think this is?

What **organisms** (living things) might live here?

Costa Rican Rain Forest Ecosystem

jaguar

three-toed sloth

cecropia tree

soil

millipede

We will take on the role of ecologists working for **Natural Resources Rescue,** a group that works to protect and save fragile ecosystems around the world.

Natural Resources Rescue
PROTECTING EARTH'S FRAGILE ECOSYSTEMS

Costa Rican Rain Forest Restoration: Project Report #1

10 years ago

Today

We have a Project Report from Natural Resources Rescue about a **problem** in part of the Costa Rican rain forest ecosystem. For the next few weeks, we'll think about how to solve this problem.

10 years ago

The **project area** used to be a healthy rain forest.

Then, cattle ranchers burned down the rain forest so they could use the land as grazing area for their cows.

Today

This photo shows the same **project area** today. A few years ago, the cattle ranchers left and took the cows with them. They planted trees so the area would become a rain forest again.

Natural Resources Rescue

PROTECTING EARTH'S FRAGILE ECOSYSTEMS

Natural Resources Rescue worked with volunteers to **replant** the project area. They brought in young cecropia trees and other important rain forest plants and planted them.

Next, we will look at some information comparing the project area to a **healthy rain forest area** nearby.

The area nearby was not burned for cattle ranching and remains in its original state.

	Organism count in project area	Organism count in healthy rain forest
Jaguars	1	4
Three-toed sloths	16	28
Cecropia trees	188	596
Land area	100 sq km (38.6 sq miles)	100 sq km (38.6 sq miles)

This table compares the numbers of several organisms in the two areas.

What do you notice about the information in this table?

	Average weight of adult animals in project area	Average weight of adult animals in healthy rain forest
Jaguars	168 kg (370.4 lbs)	205 kg (452 lbs)
Three-toed sloths	4.42 kg (9.75 lbs)	4.76 kg (10.5 lbs)

This table shows the average weights of jaguars and sloths in the two areas.

What do you notice about the information in this table?

Natural Resources Rescue

PROTECTING EARTH'S FRAGILE ECOSYSTEMS

Project goal: Restoration of the project area

Restore this section of the Costa Rican rain forest ecosystem and improve its health.

Your tasks:

1. **Investigate** why the animals aren't growing and thriving in the project area.
2. **Make a plan** to improve the health of the animals in the ecosystem.

Think back to the data tables we looked at before.

What you think it means when the Natural Resources Rescue report says “the animals aren’t growing and thriving in the project area”?

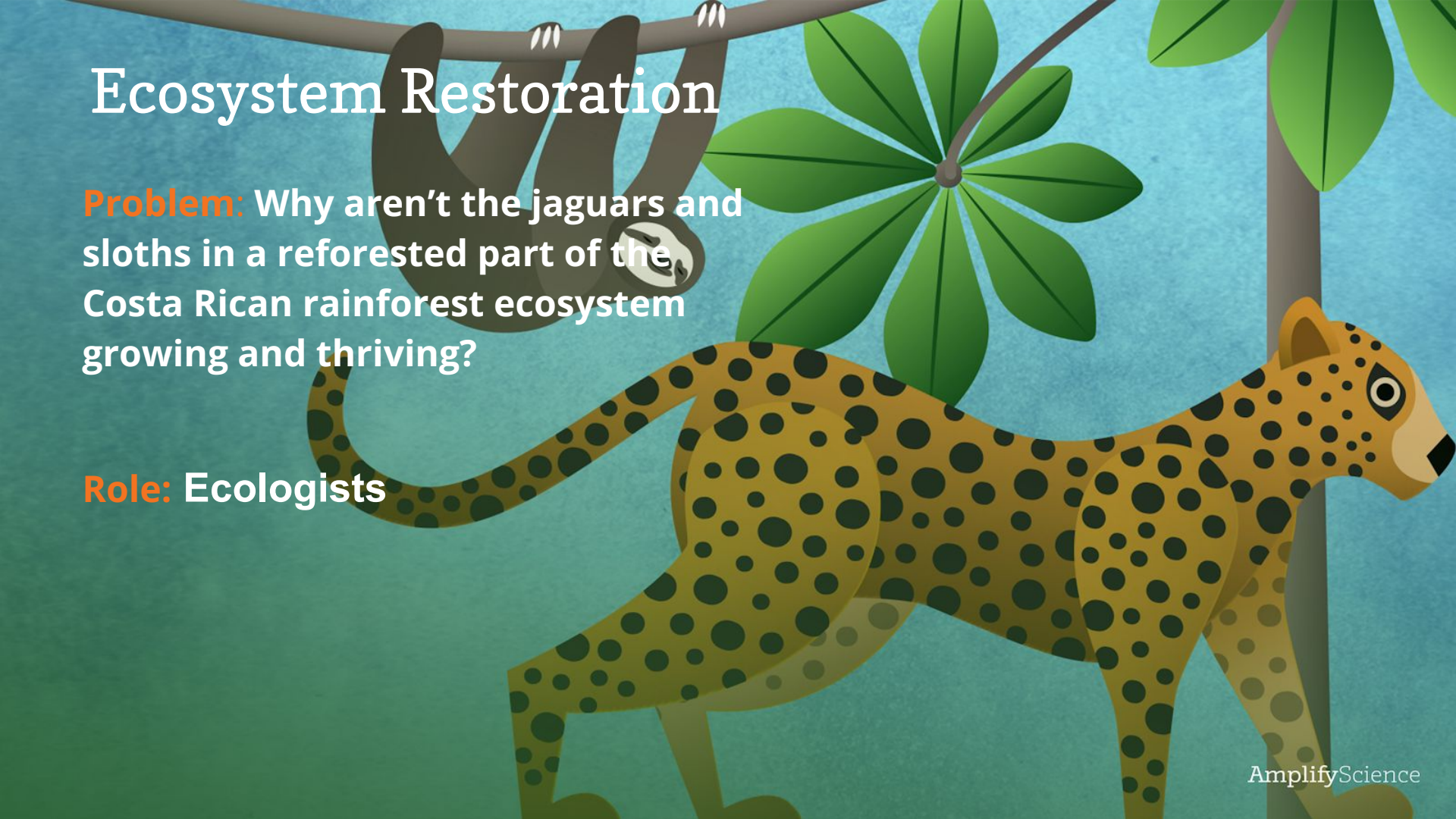
Chapter 1 Question

Why aren’t the jaguars and sloths growing and thriving?

Ecosystem Restoration

Problem: Why aren't the jaguars and sloths in a reforested part of the Costa Rican rainforest ecosystem growing and thriving?

Role: Ecologists



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Ecosystem Restoration

Coherent Storylines

Chapter 1: Why aren't the jaguars and sloths growing and thriving?

8 Lessons

Chapter 2: Why aren't the cecropia trees growing and thriving?

7 Lessons

Chapter 3: Why aren't the cecropia trees growing and thriving in the soil?

7 Lessons

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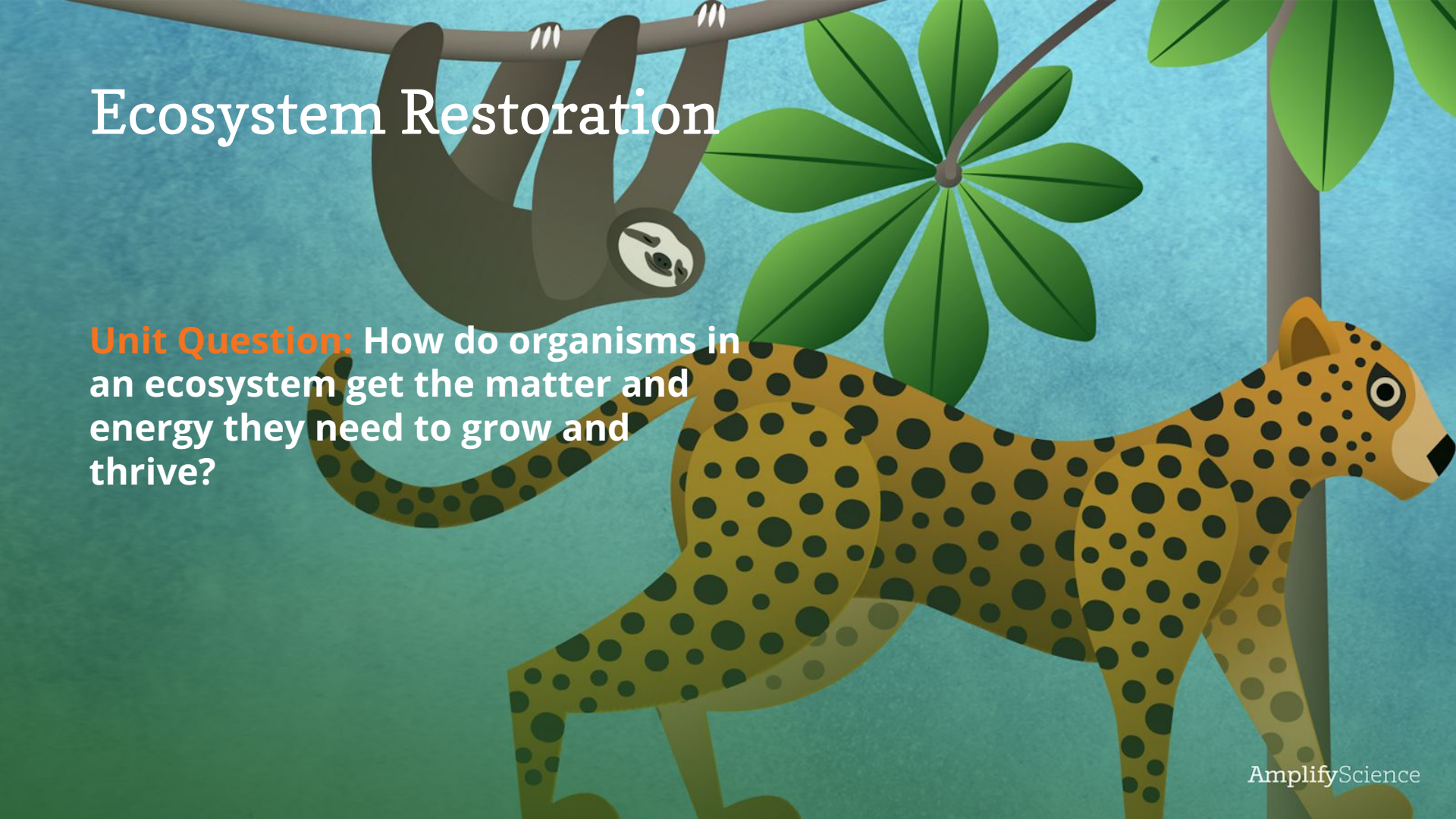
Ecosystem Restoration



Unit Question: How do organisms in an ecosystem get the matter and energy they need to grow and thrive?

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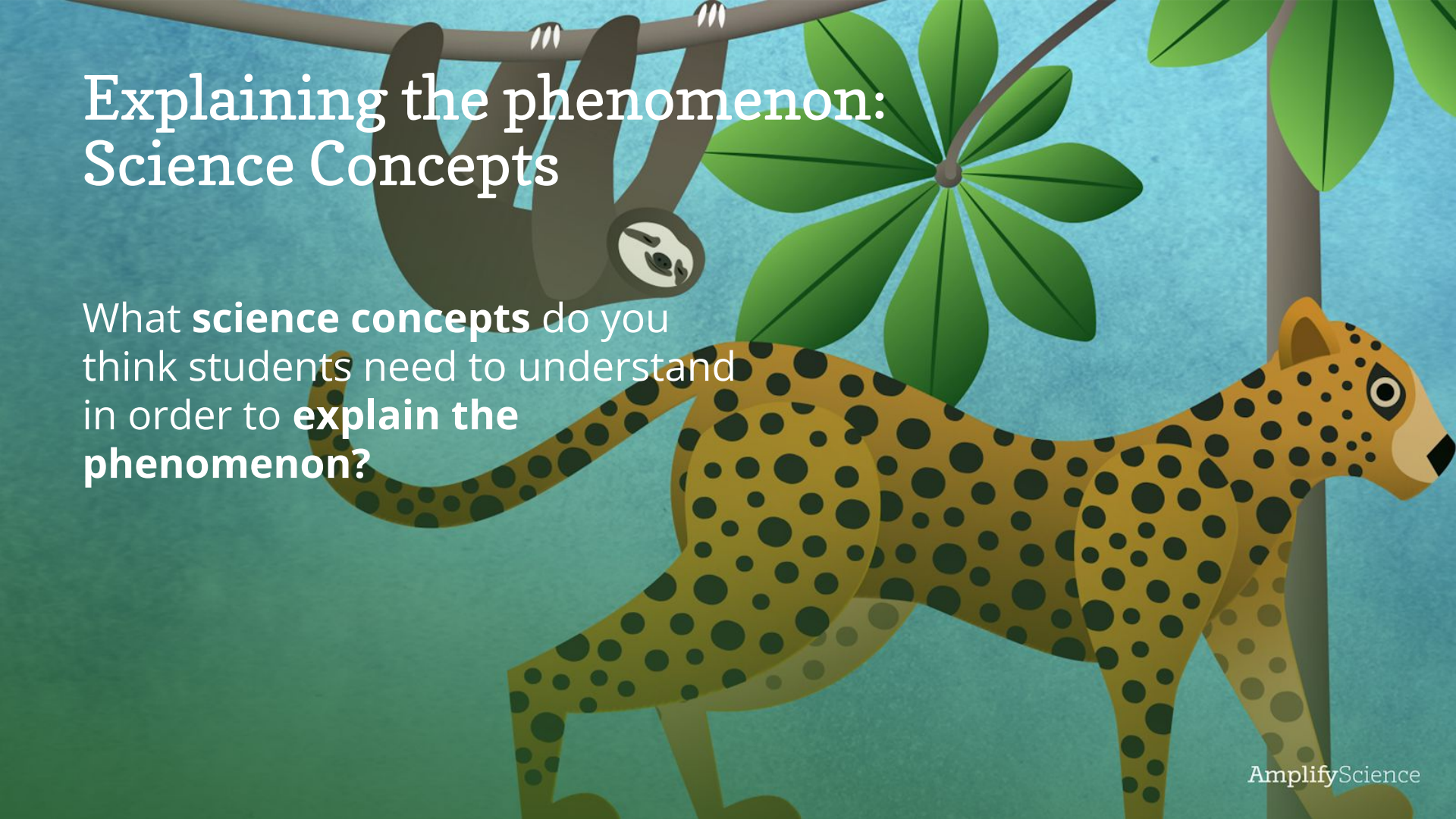
Explaining the phenomenon: Science Concepts

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



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Ecosystem Restoration, Progress Build

Assumed prior knowledge (preconceptions): Students are expected to understand that some animals eat plants for food, and some eat other animals for food. Students are also likely to understand that plants need water and energy from the sun.

Level 1

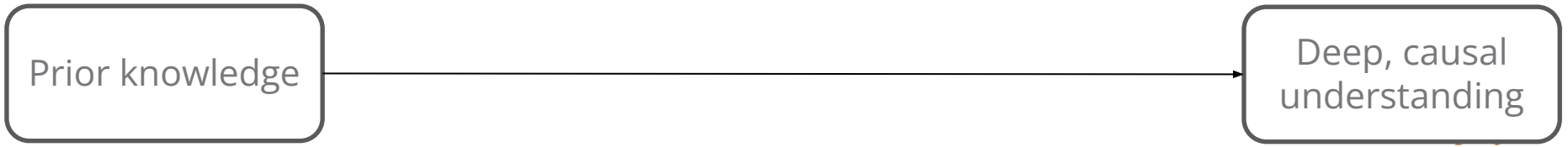
The food matter that animals need to grow and use for energy can always be traced back to plants.

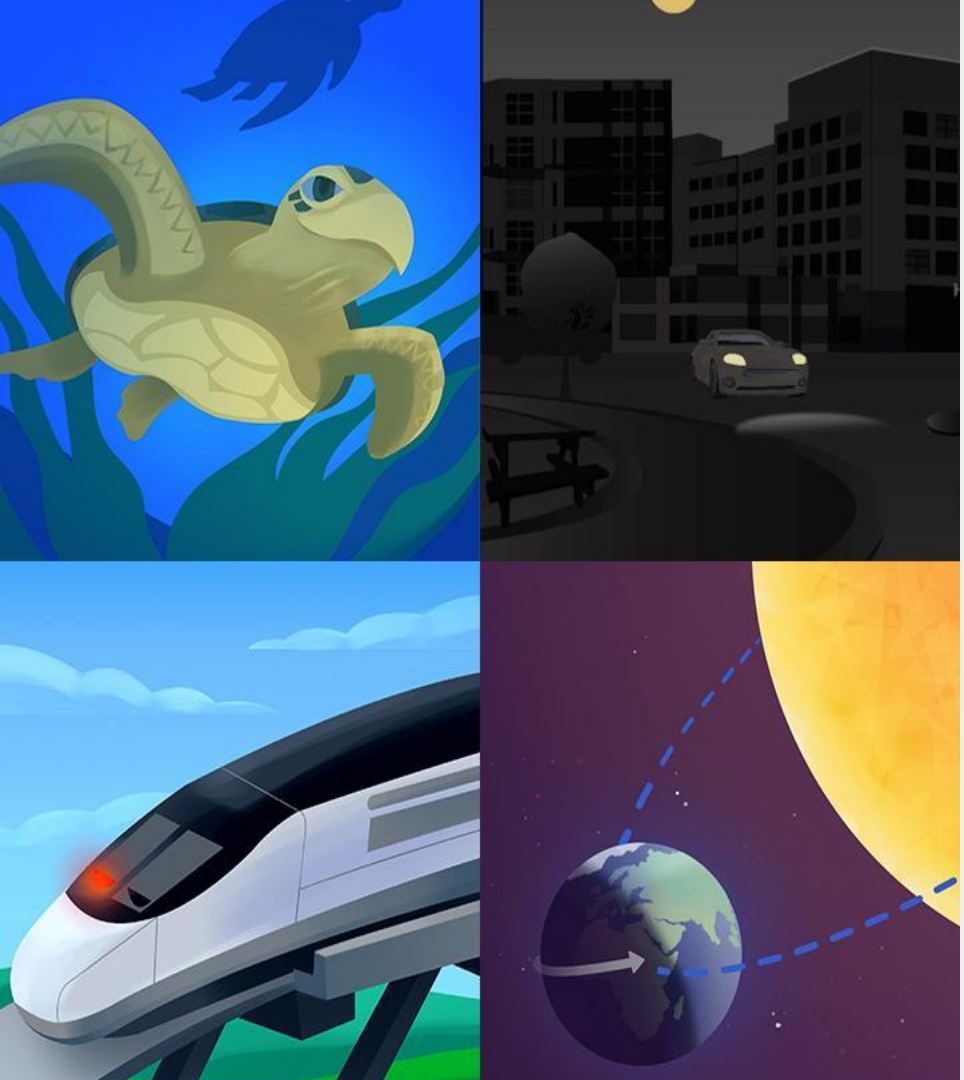
Level 2

Energy from the sun is brought into an ecosystem when plants make food by using water molecules, carbon dioxide from the air, and energy from the sun.

