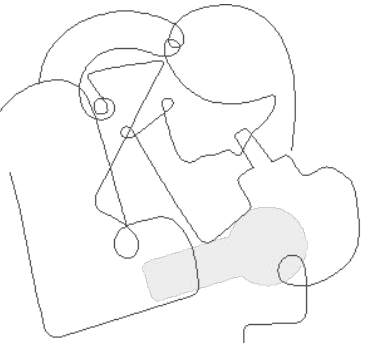
Amplify Science

Patterns of Earth and Sky Unit Deep Dive

Grade 5



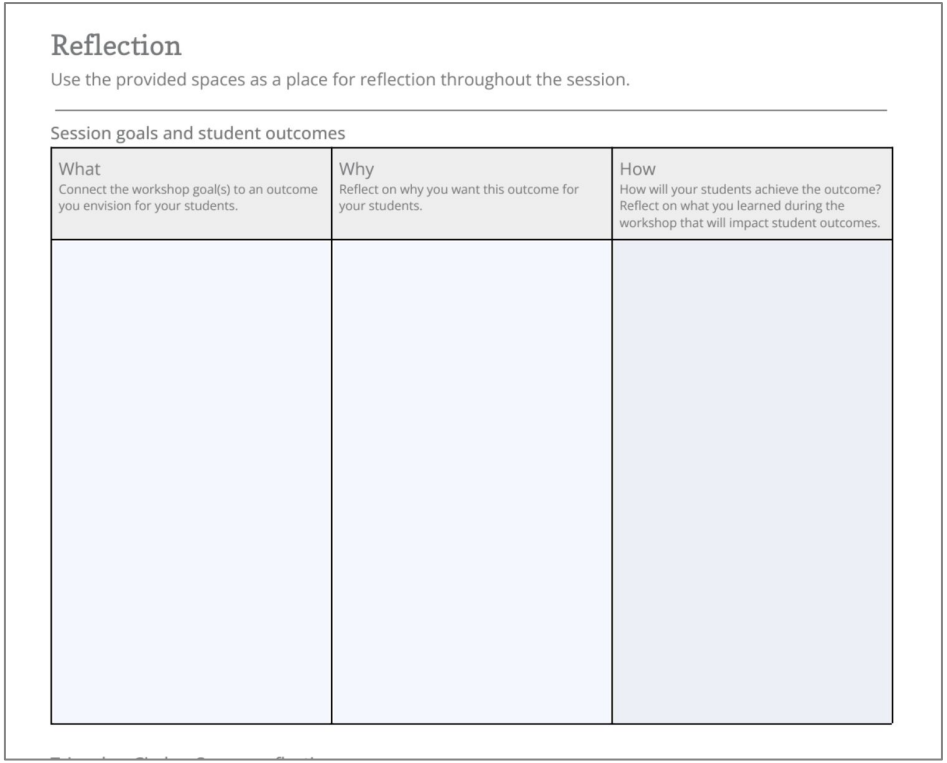
LAUSD
Date: September, 2023
Presented by

PLPG CERTIFIED PROVIDER

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

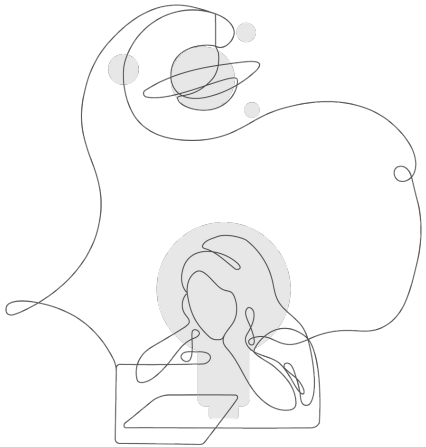
What	Why	How
Connect the workshop goal(s) to an outcome you envision for your students.	Reflect on why you want this outcome for your students.	How will your students achieve the outcome? Reflect on what you learned during the workshop that will impact student outcomes.

Name

Amplify Facilitator

- Add your experience here.
-
-

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

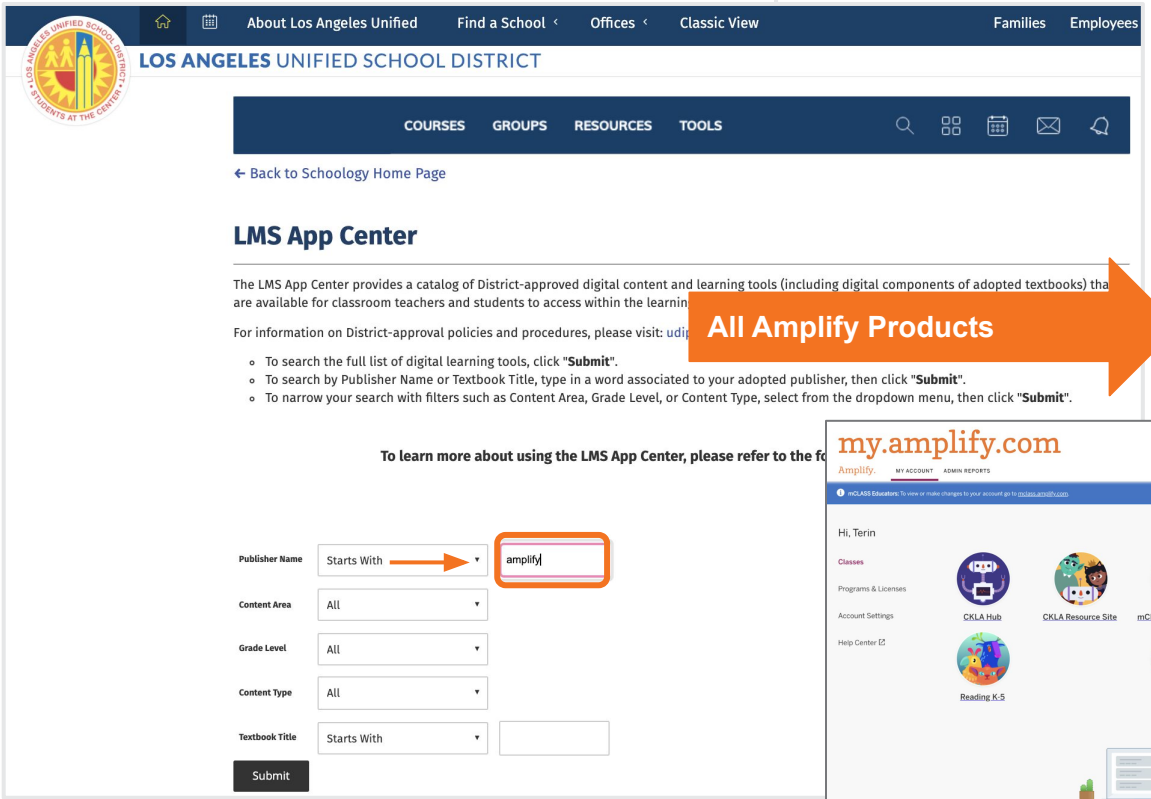
Norms: Establishing a culture of learners