Level 3

Decomposers consume dead matter and release nutrients that plants use to help them make food molecules.





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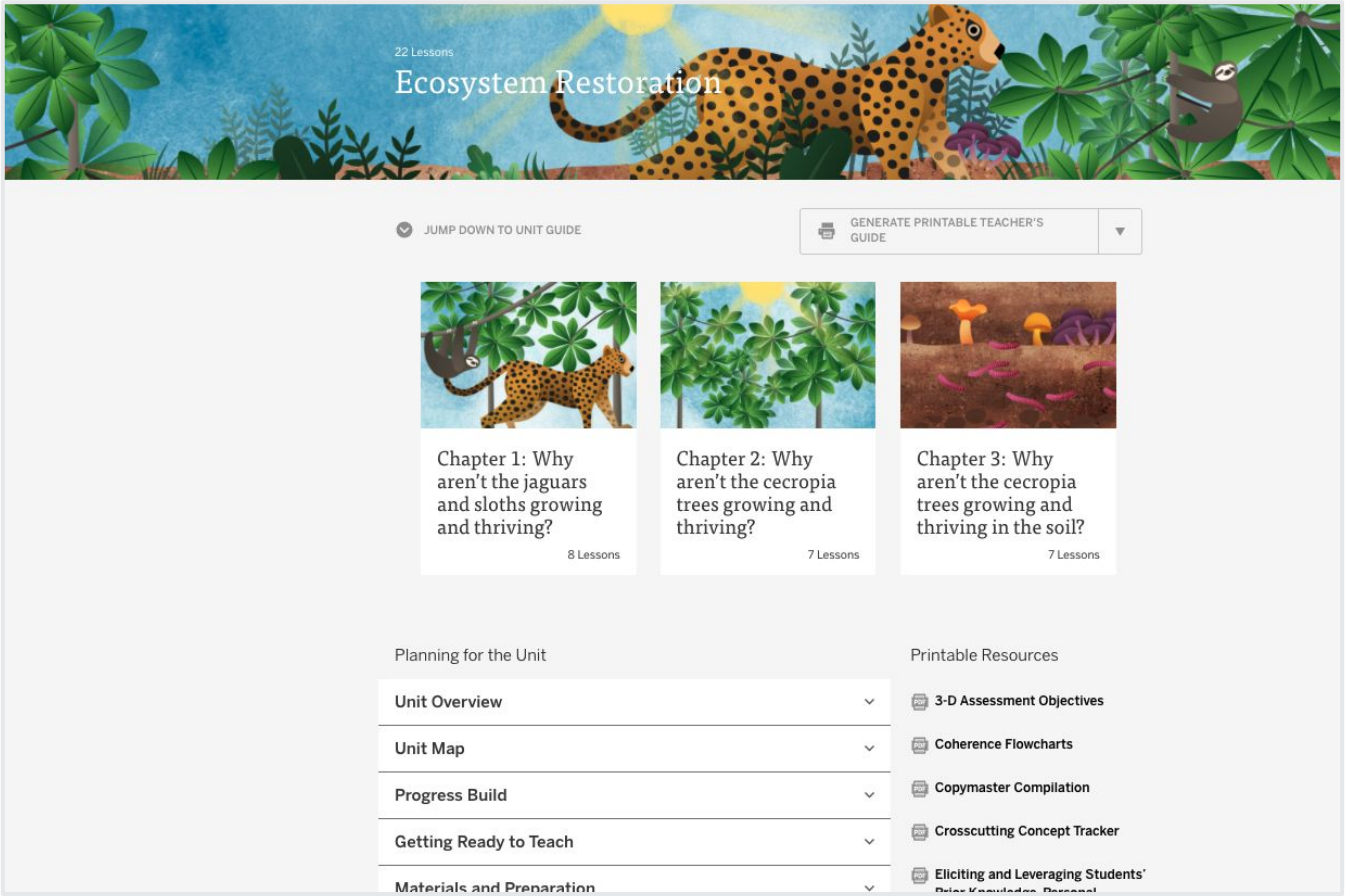
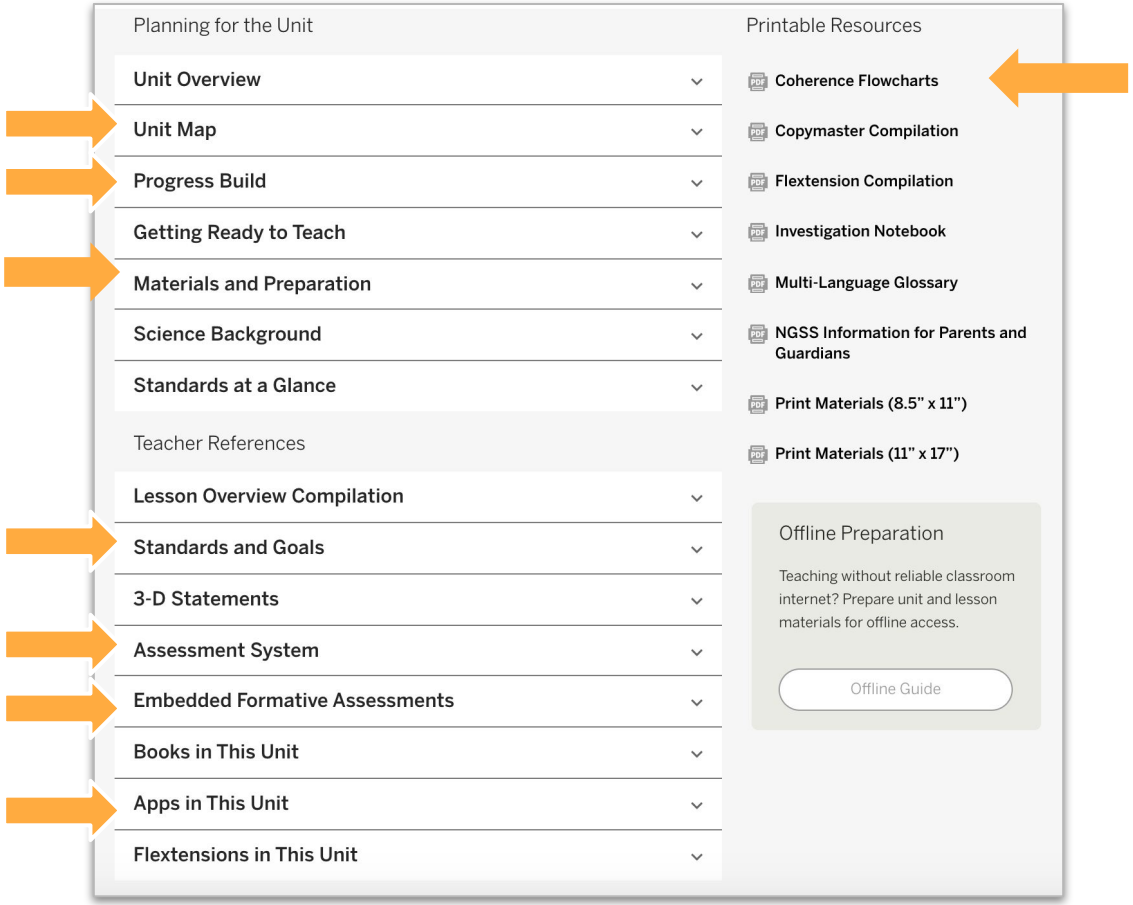
Navigate to the Unit Page



Key Unit Guide Documents for Planning



Core Unit Planning & Internalization

Unit Title: 1

Overview

[Resources: Unit Overview, Teacher's Guide, Coherence Flowchart, Unit Map, 3-D Statements]

What is the phenomenon/real-world problem students are investigating in your unit? 2

Student Role: 3

Unit Question: 4

Relationship between the Unit Phenomenon and Unit Question: 5

By the end of the unit, students figure out... 6

How do students engage with three-dimensional learning to figure out the phenomenon/real-world problem in your unit? 7

1

Unit Guide resources:
- Unit Overview
- Unit Map
- Coherence Flowchart

Unit Guide resources:
- Lesson Overview Compilation
- Unit Overview

Unit Guide resources:
- Unit Map

Unit Guide resources:
- 3D Statements at the Unit Level

Core Unit Planning & Internalization

Unit Title:	Ecosystem Restoration

Overview

[Resources: Unit Overview, Teacher's Guide, Coherence Flowchart, Unit Map, 3-D Statements]

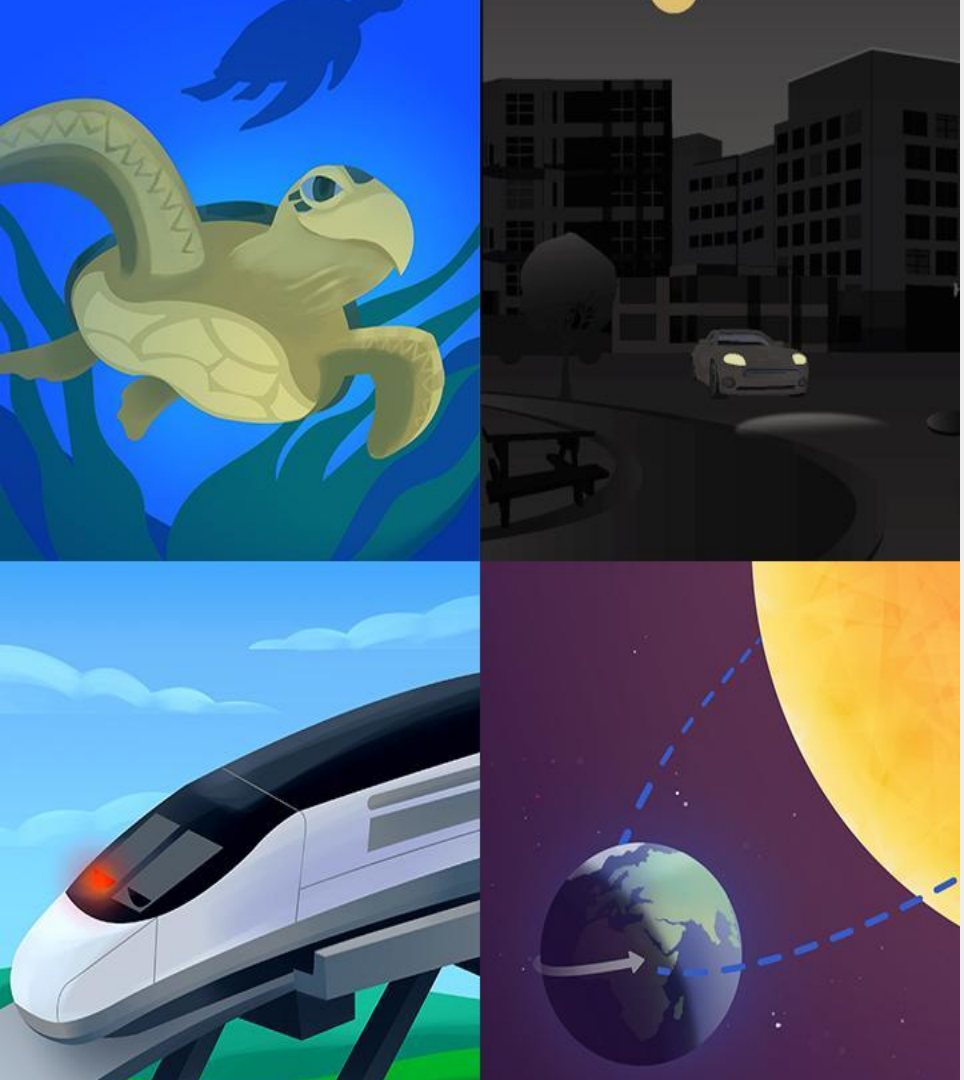
What is the phenomenon/real-world problem students are investigating in your unit?	Student Role:
Why aren't the jaguars and sloths in a reforested part of the Costa Rican rainforest ecosystem growing and thriving?	Ecologist
Unit Question:	**Relationship between the Unit Phenomenon and Unit Question:**
How do organisms in an ecosystem get the matter and energy they need to grow and thrive?	Students explore what it means to grow and how living things get the matter and energy they need to grow.

By the end of the unit, students figure out...

Because there are not enough decomposers in the soil, there are not enough nutrients. This is the reason the cecropia trees are not growing and thriving, which affects the health of the whole ecosystem.

How do students engage with three-dimensional learning to figure out the phenomenon/real-world problem in your unit?

Students use models to investigate why a reforested area of a Costa Rican rain forest is not thriving (energy and matter, systems and system models, cause and effect). Students use evidence to construct oral and written arguments about why the living things in this rain forest ecosystem are not growing and thriving (energy and matter, systems and system models, cause and effect).



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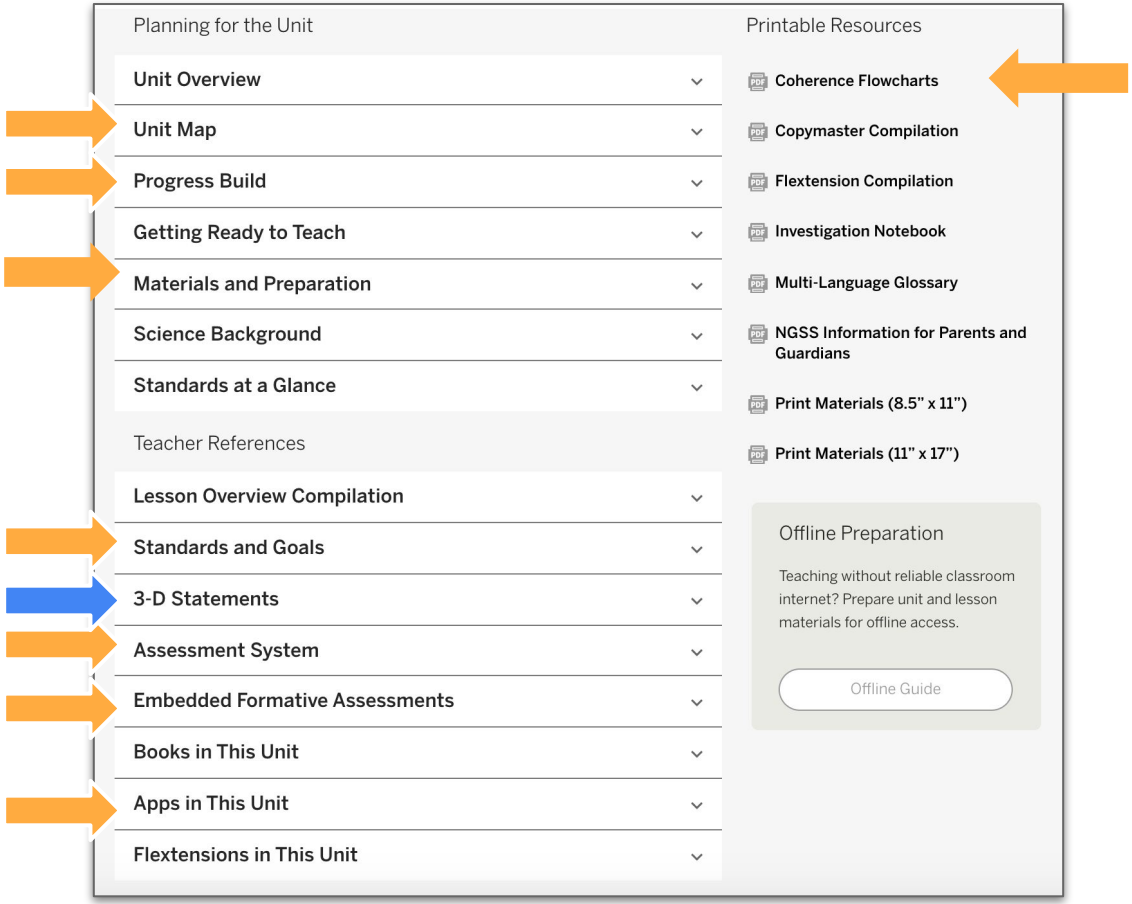
Key Documents for Planning Work Time



Ecosystem Restoration 3D Statements

Key

Practices | Disciplinary Core Ideas | Crosscutting Concepts

Unit Level

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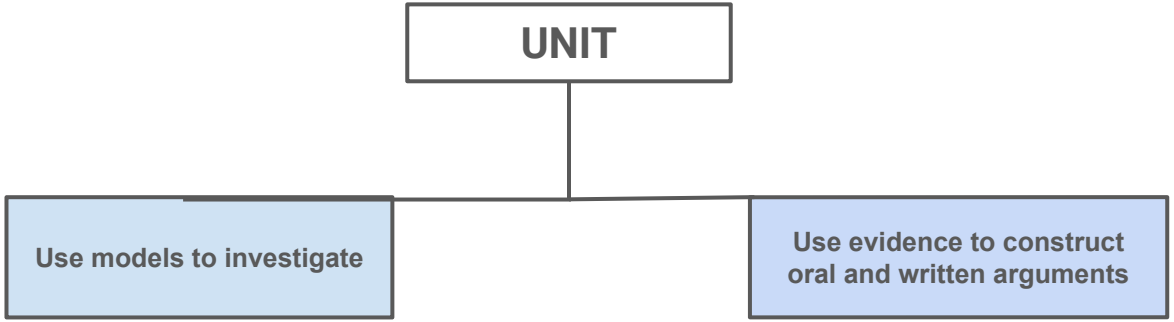
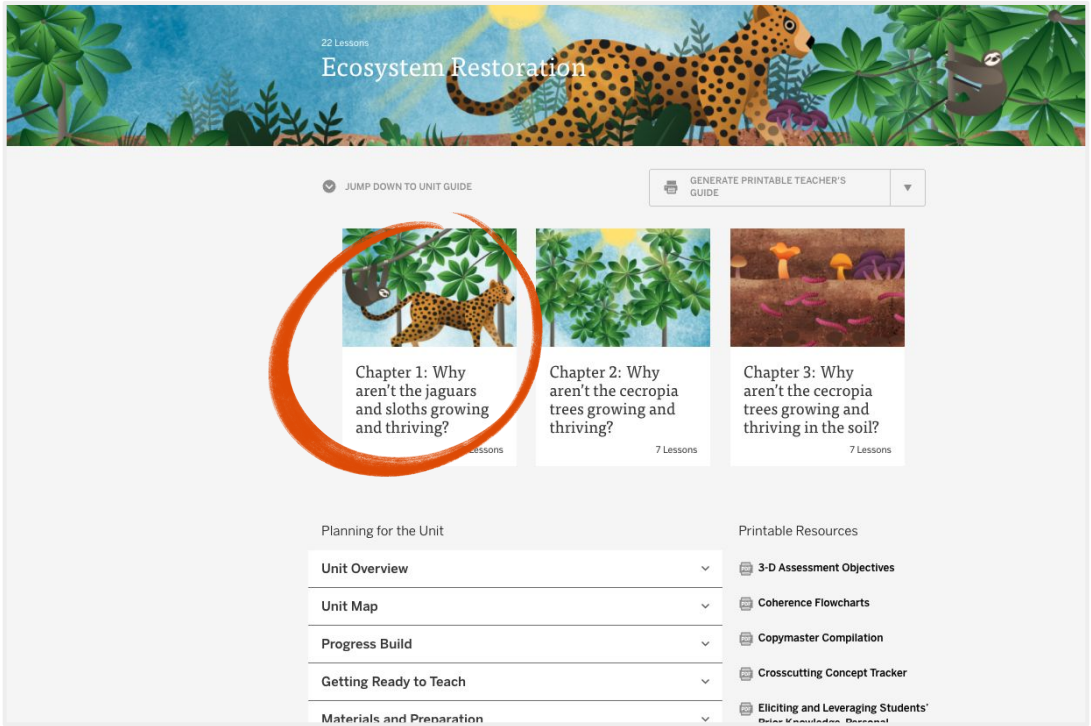
Ecosystem Restoration

Science & Engineering Practices



These are the two main categories of Science and Engineering Practices that the students will be engaged with in this unit.

Ecosystem Restoration



3D Statements

Key

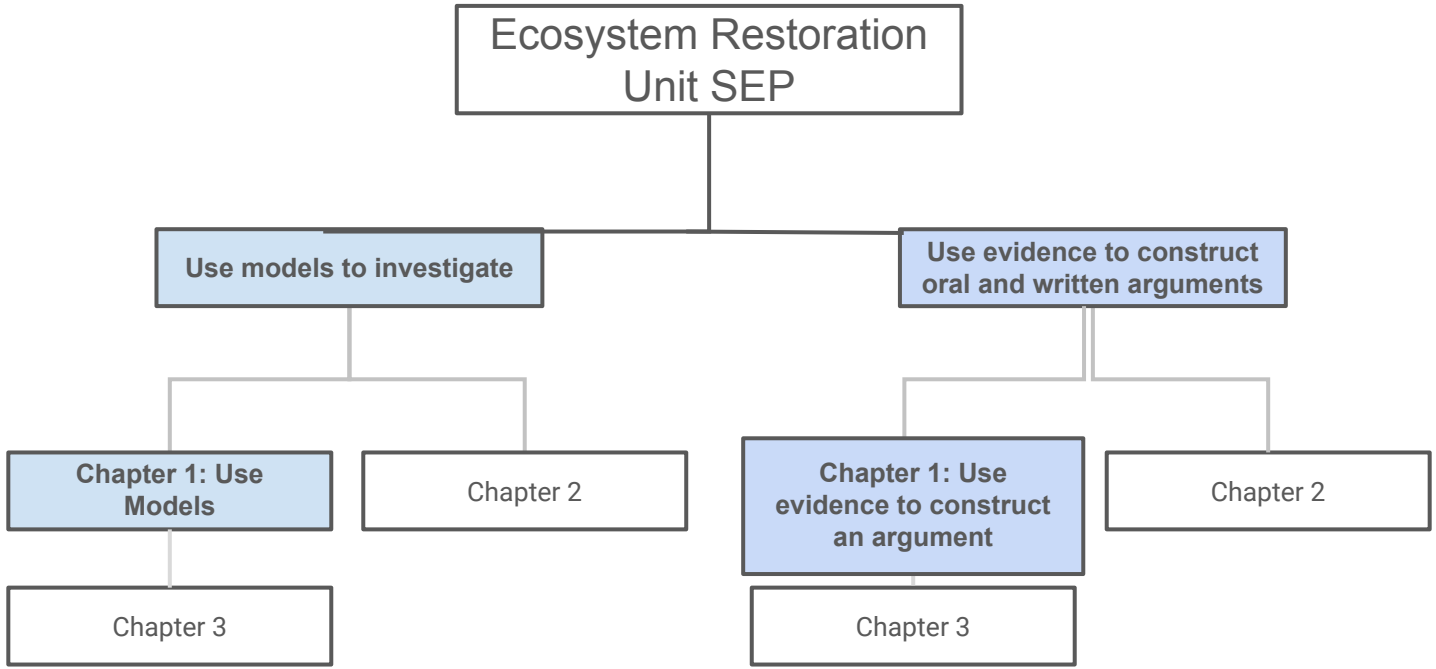
Practices | Disciplinary Core Ideas | Crosscutting Concepts

Chapter Level

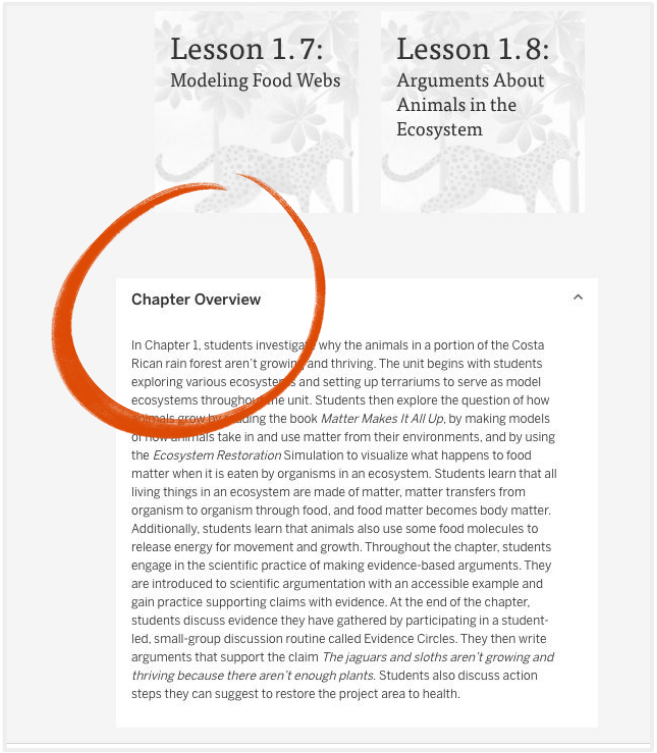
Chapter 1: Why aren't the jaguars and sloths growing and thriving?

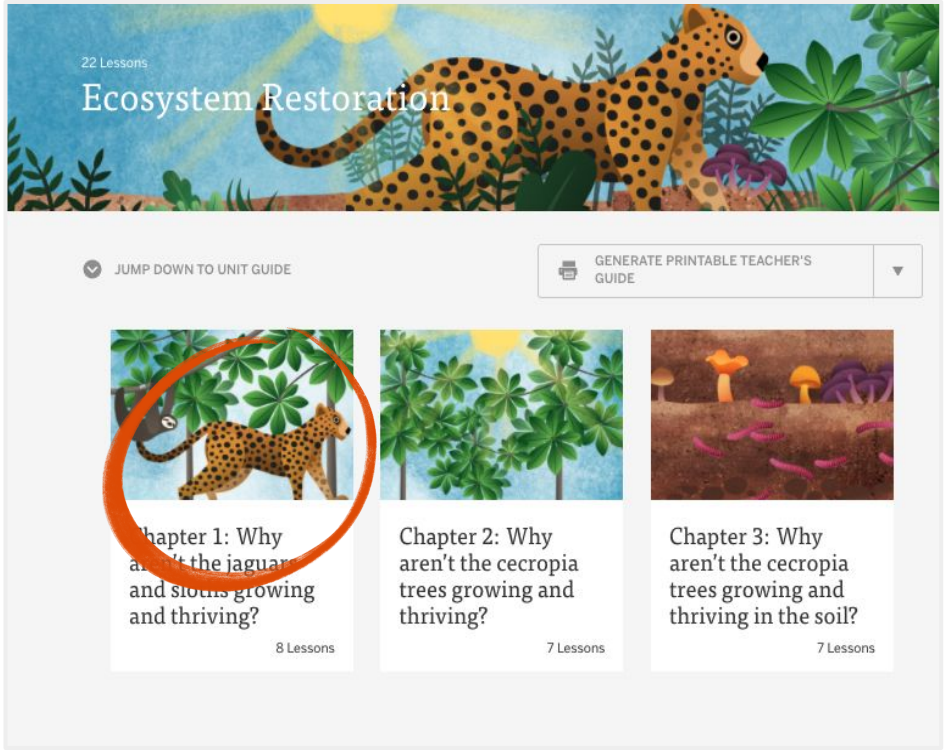
Students use models to investigate what animals need to grow and thrive (energy and matter). Students use evidence to construct an argument about why jaguars and sloths in an area of a rainforest ecosystem are not growing and thriving (energy and matter, systems and system models).

Science & Engineering Practices



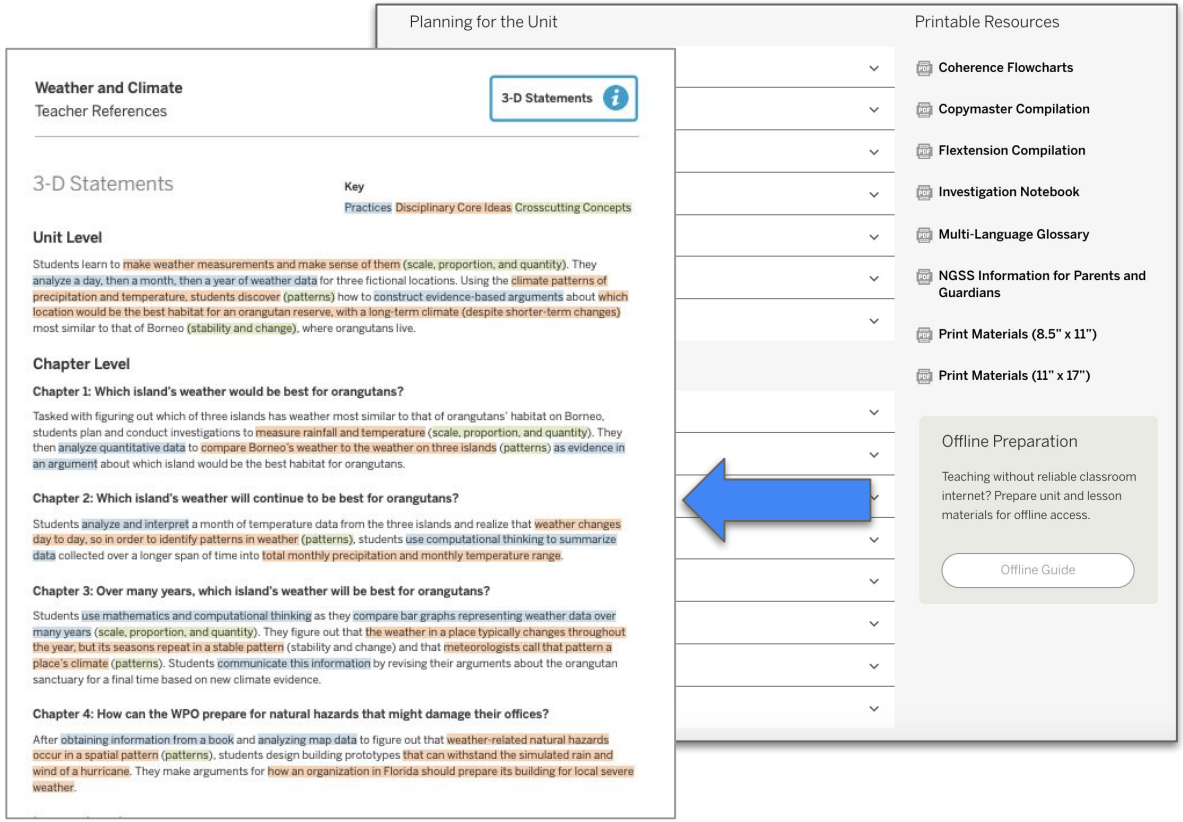
Ecosystem Restoration Chapter 1 Overview



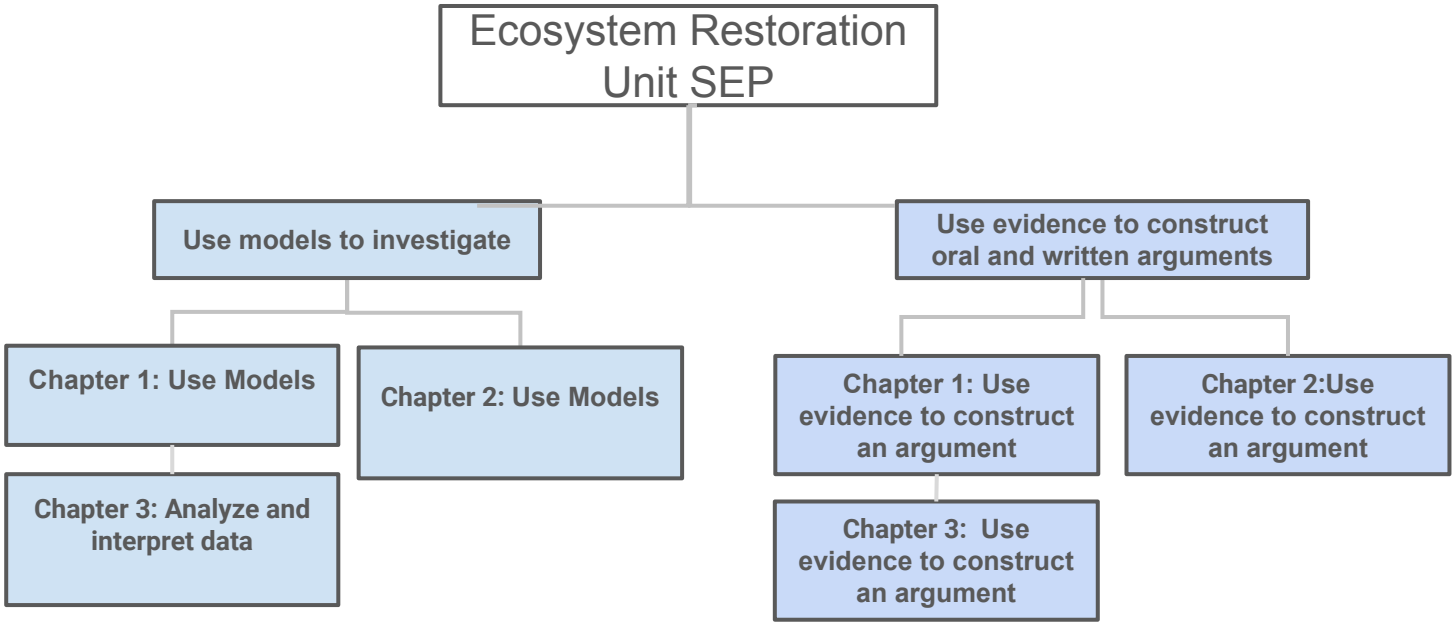


3D Statements Work time

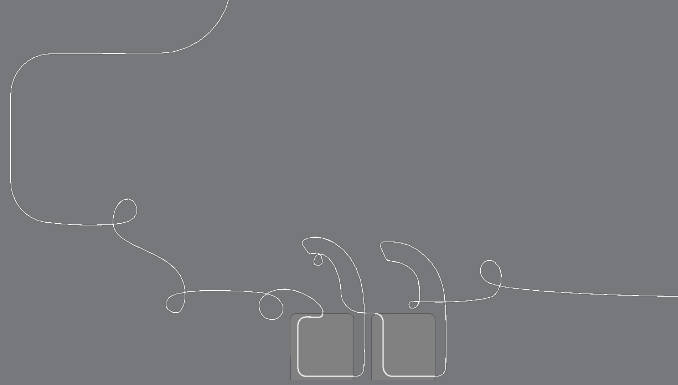
1. Go to the **3D Statement** on the **Unit Page.**
2. Look at the 3D Statement **for each chapter**
3. Identify the **Science and Engineering Practices** for each chapter.
4. **Categorize** them.



Let's Review Ecosystem Restoration

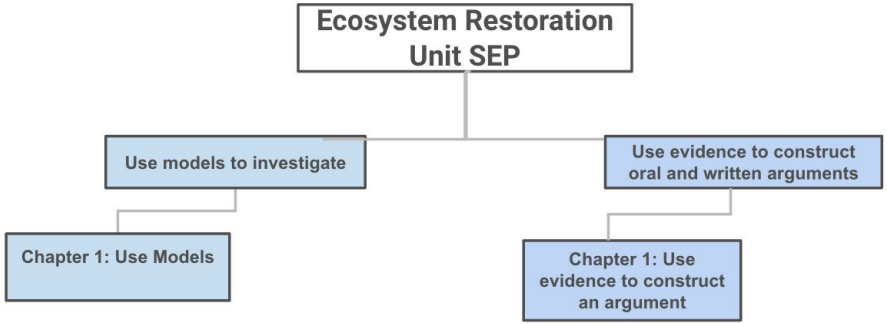


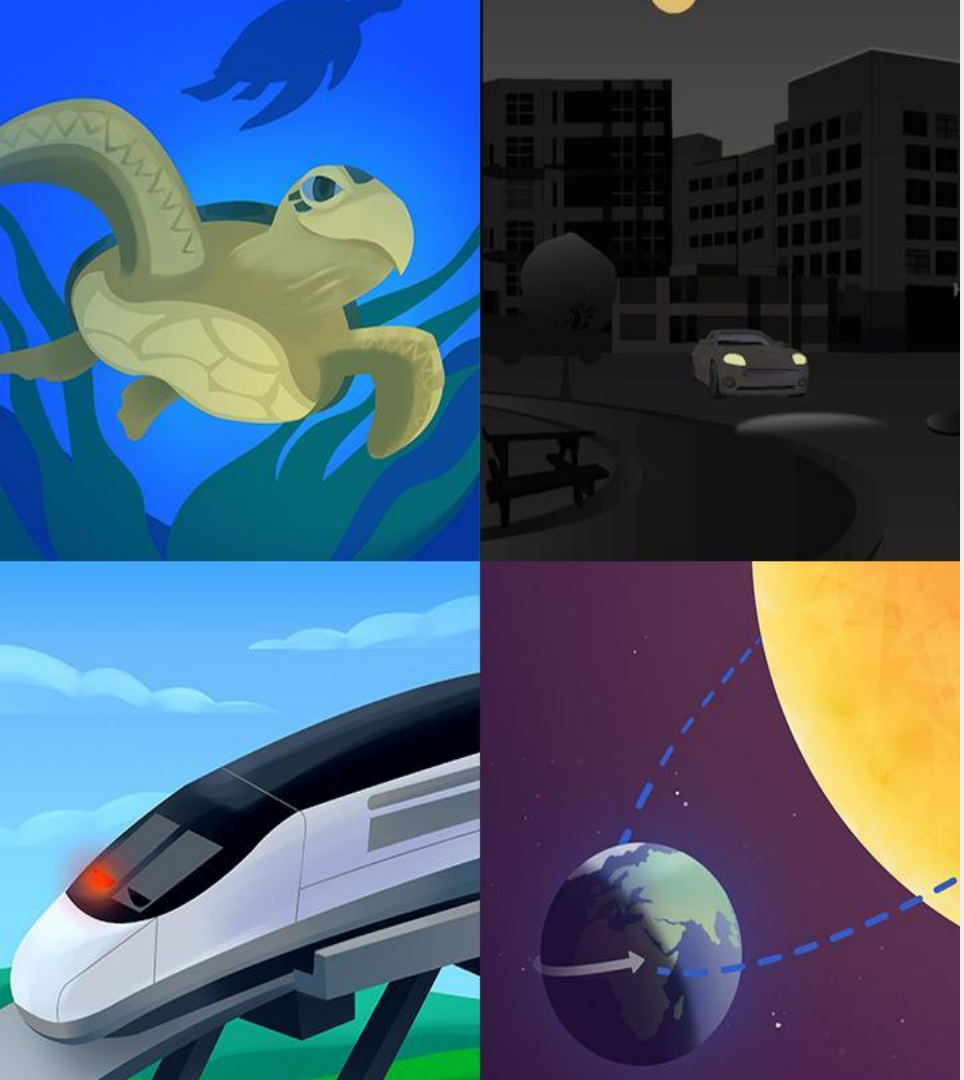
Questions?