- **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.

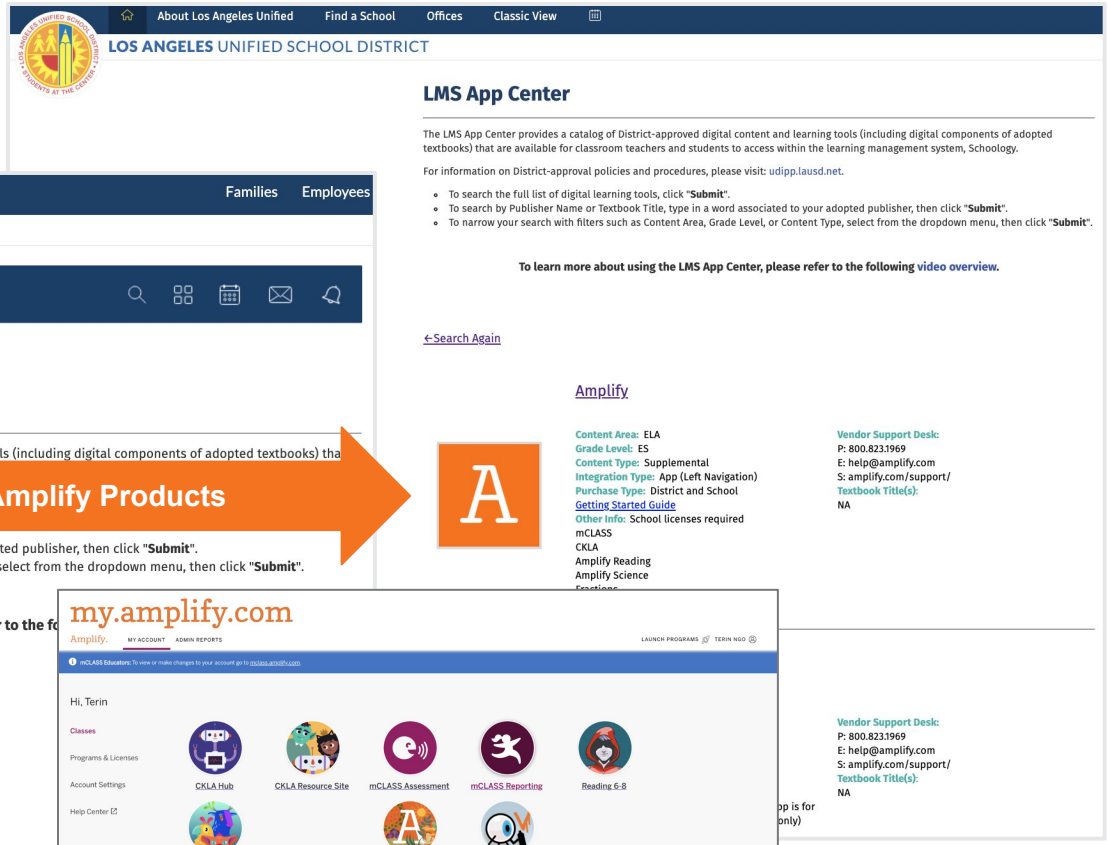
Today's Logistics

- 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

Schoology



All Amplify Products



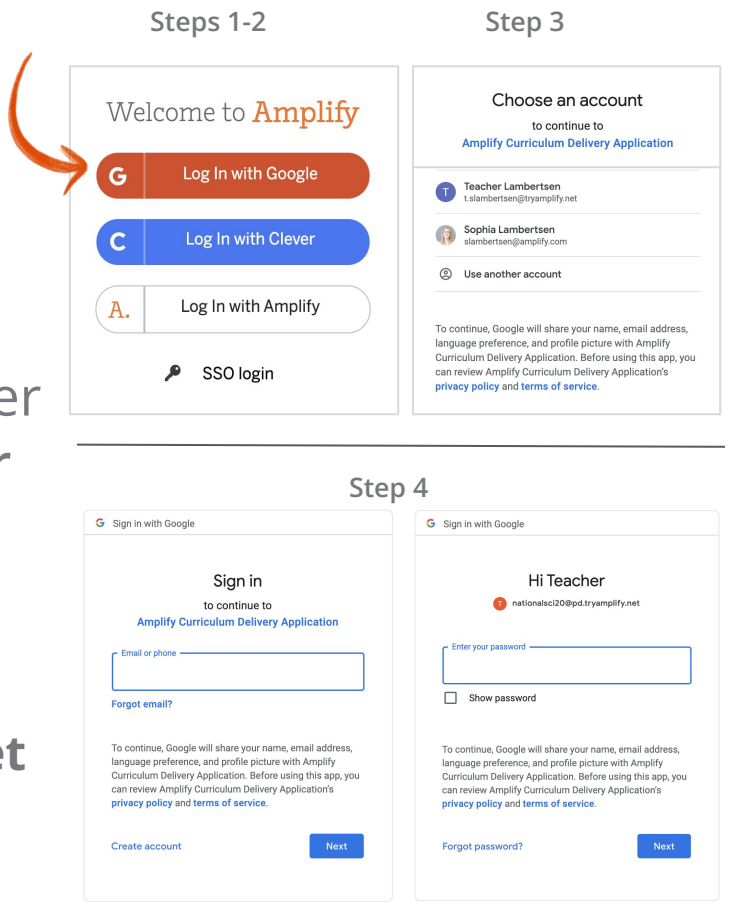
Join Amplify Science Schoology Group

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

Logging in (demo account)