Science & Engineering Practices

Building the practices incrementally, chapter by chapter.





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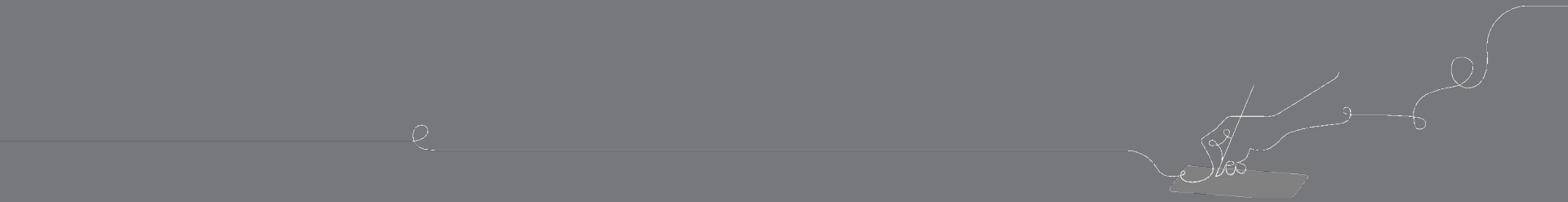


Additional resources

Welcome, caregivers!

—

We hope you enjoy learning more about Amplify Science and what students are learning in science this year.

Para acceder a este sitio en español haga clic aquí.

Amplify welcomes you and your learner to the Science program for the new school year. We are very excited to

TOP RATED BY EDREPORTS

Grades 6-8

[Caregivers]

Amplify.

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!

ify.

Additional resources and ongoing support

Customer Care

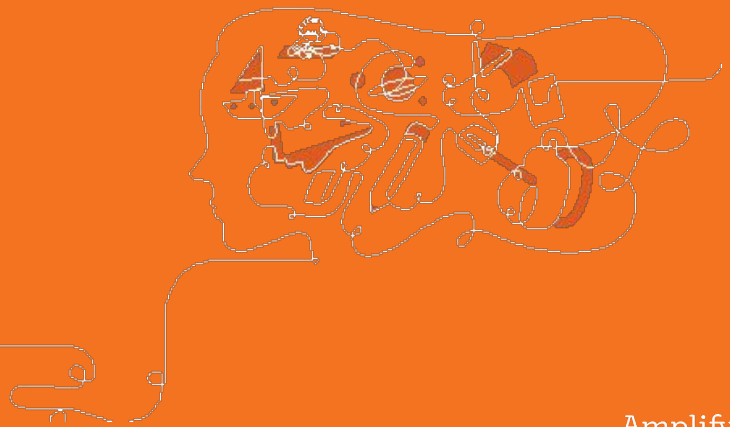
Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-10PM EST and weekends 10AM-6PM EST.

help@amplify.com

800-823-1969

Amplify Chat

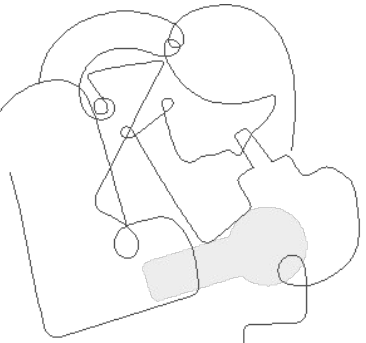
End of Part 1



Amplify Science

Unit 4: Ecosystem Restoration (with a focus on SEP)

Grade 5, Part 2



School/District Name: LAUSD
Date:
Presented by:

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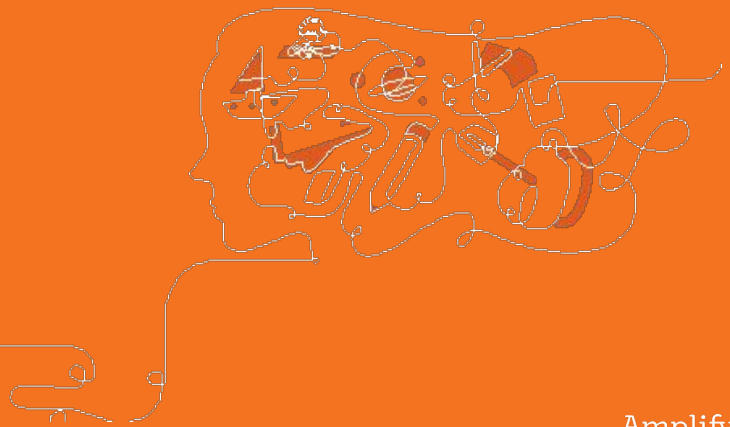
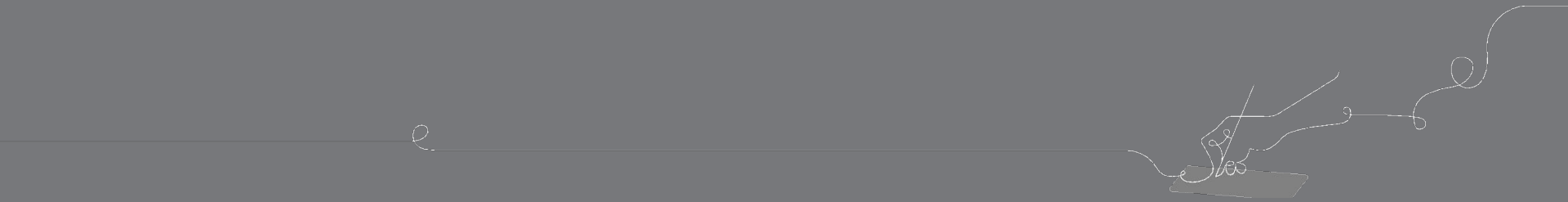
Part 2

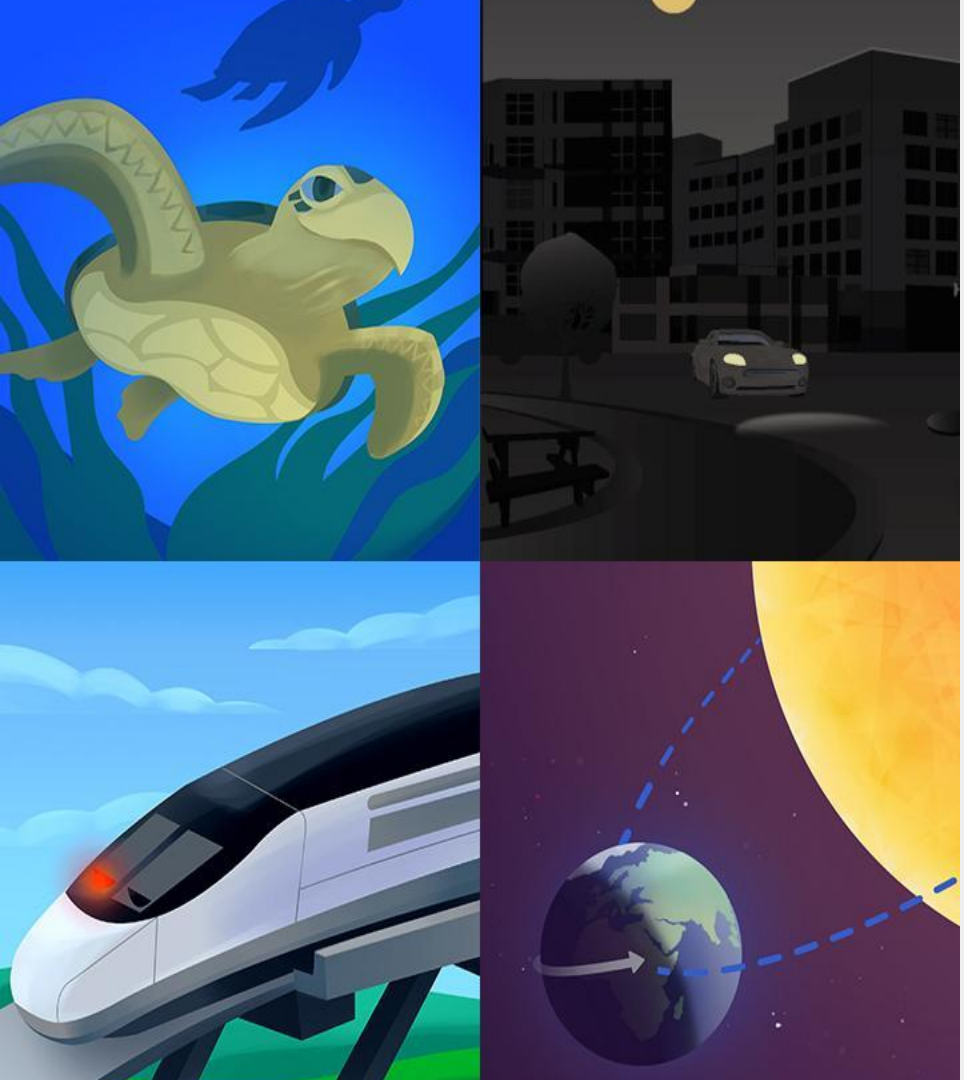


Overarching goals

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

- ❏ Identify the Science and Engineering Practices within a lesson and how they are taught.
- ❏ Apply this knowledge to prepare to teach.





Plan for the day: Part 2

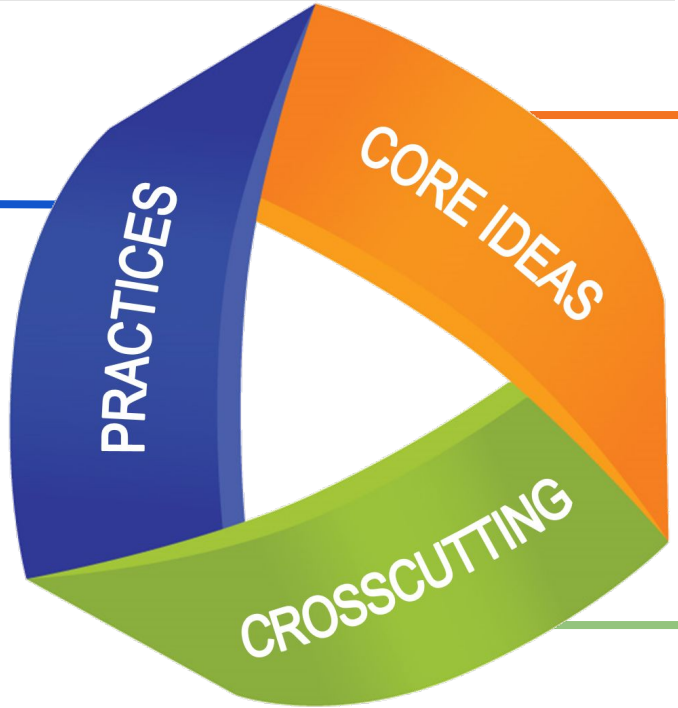
- Review
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing

Next Generation Science Standards

Designed to help students build a cohesive understanding of science

What scientists do

Science and Engineering Practices



What scientists want to know

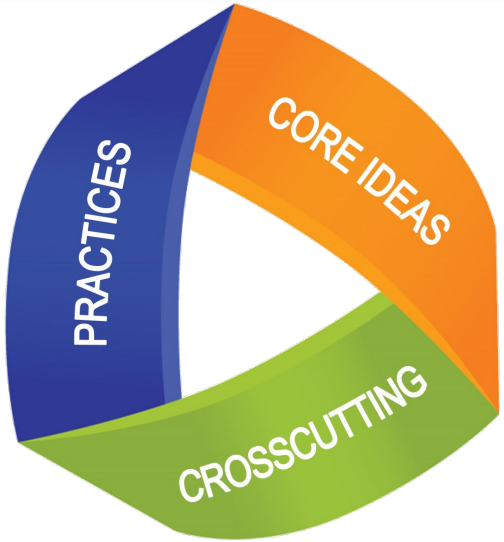
Disciplinary Core Ideas

How scientists think

Crosscutting Concepts

Next Generation Science Standards

Science and Engineering Practices

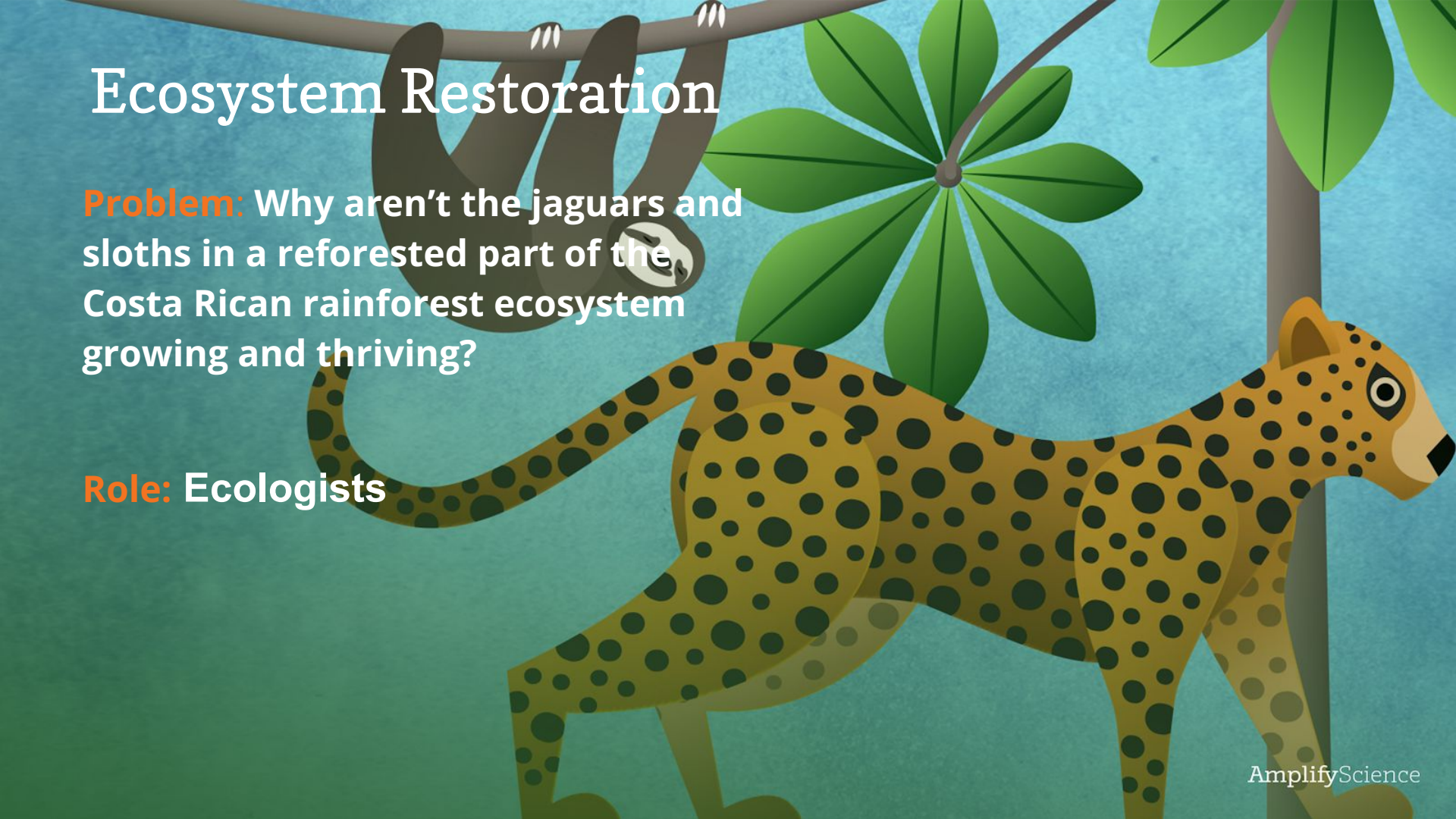


1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for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

Ecosystem Restoration

Problem: Why aren't the jaguars and sloths in a reforested part of the Costa Rican rainforest ecosystem growing and thriving?

Role: Ecologists



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Ecosystem Restoration Unit 3D Statements

Key

Practices | Disciplinary Core Ideas | Crosscutting Concepts

Unit Level

Students use models to investigate why a reforested area of a Costa Rican rain forest is not thriving (energy and matter, systems and system models, cause and effect). Students use evidence to construct oral and written arguments about why the living things in this rain forest ecosystem are not growing and thriving (energy and matter, systems and system models, cause and effect).

Ecosystem Restoration Chapter 3D Statements

Key

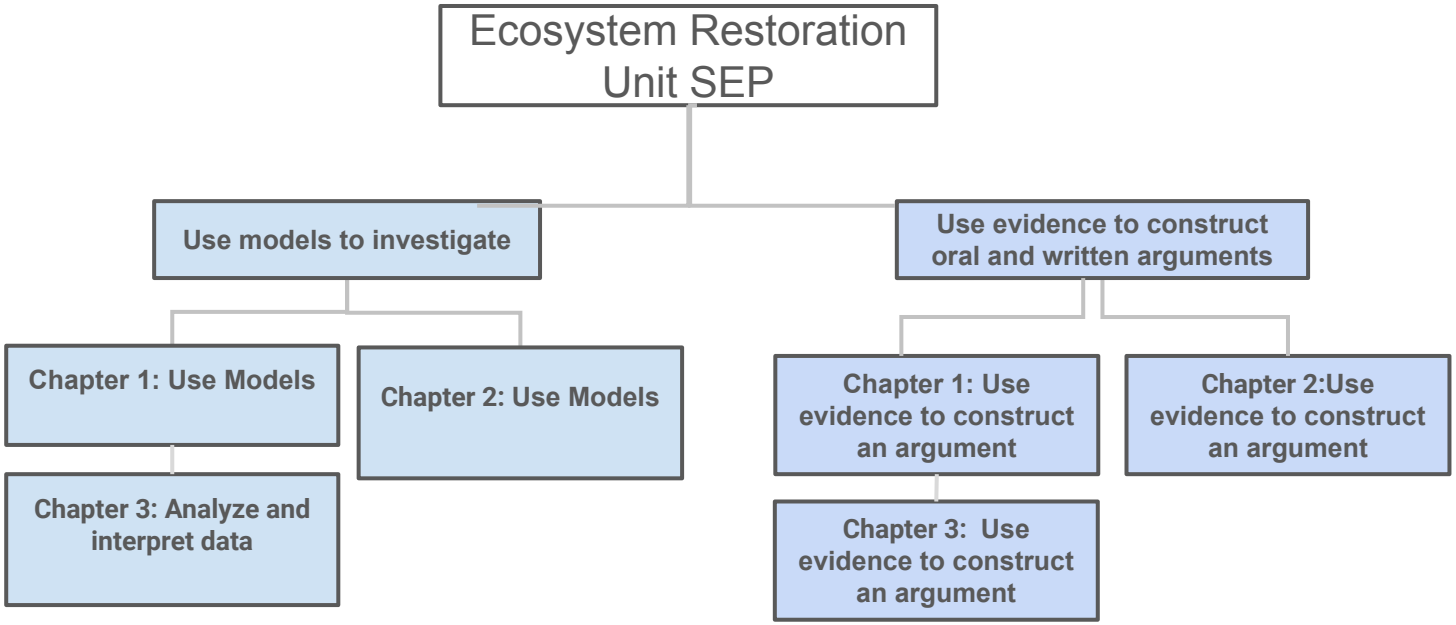
Practices | Disciplinary Core Ideas | Crosscutting Concepts

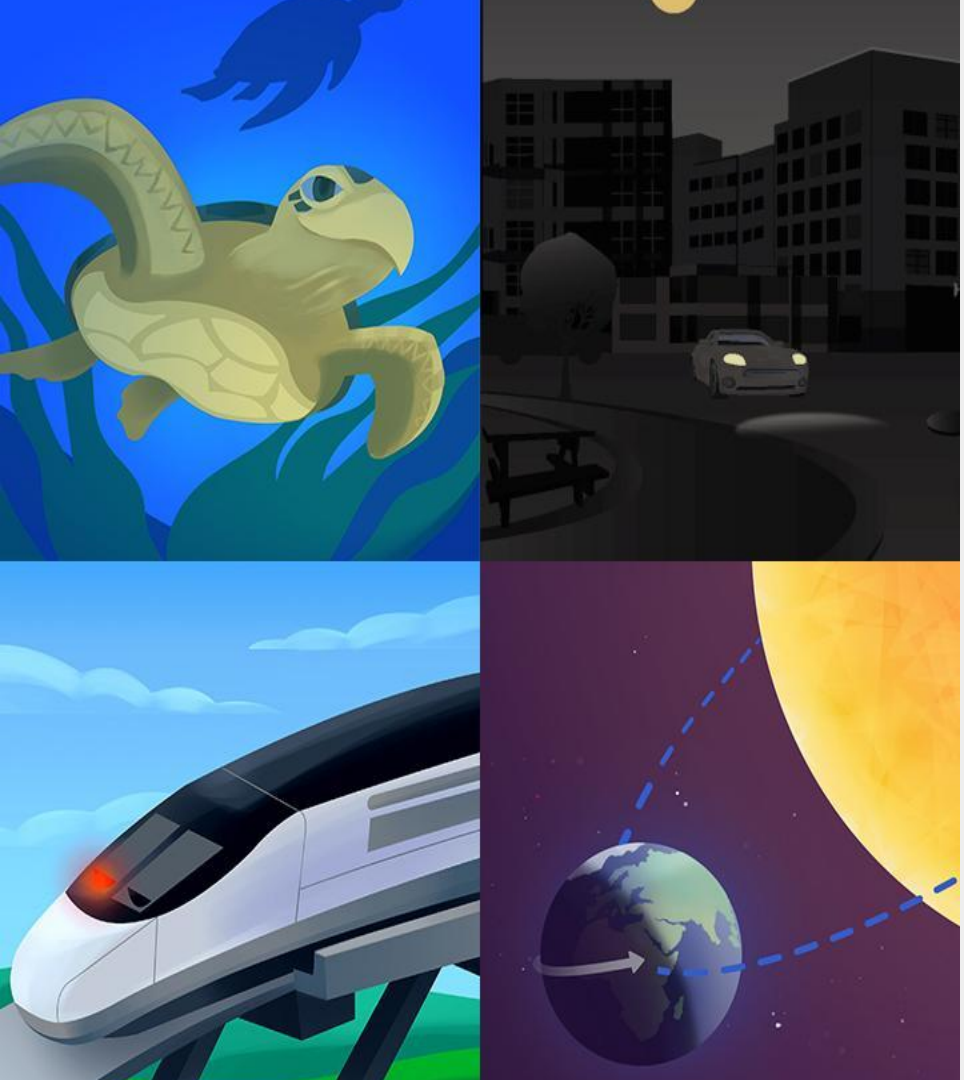
Chapter Level

Chapter 1: Why aren't the jaguars and sloths growing and thriving?

Students use models to investigate what animals need to grow and thrive (energy and matter). Students use evidence to construct an argument about why jaguars and sloths in an area of a rainforest ecosystem are not growing and thriving (energy and matter, systems and system models).

Let's Review Ecosystem Restoration

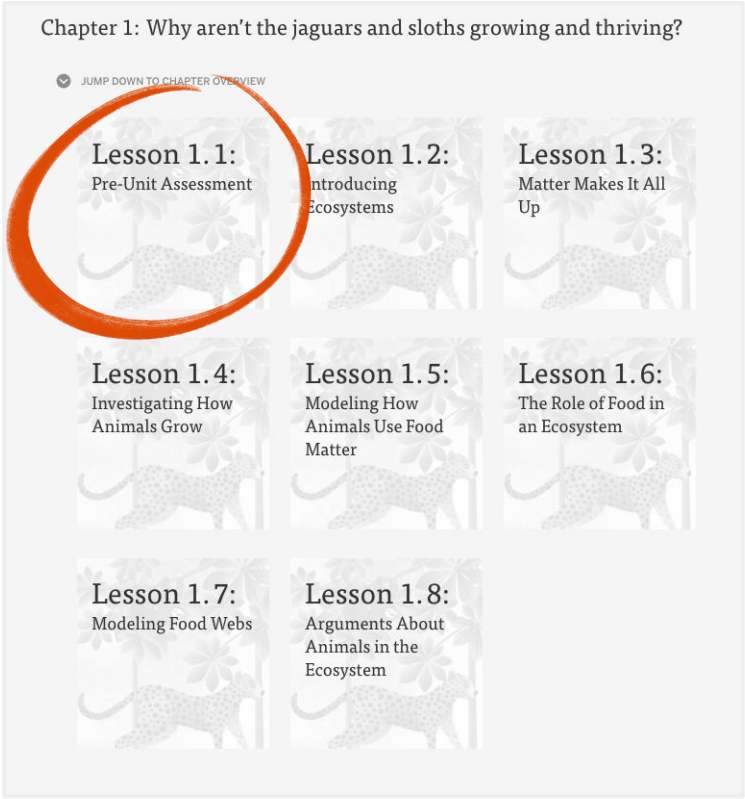




Plan for the day: Part 2

- Review
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing

Ecosystem Restoration

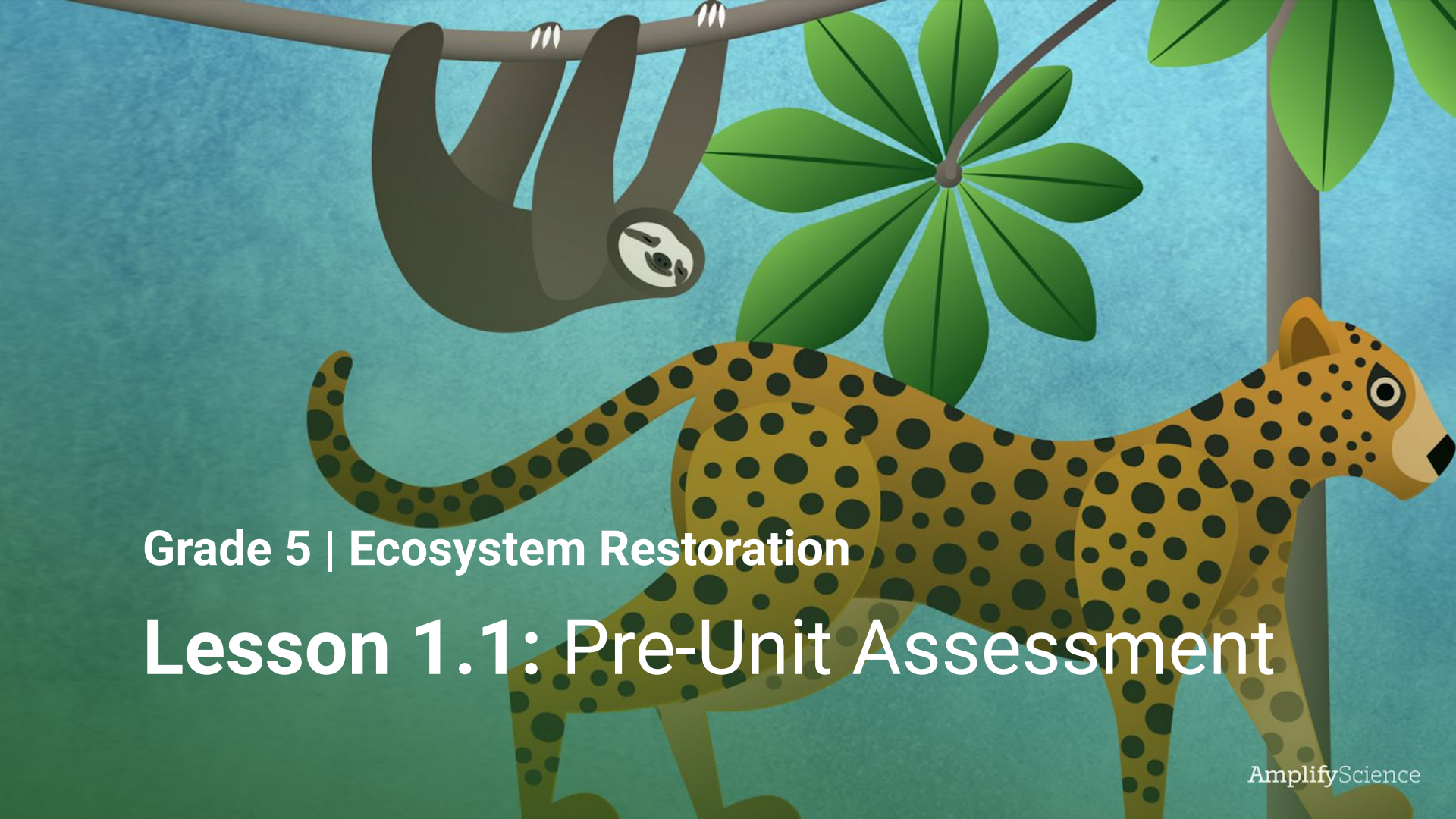


3D Statements, Lesson 1.1

Key

Practices | Disciplinary Core Ideas | Crosscutting Concepts

Students write initial arguments and explore a digital model about the growth of organisms in an ecosystem (energy and matter, systems and system models).



Grade 5 | Ecosystem Restoration

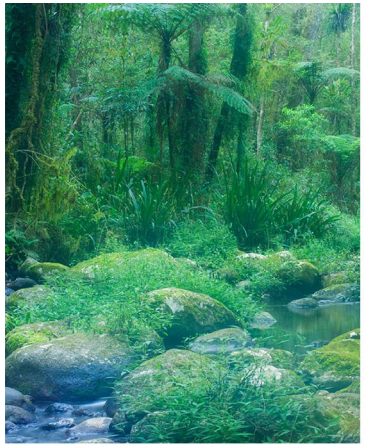
Lesson 1.1: Pre-Unit Assessment

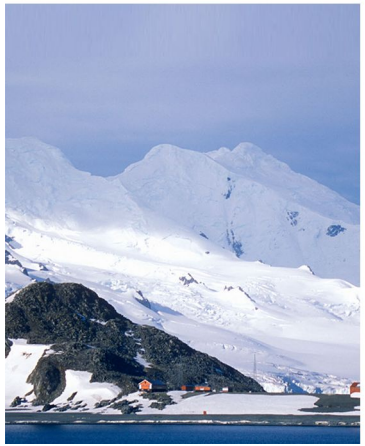
AmplifyScience

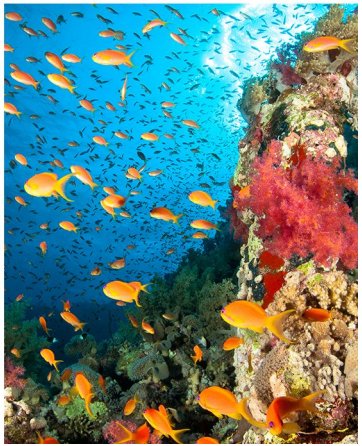
10 MIN

Activity 1

Introducing the Unit





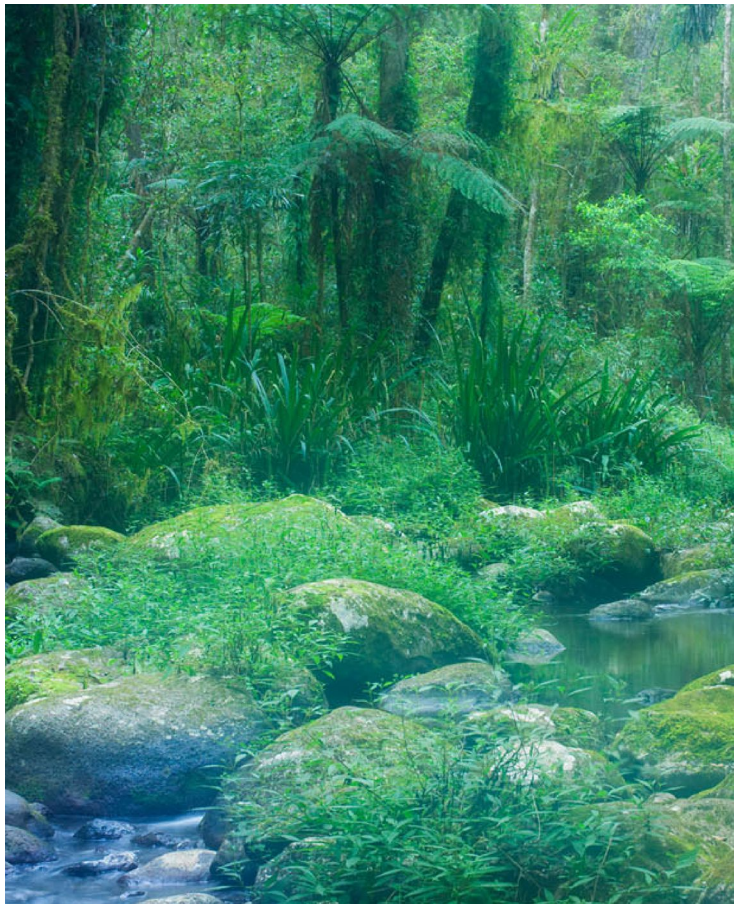


These photos show examples of ecosystems.

What do you know about **ecosystems?**

We can think of ecosystems as places where **animals** and **plants** live together in their **environment.**

There are many different kinds of ecosystems, and different types of living things live in different ecosystems. Let’s think about a few examples.



This is a rain forest in Border Ranges National Park in Australia.

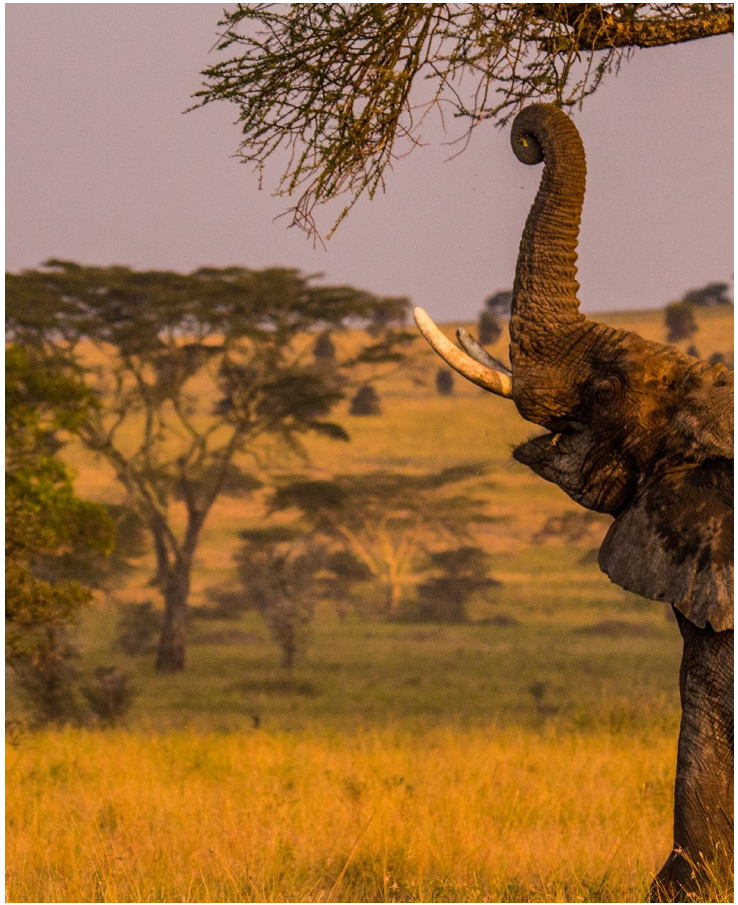
What living things do you think we would find in a **rain forest ecosystem?** What might those living things need to grow?

This is a desert in Signal Peak, Arizona, United States.

What living things do you think we would find in a **desert ecosystem?** What might those living things need to grow?