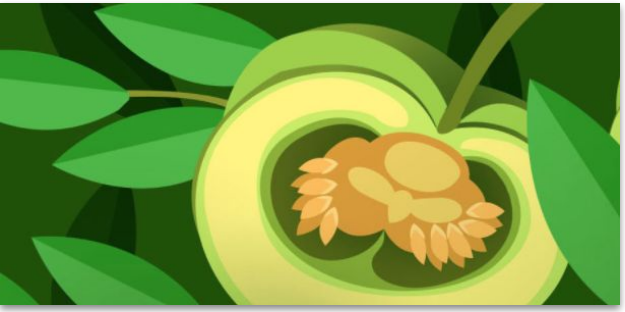
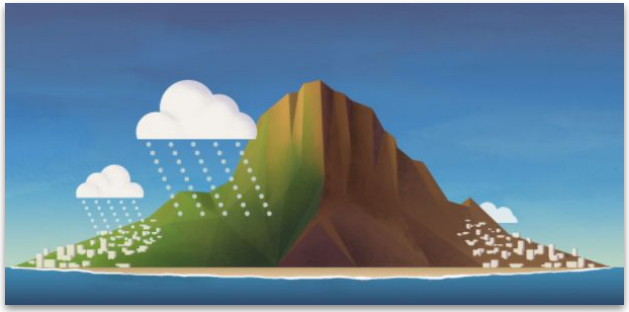
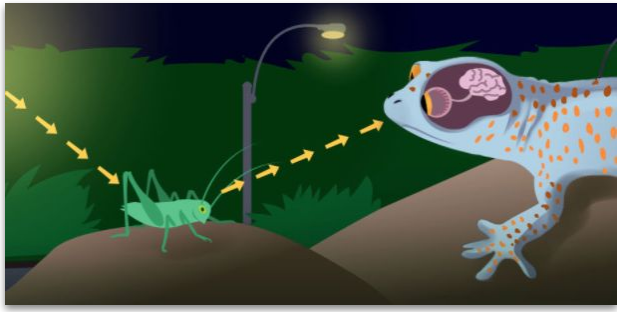
Safari or Chrome

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



LAUSD SUMMER INSTITUTE 2023

Session 1
Unit 1 Deep Dive

Plan for the day

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

Ice Breaker!

Who do we have in the room today?

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

Navigation Temperature Check

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

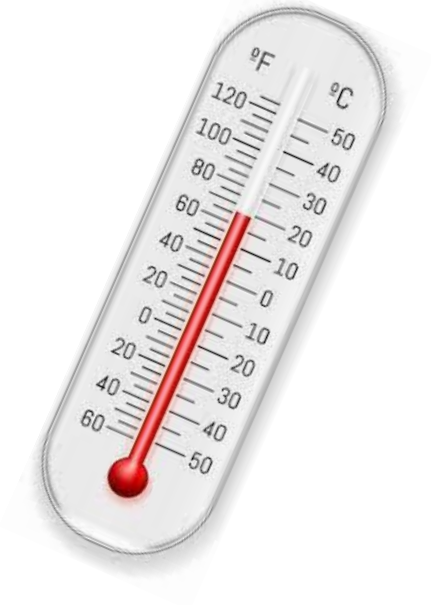
1 = Extremely Uncomfortable

2 = Uncomfortable

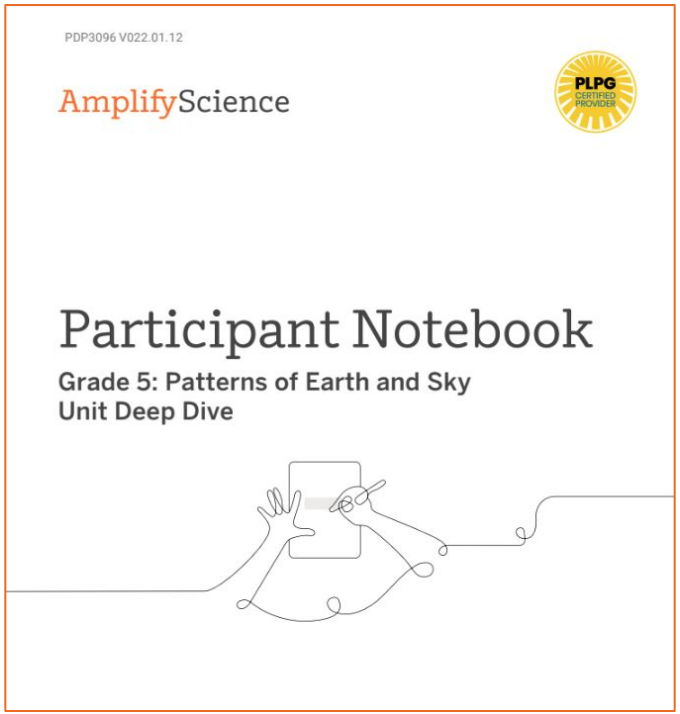
3 = Mild

4 = Comfortable

5 = Extremely Comfortable



Participant Notebook



Hardcopy and digital

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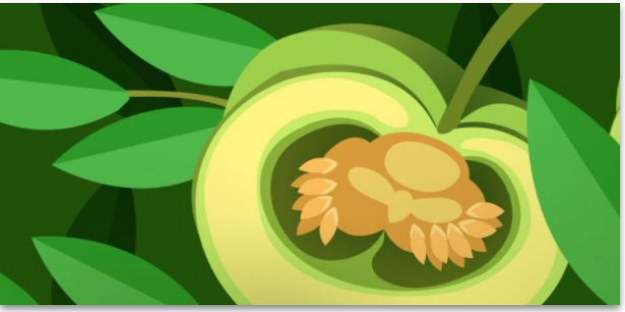
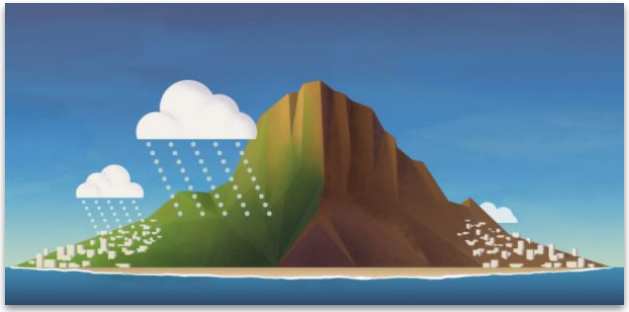
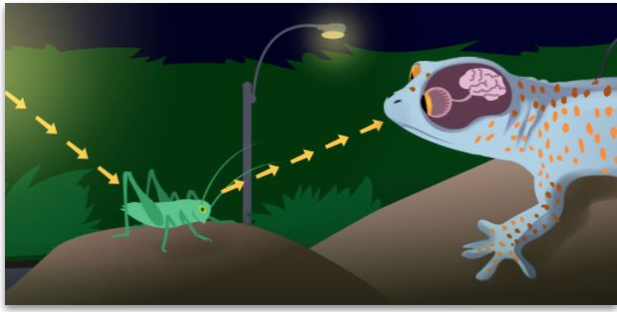




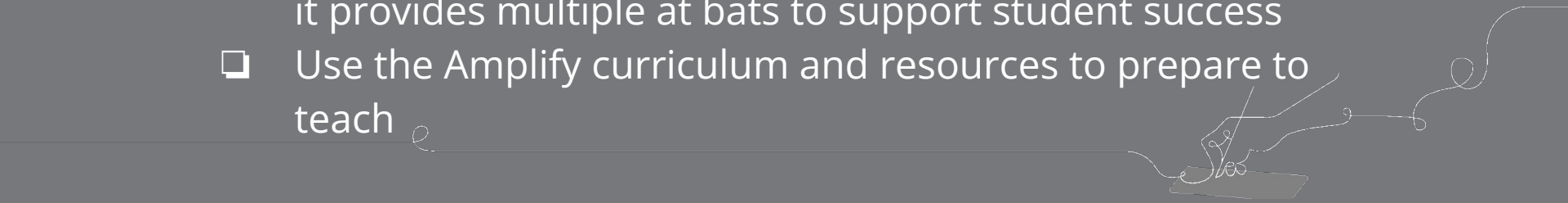
Plan for the day

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

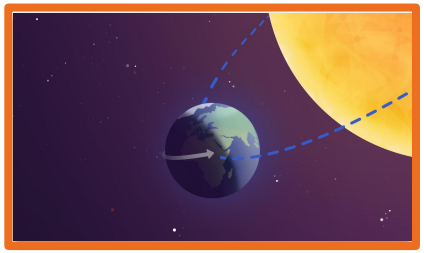
Goals for the day:

By the end of the day, you will:

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



Year at a Glance: Grade 5

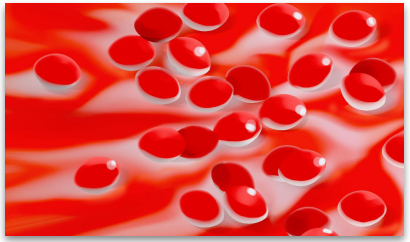


Patterns of Earth and Sky

Domain: Earth and Space Science

Unit type: Investigation

Student role: Astronomers

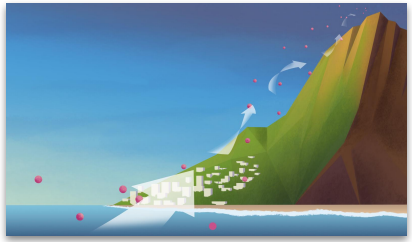


Modeling Matter

Domain: Physical Science

Unit type: Modeling

Student role: Food scientists



The Earth System

Domain: Earth and Space Science

Unit type: Engineering Design

Student role: Water resource engineers

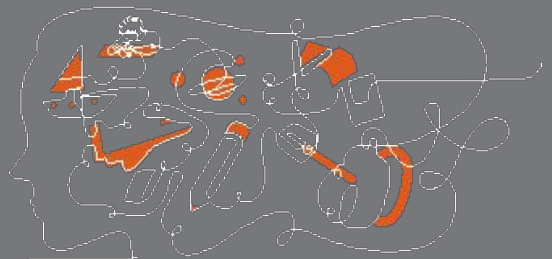
Ecosystem Restoration

Domain: Life Science

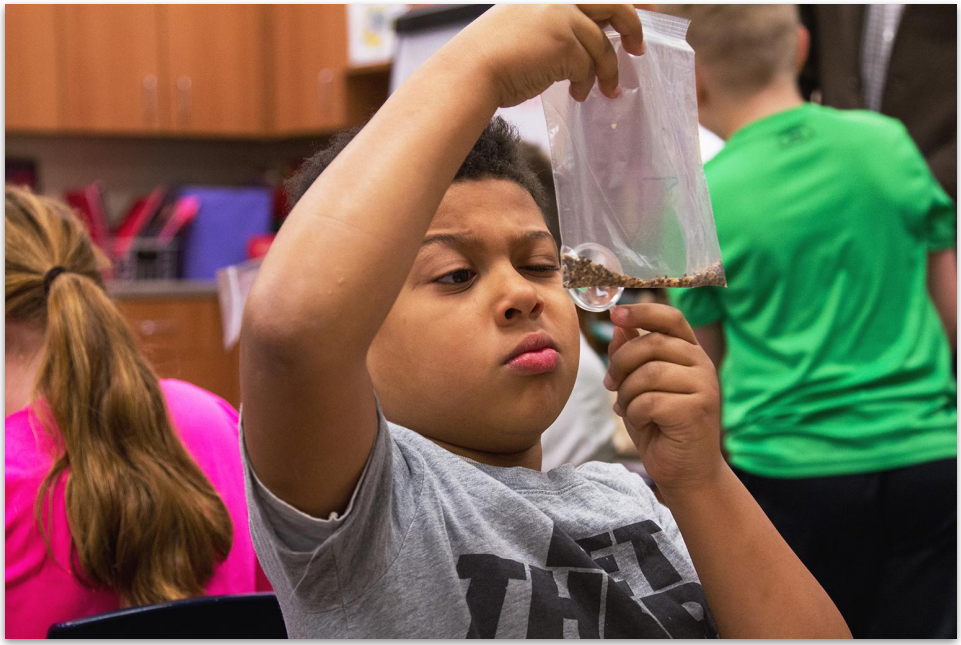
Unit type: Argumentation

Student role: Ecologists

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

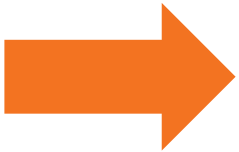
Topic-based	Phenomenon-based
Ocean habitats	A sea turtle can survive in an ocean habitat where sharks live

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.

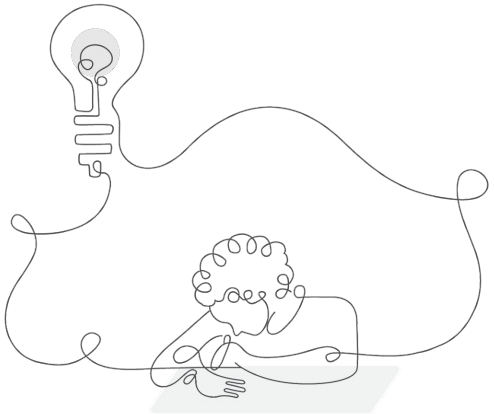
Figuring out phenomena like a scientist.

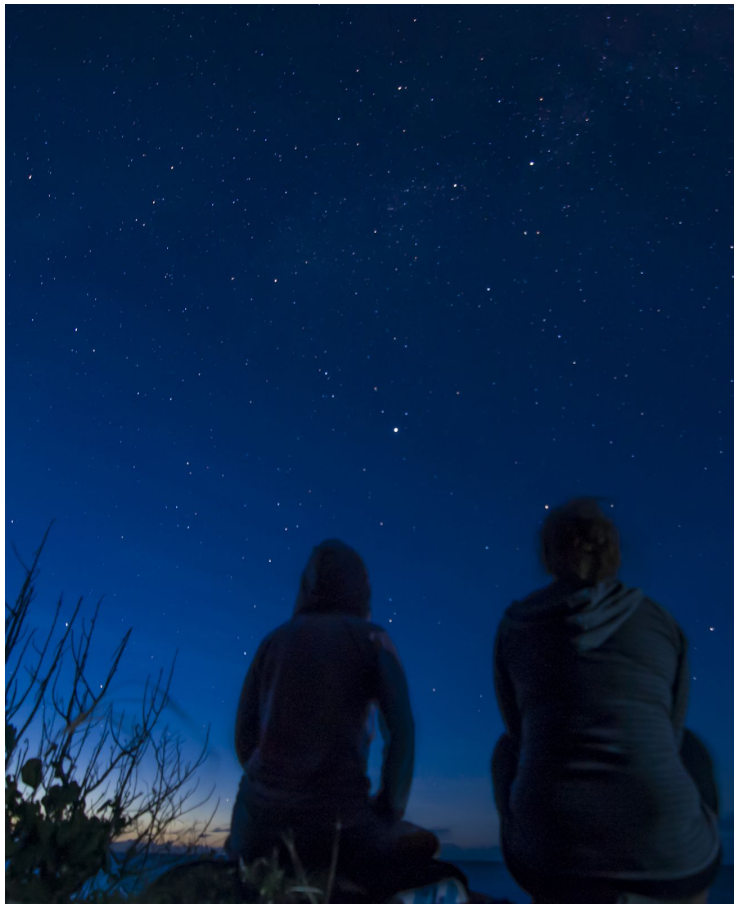
Previewing the unit

Introducing the phenomenon

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

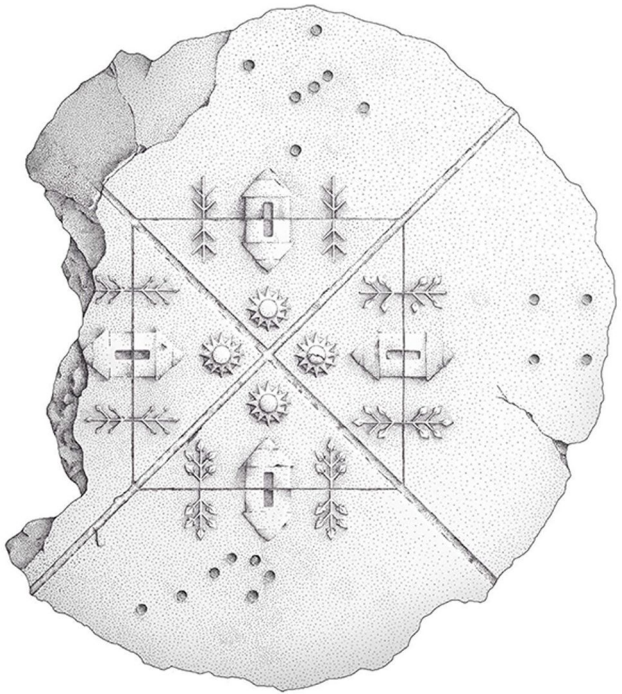
Let's look at the phenomenon, or observable event, students will figure out in your unit.