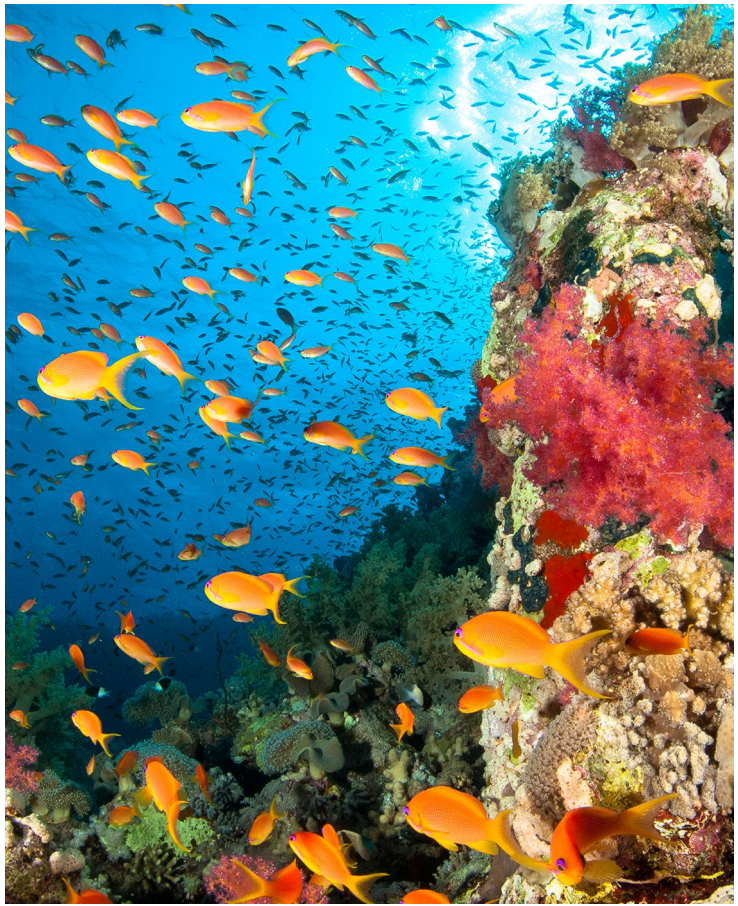
This is a tundra near Bransfield Strait, Antarctica.

What living things do you think we would find in a **tundra ecosystem?** What might those living things need to grow?



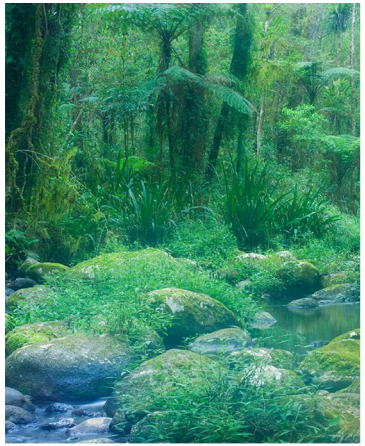
This is the savanna in Serengeti National Park, Tanzania, Africa.

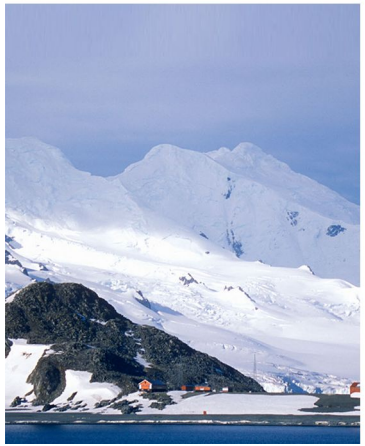
What living things do you think we would find in a **savanna ecosystem?** What might those living things need to grow?

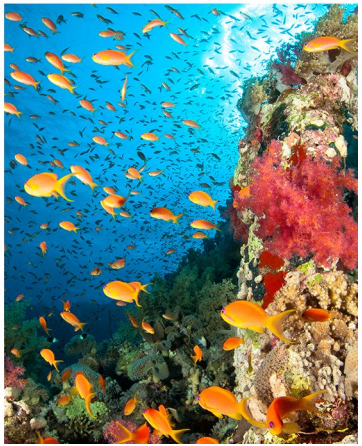


This is a coral reef in the Red Sea near Egypt.

What living things do you think we would find in a **coral reef ecosystem?** What might those living things need to grow?







Now we have talked about several different kinds of ecosystems.

Do you have any new ideas about what an **ecosystem** is? Did you notice anything else you would like to share?

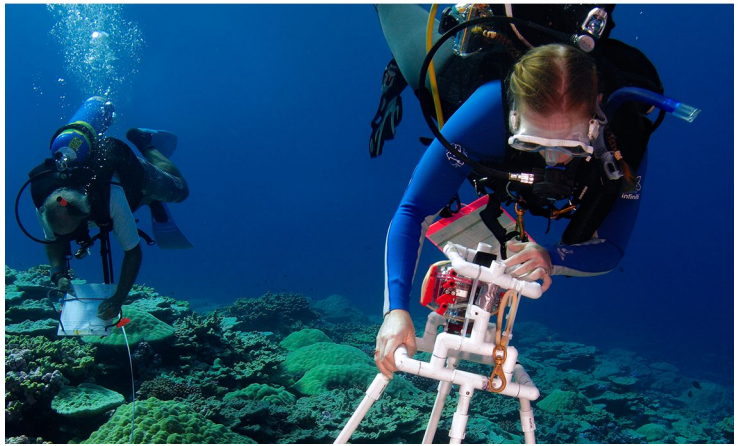
Unit Question

How do organisms in an ecosystem get the matter and energy they need to grow and thrive?

Vocabulary

ecologist

a scientist who studies ecosystems



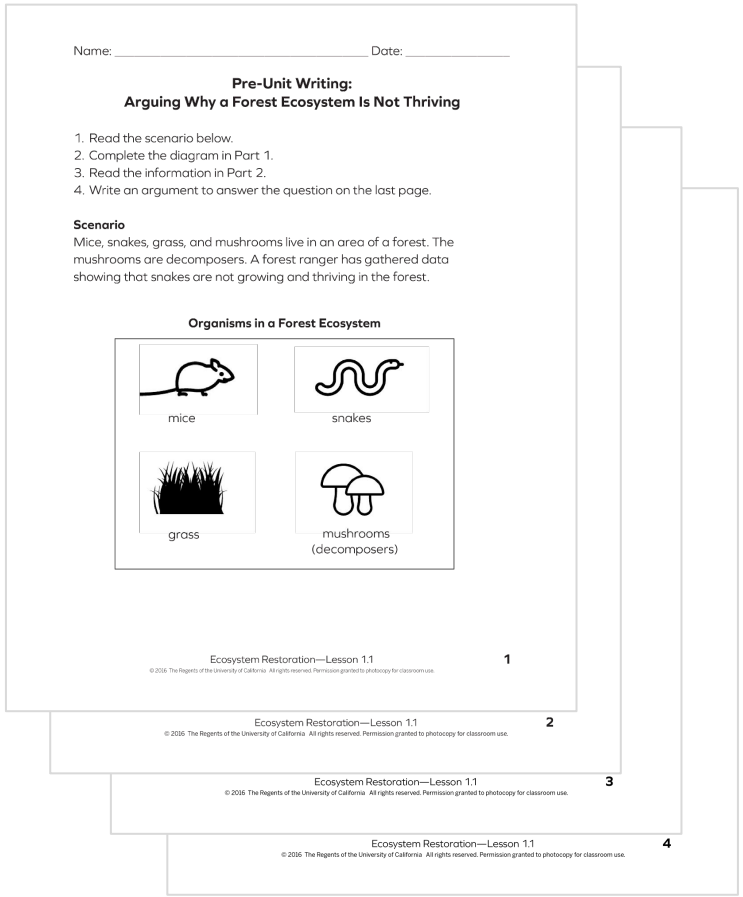
These are **ecologists.** Ecologists observe ecosystems and their parts in order to draw conclusions.

In this unit, we will take on the role of ecologists.

25 MIN

Activity 2

Writing Initial Arguments



Name: _____ Date: _____

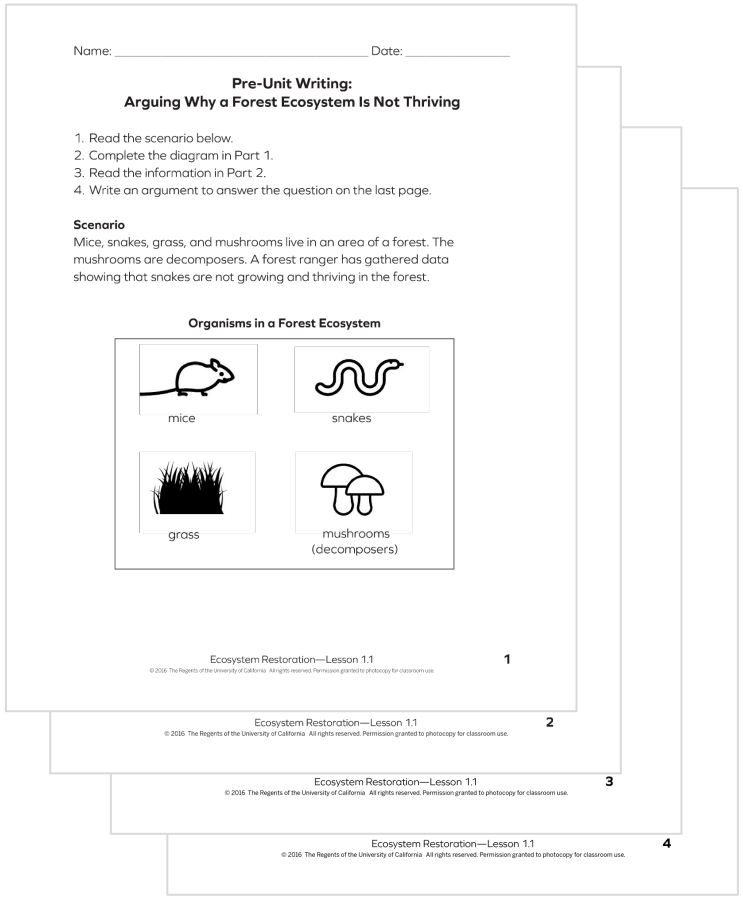
Pre-Unit Writing:
Arguing Why a Forest Ecosystem Is Not Thriving

1. Read the scenario below.
2. Complete the diagram in Part 1.
3. Read the information in Part 2.
4. Write an argument to answer the question on the last page.

Scenario
Mice, snakes, grass, and mushrooms live in an area of a forest. The mushrooms are decomposers. A forest ranger has gathered data showing that snakes are not growing and thriving in the forest.

Organisms in a Forest Ecosystem

Before we start learning more, you will have an opportunity to **write** your very first ideas about a **problem in an ecosystem** and why it might be happening.



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Organisms in a Forest Ecosystem

mice

snakes

grass

mushrooms (decomposers)

Ecosystem Restoration—Lesson 1.1 1

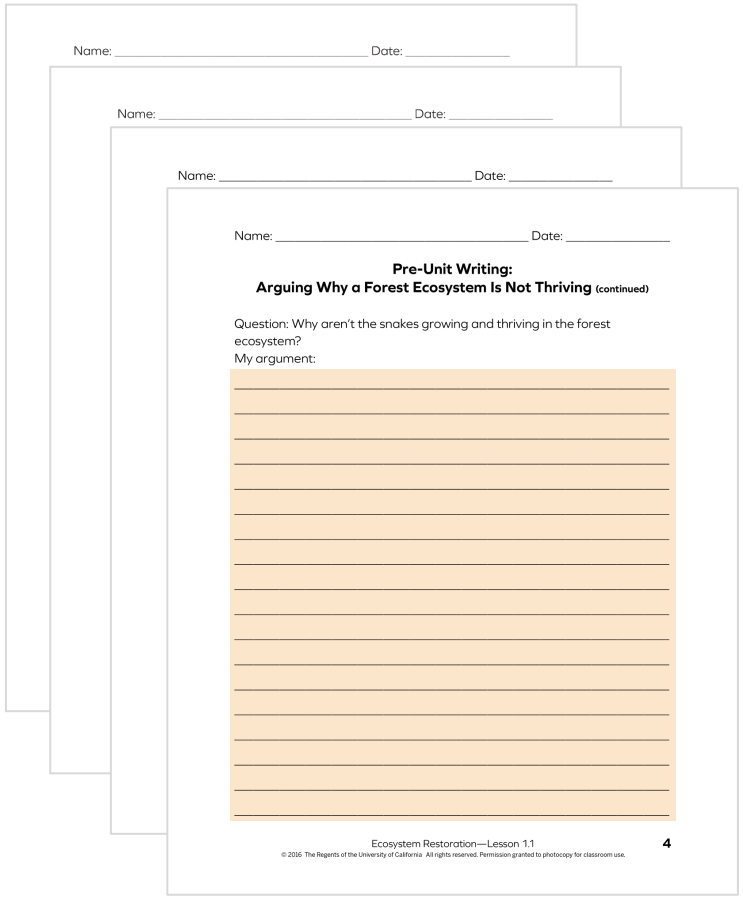
Ecosystem Restoration—Lesson 1.1 2

Ecosystem Restoration—Lesson 1.1 3

Ecosystem Restoration—Lesson 1.1 4

There are **four pages** for this writing task.

Let’s review the directions together.


Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Pre-Unit Writing:
Arguing Why a Forest Ecosystem Is Not Thriving (continued)

Question: Why aren't the snakes growing and thriving in the forest ecosystem?
My argument:

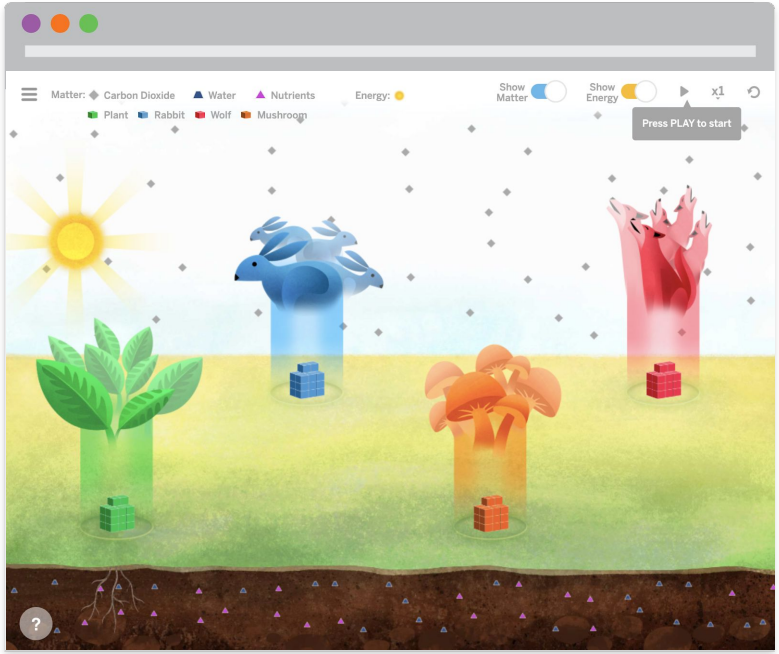
Ecosystem Restoration—Lesson 1.1 4

Complete the diagram and **write** about why you think the snakes are not growing and thriving in the forest ecosystem.

20 MIN

Activity 3

Exploring the Simulation

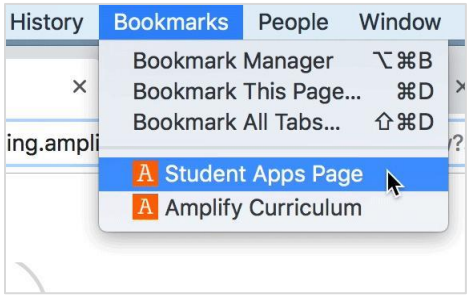


Throughout the unit, we will be using a **Sim** to help us figure out what an ecosystem is and what it needs in order to thrive.

Guidelines for Using Apps

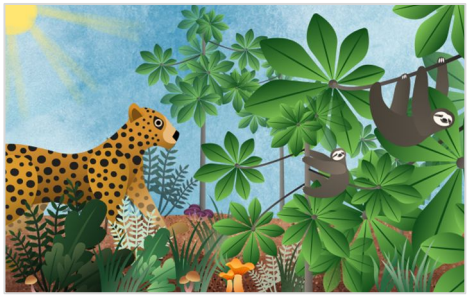
- Only one person “drives” at a time.
- Anyone can make suggestions about how to use the app.
- Talk about what you observe.
- Rotate the role of “driver.”

Open the Simulation



Step 1

Click on the **Student Apps Page** in your bookmarks.

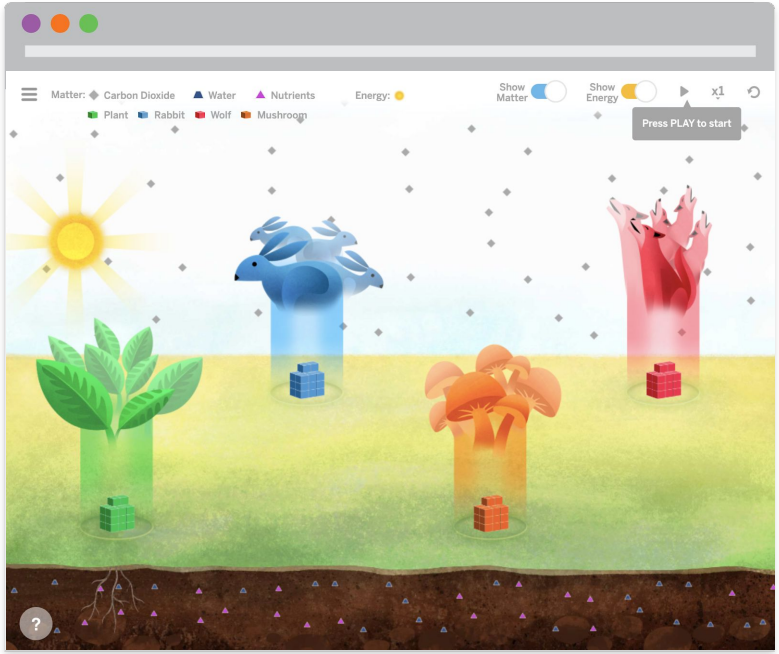


Step 2

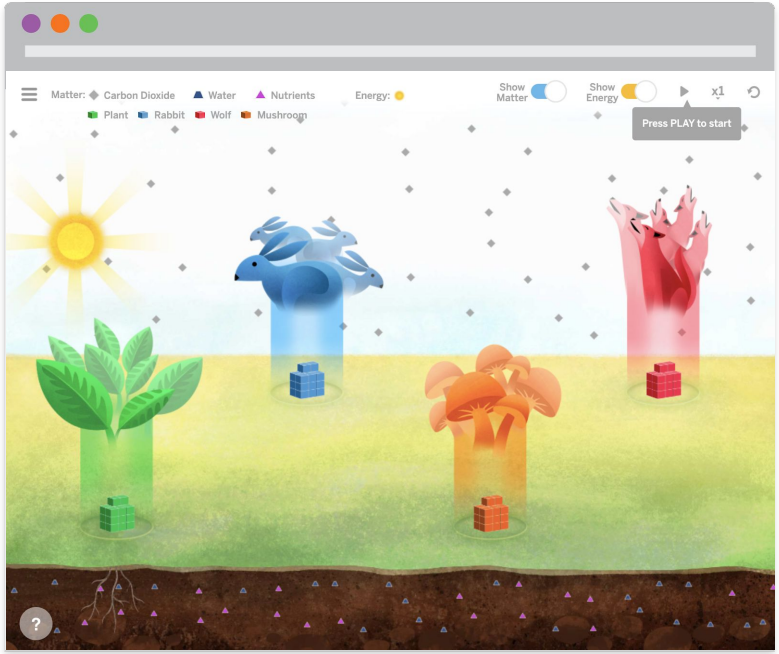
Scroll down and click on the ***Ecosystem Restoration*** **unit.**

Step 3

Click on the **orange box with a 1** to access the Sim.