In this unit, we're going to take a closer look at the stars and use what we observe to help us solve a mystery.

You will take on the role of **astronomers** as you try to solve a mystery by **investigating things we see in the sky as we're standing on Earth.**



Archaeologists uncovered this artifact.

What do you notice or observe about it?

To: Student Astronomers
From: Dr. Sabri, Museum of Archaeology
Subject: Mysterious Artifact

Our museum's field research team located an artifact, and we think it might be more than 1,000 years old. We believe it shows something about the sun and the stars, although one section is missing. Would you be able to help us figure out what the missing section looked like?

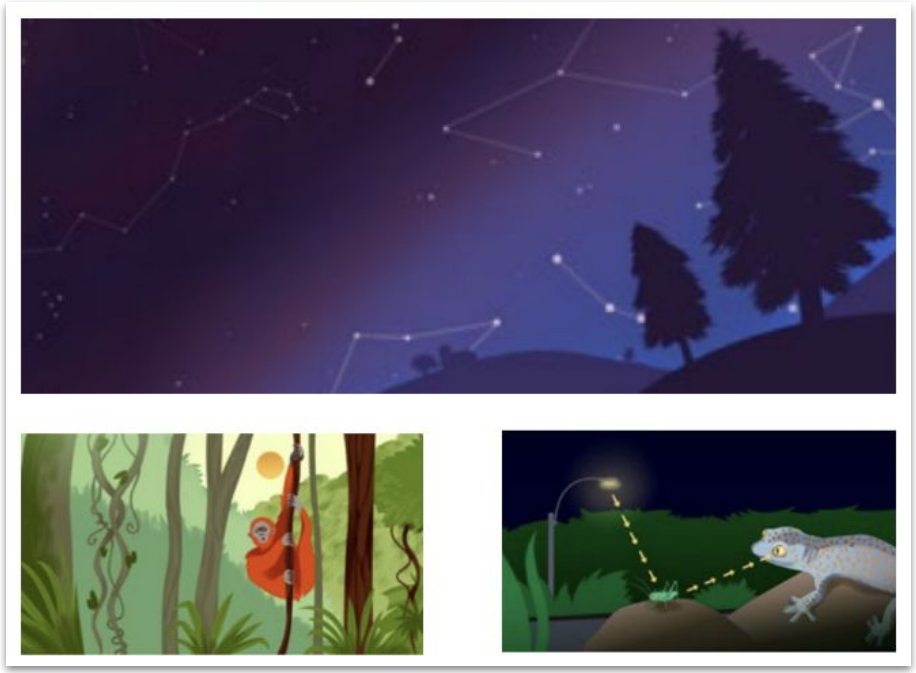
We want to put the artifact on display at the musuem, and it would be nice to show people how it might have looked before it was broken.

A map is attached to show you where the artifact was found, in case that is helpful.

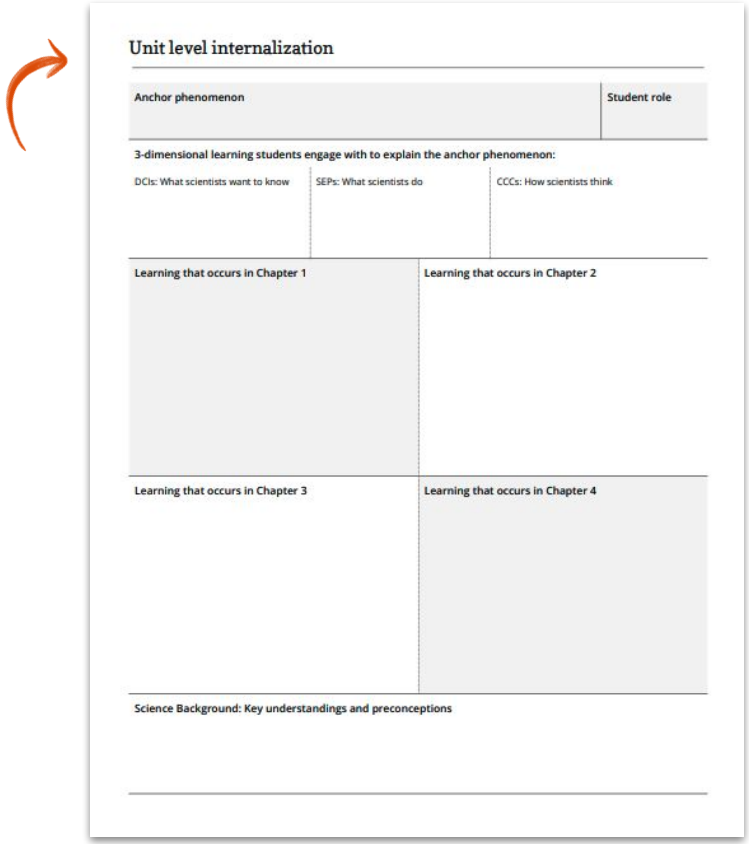
Amplify Science

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:

DCIs: 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

Patterns of Earth and Sky

Problem: Archaeologists discovered part of an ancient artifact that depicts the sun and other stars. How can we figure out what would have appeared on the missing piece?

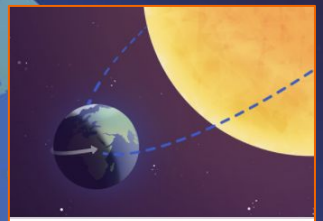
Role: Astronomers

What: Students help a team of archaeologists at the fictional Museum of Archaeology. They are asked to figure out and explain the significance of the illustrations on a recently discovered thousand-year-old artifact with a missing piece

Coherent Storylines

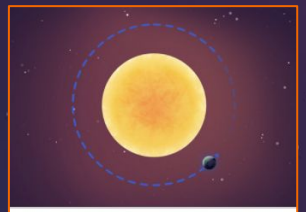
Chapter 1: Why don't we see a lot of stars in the daytime?

7 Lessons



Chapter 2: Why is the sun up sometimes, but not other times?

6 Lessons



Chapter 3: Why do we see different stars at different times of year?

6 Lessons

Chapter 4: How can we investigate why we see different stars on different nights?

3 Lessons

AmplifyScience

Navigating to the Unit Map

Pg. 5,6

22 Lessons

Patterns of Earth and

Printable Teacher Guide

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

Unit Overview

What's in This Unit?

Humans have been observing the
Paleolithic Era. Records that demo
and can be carved or built from st
patterns of movement of the Moo
millennia. Archaeoastronomers in

Read more

Chapters

Chapter 1: Why don't w

LESSON 1.1
Pre-Unit Assessment

LESSON 1.2
Earth and Stars in Space

- 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

Unit Map

Archaeologists discovered part of an ancient artifact that depicts the sun and other stars. How can we figure out what would have appeared on the missing piece?

Taking on the role of astronomers, students help a team of archaeologists at the fictional Museum of Archaeology figure out what the missing piece of a recently discovered artifact might have depicted. As they learn about the sun and other stars and the movement of Earth, students can explain what is shown on the artifact and what might be on the missing piece.

Chapter 1: Why don't we see a lot of stars in the daytime?

Students figure out: The stars are all around Earth in every direction. Because the sun is much closer to Earth than all other stars, it appears bigger and brighter. During daytime, the sun's brightness overwhelms the brightness of other stars, and that is why we can only see the sun during the daytime. This is why the artifact depicts the sky in different scenes: the sun in the sky is distinct from depictions showing all other stars in the sky.

How they figure it out: Through reading and investigating in the *Patterns of Earth and Sky* Simulation, students gather data about the size and distance of objects in space relative to Earth. Students create a physical model demonstrating the distances of various stars and the sun from Earth and conclude that it is the immense distance of Earth from other stars and the sun's proximity to Earth that creates the illusion of other stars being much smaller than the sun. By gathering additional evidence in text and photos and a video, students come to understand why they can't see other stars in the daytime.

Chapter 2: Why is the sun up sometimes, but not other times?

Students figure out: The sun is only up sometimes and not at other times because Earth spins once per day. Since gravity pulls us down toward Earth, we are carried with Earth as it spins. What we see up above us changes as we spin. When the side of Earth we are on faces the sun, the sun is up in the sky. When Earth spins to face away from the sun, the sun is not up, and we can see other stars. This is why each artifact panel shows a repeating pattern: the sun is in the sky, then other stars are in the sky, and so on.

How they figure it out: Through a series of observations in the Simulation, participation in a kinesthetic model, and video evidence, students investigate what causes the daily pattern of sun and stars that can be seen from Earth. Students read and model to investigate Earth's gravitational pull and conclude which way is *up*.

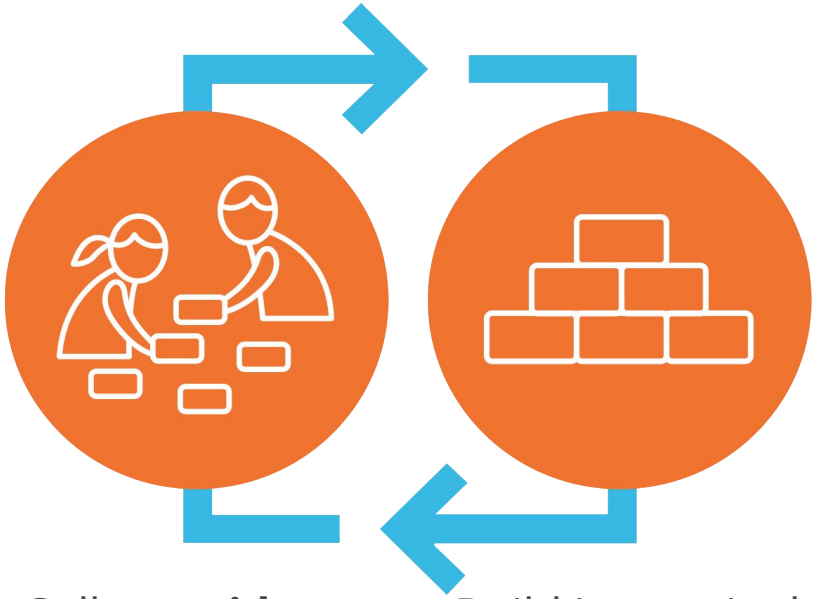
Chapter 3: Why do we see different stars at different times of year?

Students figure out: As Earth spins, it also orbits around the sun once a year. Since Earth is moving, this means that throughout the year, Earth is in different places in its path around the sun. Our view of the stars in the nighttime sky changes in a pattern that repeats each year because Earth is traveling along its orbital path. This is why the artifact shows different constellations in the different nighttime panels.

How they figure it out: Using the Simulation and a kinesthetic classroom model, students investigate what constellations can be seen over the course of a year and across multiple years. They carefully plan a systematic investigation with the Simulation and look for patterns in the data. Students read about Earth's orbit around the sun and apply their new ideas to the classroom model in order to understand the yearly pattern of star visibility.

Amplify Science Approach

How is it possible for a train to float?



Why does the train change from floating to falling?