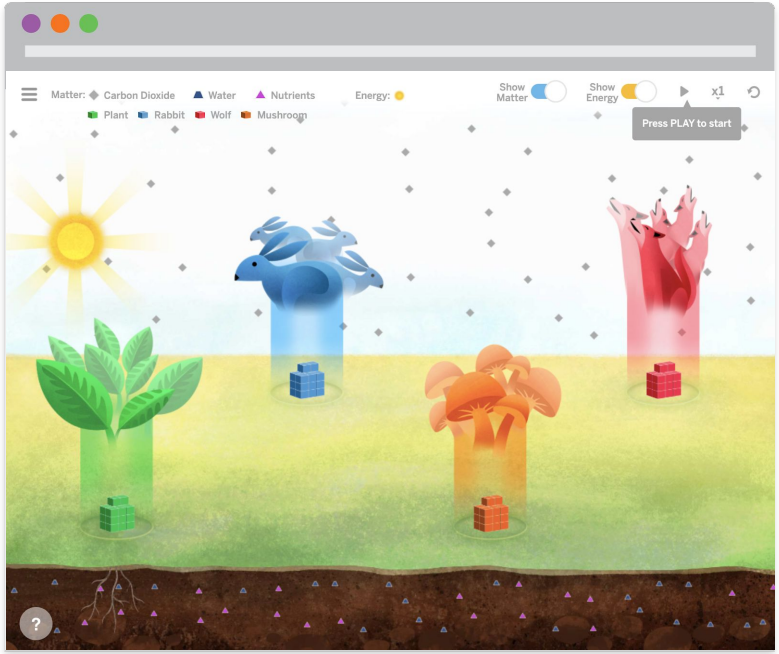


Explore the Sim and try to figure out how it works.



What did you **observe** while exploring the Sim?

What did you figure out about how the Sim works?



What did the Sim exploration make you wonder about?

5 MIN

Activity 4

Introducing the Investigation Notebook

AmplifyScience

Ecosystem Restoration:

Matter and Energy in a Rain Forest

Investigation Notebook

As ecologists, we will use **Investigation Notebooks** to keep track of what we observe and our ideas and understandings about ecosystems.

End of Lesson

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

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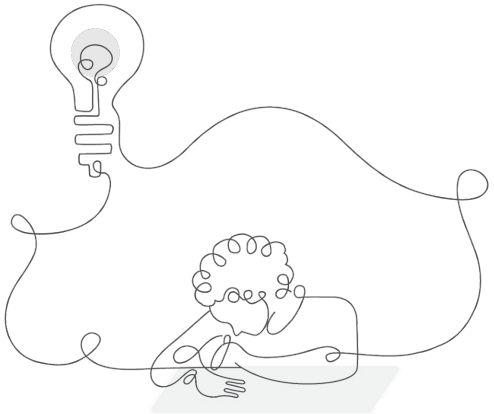
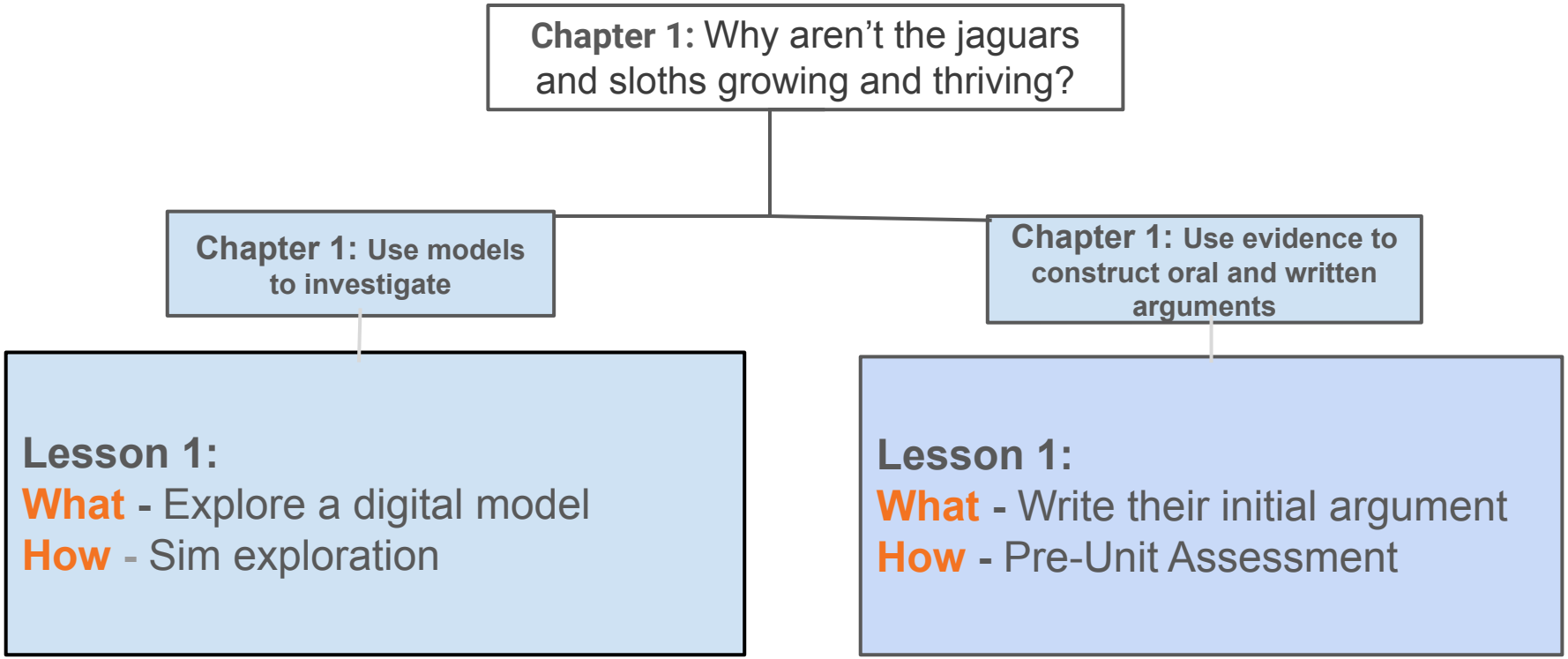
Science and Engineering Practices

Describe the science and engineering practices the students were engaged in during this lesson.



Science & Engineering Practices: Ecosystem Restoration



Lesson Brief

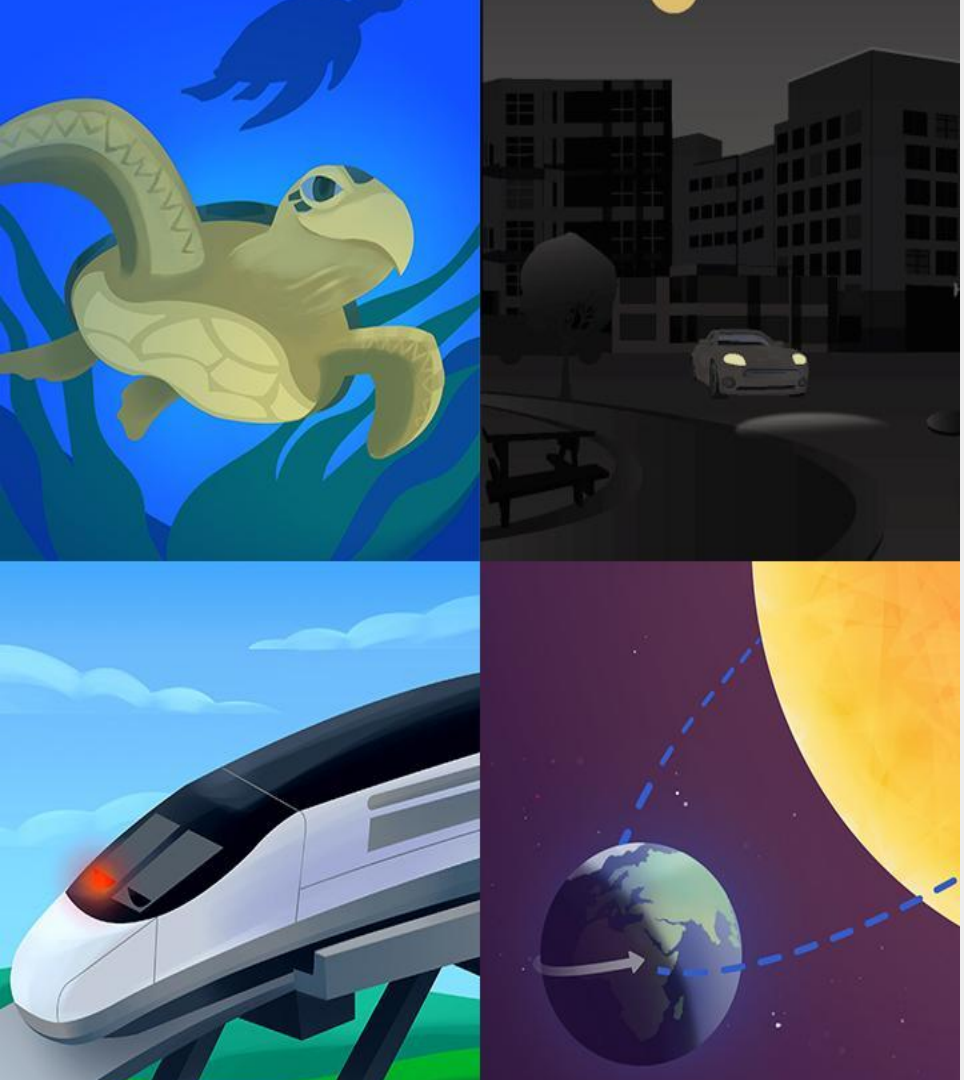
Lesson at a Glance

1: Introducing the Orangutan Reserve (10 min.)
Students learn about the *Weather and Climate* unit and their role as meteorologists who must recommend a suitable location for an orangutan reserve.

(Teacher Only) Introducing Weather (20 min.)
Students watch a video that shows different weather conditions and list weather-related words on sticky notes. Groups sort their sticky notes into categories. After a class discussion about the sorting results, they are introduced to *precipitation*. Students then practice observing and describing today's local weather. This invitational activity allows students to explore a variety of atmospheric conditions.

2: Pre-Unit Assessment (20 min.)
Students complete a pre-unit writing assessment to reveal their initial understanding of the core content of the unit, which can be assessed with the Assessment Guide: Interpreting Students' Pre-Unit Explanations About Weather Data (in Digital Resources). In addition to providing insight to the teacher, asking students to take stock of their initial knowledge helps prepare them to make connections to new knowledge.

3: Introducing Investigation Notebooks (10 min.)
Students receive their *Weather and Climate* Investigation Notebooks and learn some ways that scientists use notebooks.



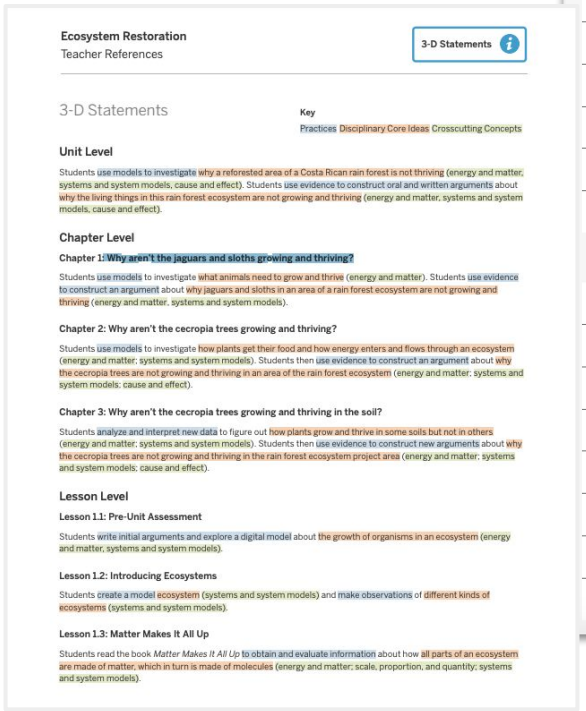
Plan for the day: Part 2

- Review
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing

3D Statements Lesson Work time

1. Identify what **Science and Engineering Practices** are addressed in each lesson in Chapter One.

2. Identify how the **Science and Engineering Practices** are addressed



Ecosystem Restoration
Teacher References

3-D Statements

3-D Statements

Key
Practices Disciplinary Core Ideas Crosscutting Concepts

Unit Level

Students use models to investigate why a reforested area of a Costa Rican rain forest is not thriving (energy and matter; systems and system models; cause and effect). Students use evidence to construct oral and written arguments about why the living things in this rain forest ecosystem are not growing and thriving (energy and matter; systems and system models; cause and effect).

Chapter Level

Chapter 1: Why aren't the jaguars and sloths growing and thriving?

Students use models to investigate what animals need to grow and thrive (energy and matter). Students use evidence to construct an argument about why jaguars and sloths in an area of a rain forest ecosystem are not growing and thriving (energy and matter; systems and system models).

Chapter 2: Why aren't the cecropia trees growing and thriving?

Students use models to investigate how plants get their food and how energy enters and flows through an ecosystem (energy and matter; systems and system models). Students then use evidence to construct an argument about why the cecropia trees are not growing and thriving in an area of the rain forest ecosystem (energy and matter; systems and system models; cause and effect).

Chapter 3: Why aren't the cecropia trees growing and thriving in the soil?

Students analyze and interpret new data to figure out how plants grow and thrive in some soils but not in others (energy and matter; systems and system models). Students then use evidence to construct new arguments about why the cecropia trees are not growing and thriving in the rain forest ecosystem project area (energy and matter; systems and system models; cause and effect).

Lesson Level

Lesson 1.1: Pre-Unit Assessment

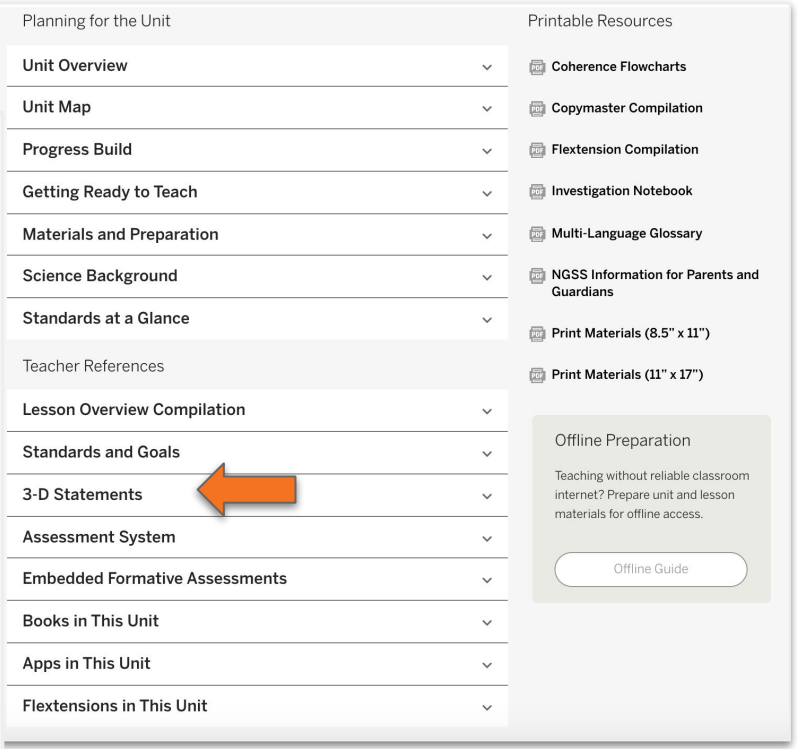
Students write initial arguments and explore a digital model about the growth of organisms in an ecosystem (energy and matter; systems and system models).

Lesson 1.2: Introducing Ecosystems

Students create a model ecosystem (systems and system models) and make observations of different kinds of ecosystems (systems and system models).

Lesson 1.3: Matter Makes It All Up

Students read the book *Matter Makes It All Up* to obtain and evaluate information about how all parts of an ecosystem are made of matter, which in turn is made of molecules (energy and matter; scale, proportion, and quantity; systems and system models).



Planning for the Unit

- Unit Overview
- 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
- Flextensions in This Unit

Printable Resources

- Coherence Flowcharts
- Copymaster Compilation
- Flextension Compilation
- Investigation Notebook
- Multi-Language Glossary
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")
- Print Materials (11" x 17")

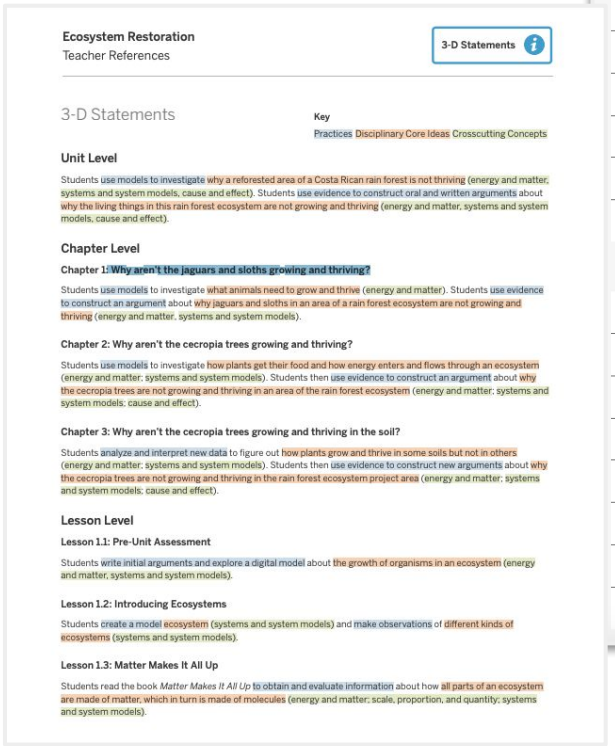
Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide

3D Statements Share Out

Share the what and how of the **Science and Engineering Practices** addressed in each lesson.



Ecosystem Restoration
Teacher References

3-D Statements

3-D Statements

Key
Practices Disciplinary Core Ideas Crosscutting Concepts

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Lesson Level

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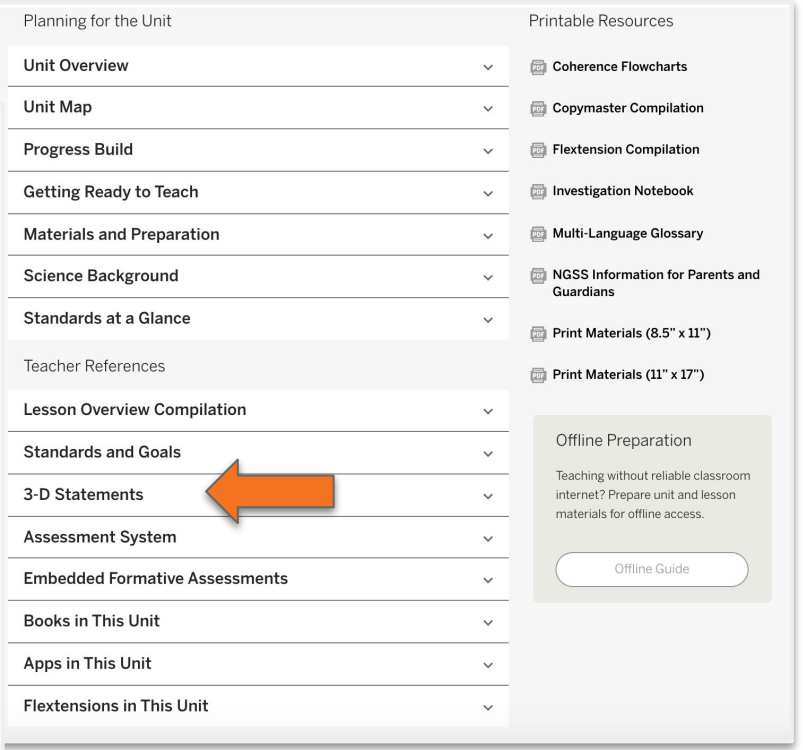
Lesson 1.2: Introducing Ecosystems

Students create a model ecosystem (systems and system models) and make observations of different kinds of ecosystems (systems and system models).

Lesson 1.3: Matter Makes It All Up

Students read the book *Matter Makes It All Up* to obtain and evaluate information about how all parts of an ecosystem are made of matter, which in turn is made of molecules (energy and matter; scale, proportion, and quantity; systems and system models).



Planning for the Unit

- Unit Overview
- 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
- Flextensions in This Unit

Printable Resources

- Coherence Flowcharts
- Copymaster Compilation
- Flextension Compilation
- Investigation Notebook
- Multi-Language Glossary
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")
- Print Materials (11" x 17")

Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

Offline Guide

Science & Engineering Practices: Ecosystem Restoration

Chapter 1: Why aren't the jaguars and sloths growing and thriving?

Chapter 1: Use models to investigate

Lesson 1.1
What - Explore a digital model
How - Sim exploration

Lesson 1.2
What - Create a model, make observations
How - Students build terrariums, Students work with illustrations of three ecosystems to practice making observations.

Lesson 1.3
What - Obtain and evaluate information
How - Students read the first half of the book, *Matter Makes It All Up,* in order to gather information about how animals grow.

Chapter 1: Use evidence to construct oral and written arguments

Lesson 1.1
What - Write their initial argument
How - Pre-Unit Assessment

Lesson 1.2
What - Make observations
How - Students work with illustrations of three ecosystems to practice making observations.

Lesson 1.3
What - Obtain and evaluate information
How - Students read the first half of the book, *Matter Makes It All Up*i, n order to gather information about how animals grow.

Science & Engineering Practices: Ecosystem Restoration

Chapter 1: Why aren't the jaguars and sloths growing and thriving?

Chapter 1: Use models to investigate

Lesson 1.4
What - Create physical models
How - Students make models of animals by using interlocking cubes to represent matter.

Lesson 1.5
What - Use a digital model
How - Students work with the *Ecosystem Restoration* Simulation to investigate more about how animals use food molecules

Lesson 1.6
What - Use a digital model
How - Students work with the digital Ecosystem Modeling Tool, which allows them to demonstrate their growing understanding of how matter flows between organisms in an ecosystem.

Chapter 1: Use evidence to construct oral and written arguments

Lesson 1.4
What - N/A
How - N/A

Lesson 1.5
What - N/A
How - N/A

Lesson 1.6
What - N/A
How - N/A

Science & Engineering Practices: Ecosystem Restoration

Chapter 1: Why aren't the jaguars and sloths growing and thriving?

Chapter 1: Use models to investigate

Lesson 1.7
What - Create an ecosystem model
How - in the model, students will be organisms in the Everglades Swamp ecosystem, as shown in the food web from *Matter Makes It All Up*.

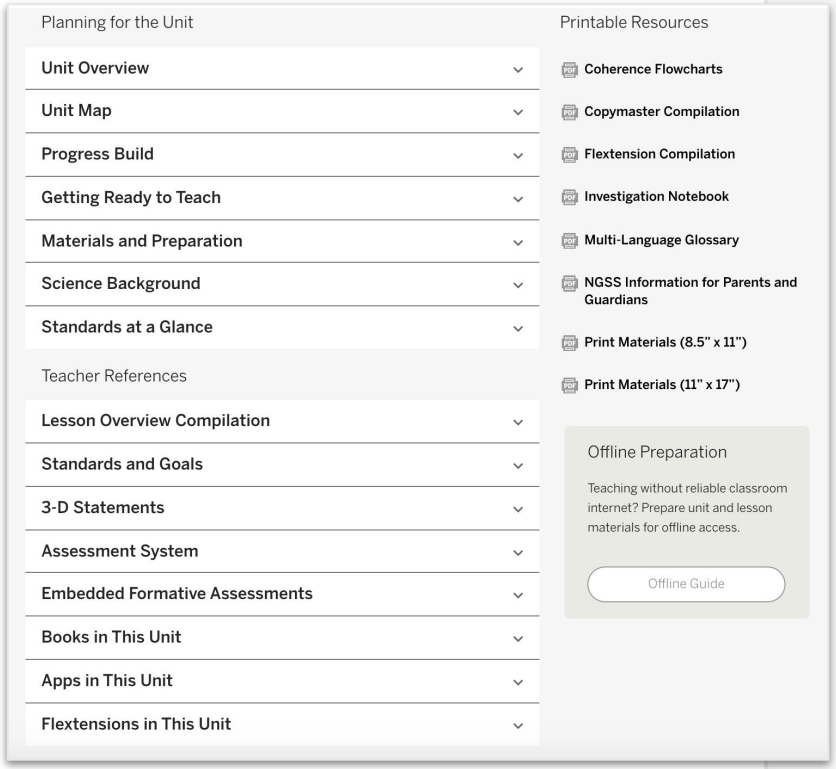
Lesson 1.8
What - Design restoration plan
How - The class writes action steps to create their first Rain Forest Restoration Plan of the unit.

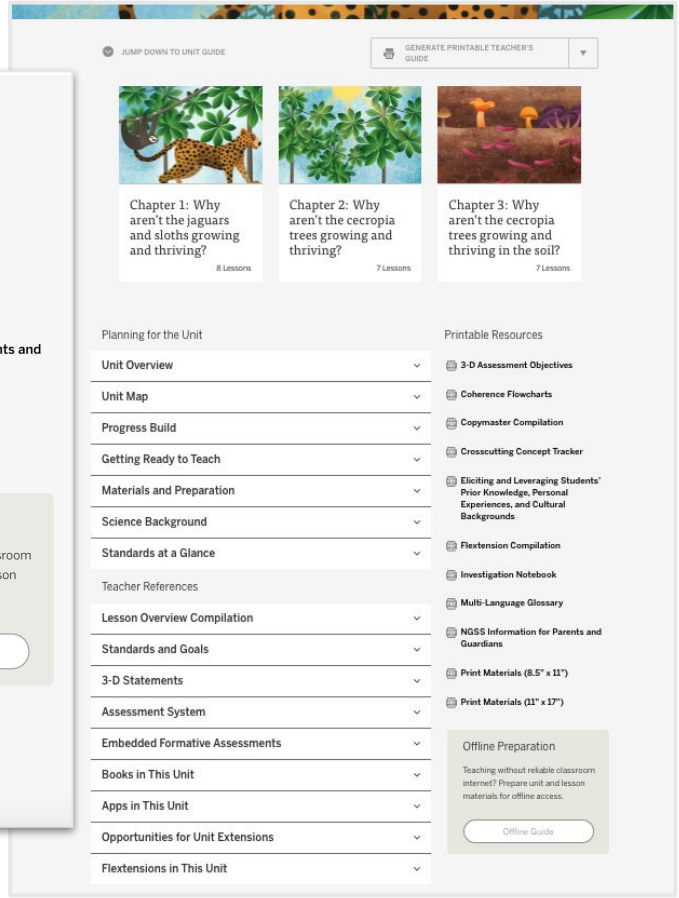
Chapter 1: Use evidence to construct oral and written arguments

Lesson 1.7
What - N/A
How - N/A

Lesson 1.8
What - Use evidence to construct written arguments
How - Students are introduced to and participate in their first Evidence Circles, a structured routine for student-guided, small-group discussions about evidence.

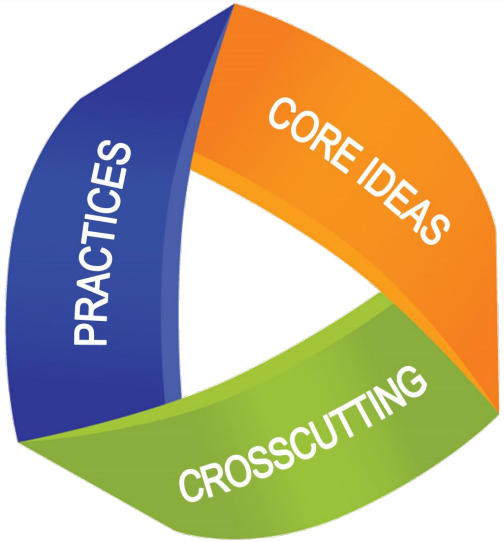
Standards at a Glance





Next Generation Science Standards

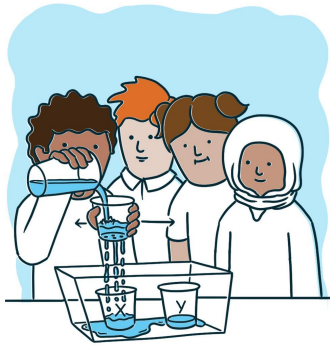
Science and Engineering Practices

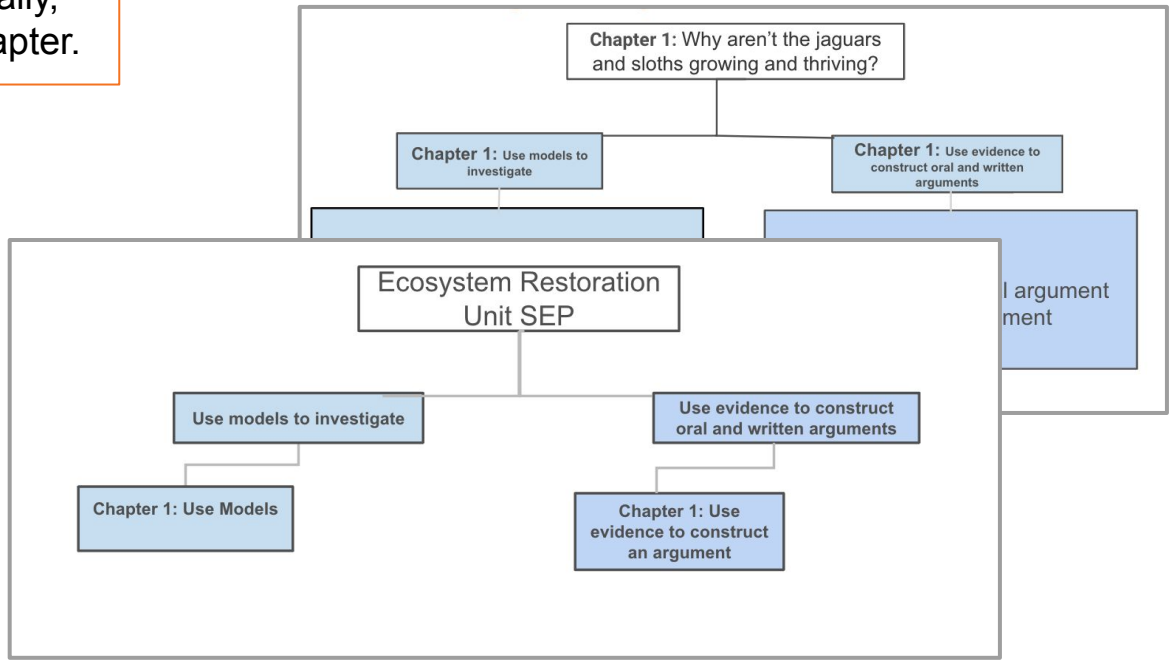


1. Asking questions (for science) and defining problems (for engineering) Ch. 1-3
2. Developing and using models Ch. 1-3
3. Planning and carrying out investigations Ch. 2-3
4. Analyzing and interpreting data Ch. 1-3
5. Using mathematics and computational thinking Ch. 1- 3
6. Constructing explanations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

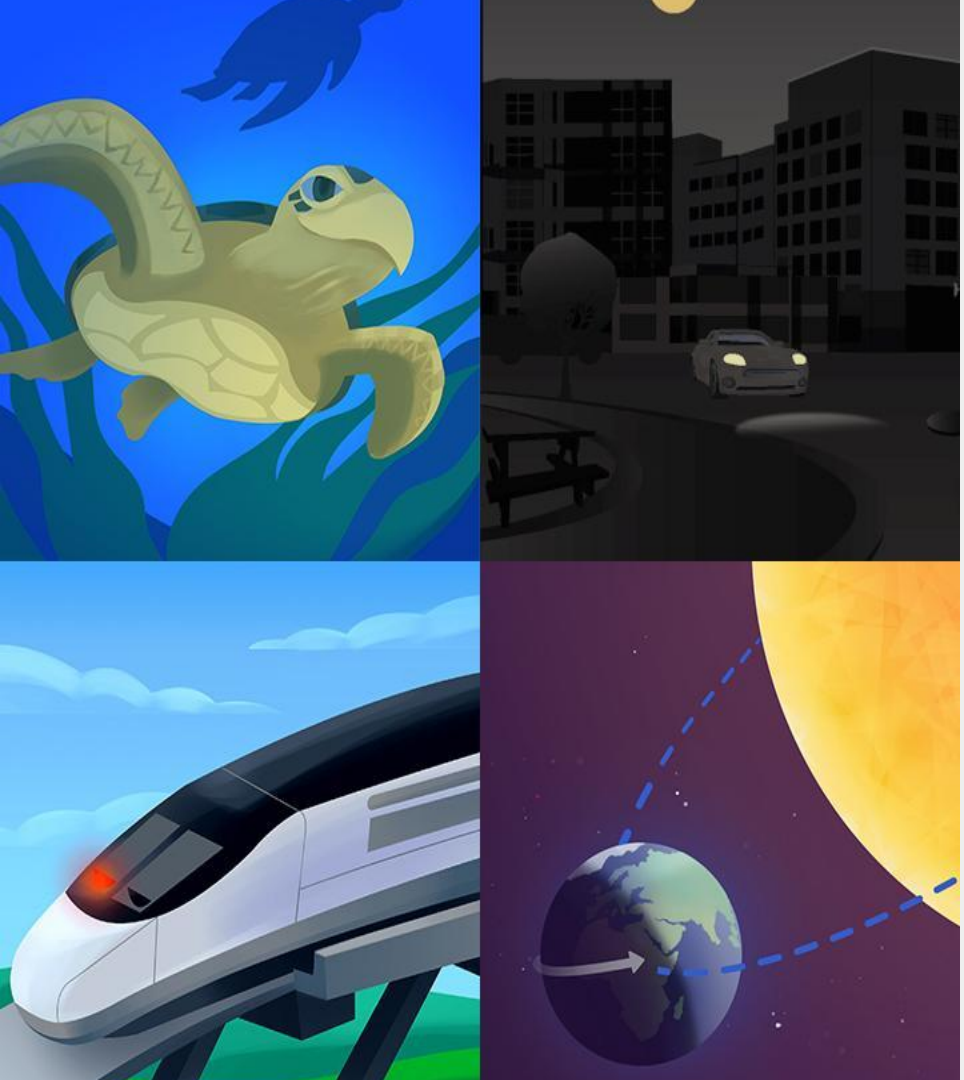
Science & Engineering Practices: Ecosystem Restoration

Building the practices incrementally, lesson by lesson, chapter by chapter.





Questions?



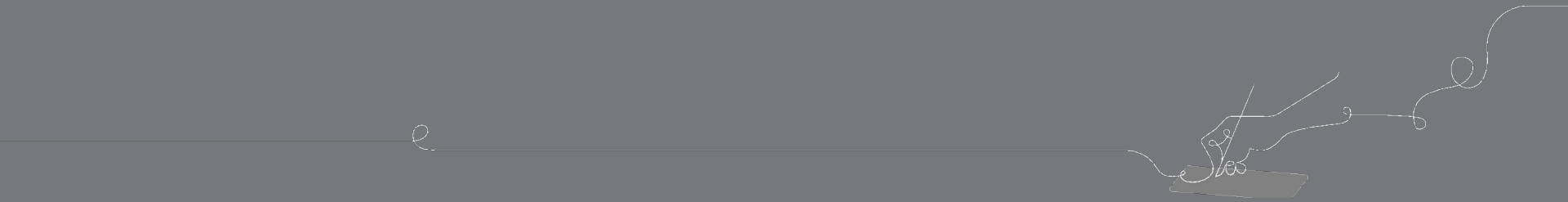
Plan for the day: Part 2

- Review
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing

Overarching goals

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

- ❏ Identify the Science and Engineering Practices within a lesson and how they are taught.
- ❏ Apply this knowledge to prepare to teach.



Closing reflection

Based on our work today, 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!

ify.

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

800-823-1969

Amplify Chat

End of Part 2