Introduce a **phenomenon** and a related problem

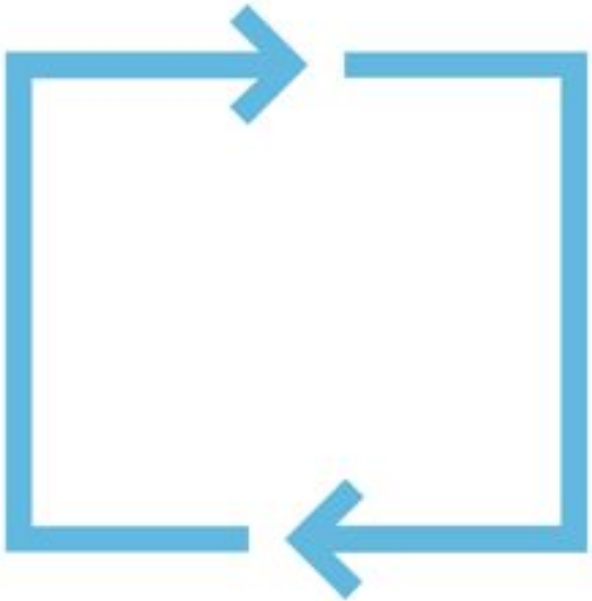
Collect **evidence** from multiple sources

Build increasingly complex **explanations**

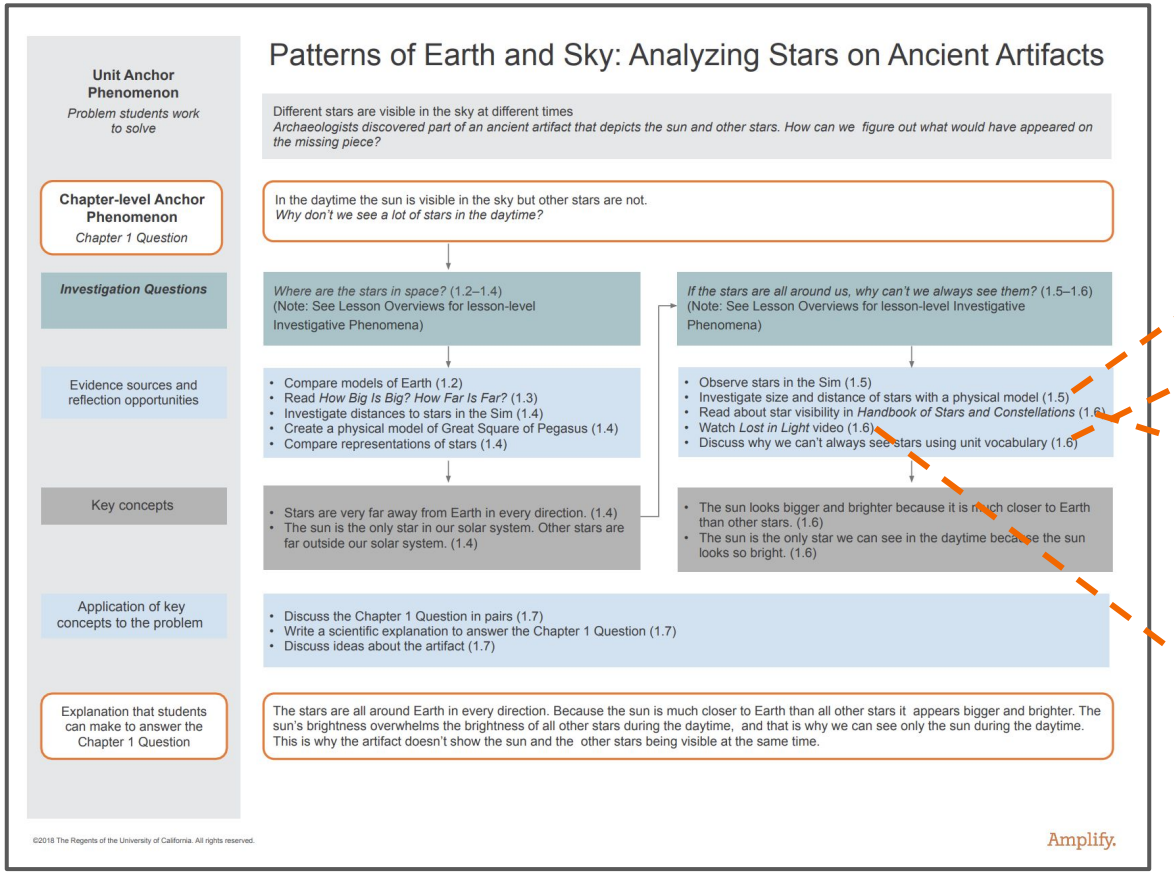
Apply knowledge to solve a different problem

Multimodal instruction

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



Do,
Talk,
Read,
Write,
Visualize


Patterns of Earth and Sky: Analyzing Stars on Ancient Artifacts
Unit Anchor Phenomenon
Problem students work to solve
Different stars are visible in the sky at different times
Archaeologists discovered part of an ancient artifact that depicts the sun and other stars. How can we figure out what would have appeared on the missing piece?
Chapter-level Anchor Phenomenon
Chapter 1 Question
In the daytime the sun is visible in the sky but other stars are not.
Why don't we see a lot of stars in the daytime?
Investigation Questions
Where are the stars in space? (1.2–1.4)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)
If the stars are all around us, why can't we always see them? (1.5–1.6)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)
Evidence sources and reflection opportunities
Compare models of Earth (1.2)
Read How Big Is Big? How Far Is Far? (1.3)
Investigate distances to stars in the Sim (1.4)
Create a physical model of Great Square of Pegasus (1.4)
Compare representations of stars (1.4)
Observe stars in the Sim (1.5)
Investigate size and distance of stars with a physical model (1.5)
Read about star visibility in Handbook of Stars and Constellations (1.6)
Watch Lost in Light video (1.6)
Discuss why we can't always see stars using unit vocabulary (1.6)
Key concepts
Stars are very far away from Earth in every direction. (1.4)
The sun is the only star in our solar system. Other stars are far outside our solar system. (1.4)
The sun looks bigger and brighter because it is much closer to Earth than other stars. (1.6)
The sun is the only star we can see in the daytime because the sun looks so bright. (1.6)
Application of key concepts to the problem
Discuss the Chapter 1 Question in pairs (1.7)
Write a scientific explanation to answer the Chapter 1 Question (1.7)
Discuss ideas about the artifact (1.7)
Explanation that students can make to answer the Chapter 1 Question
The stars are all around Earth in every direction. Because the sun is much closer to Earth than all other stars it appears bigger and brighter. The sun's brightness overwhelms the brightness of all other stars during the daytime, and that is why we can see only the sun during the daytime. This is why the artifact doesn't show the sun and the other stars being visible at the same time.
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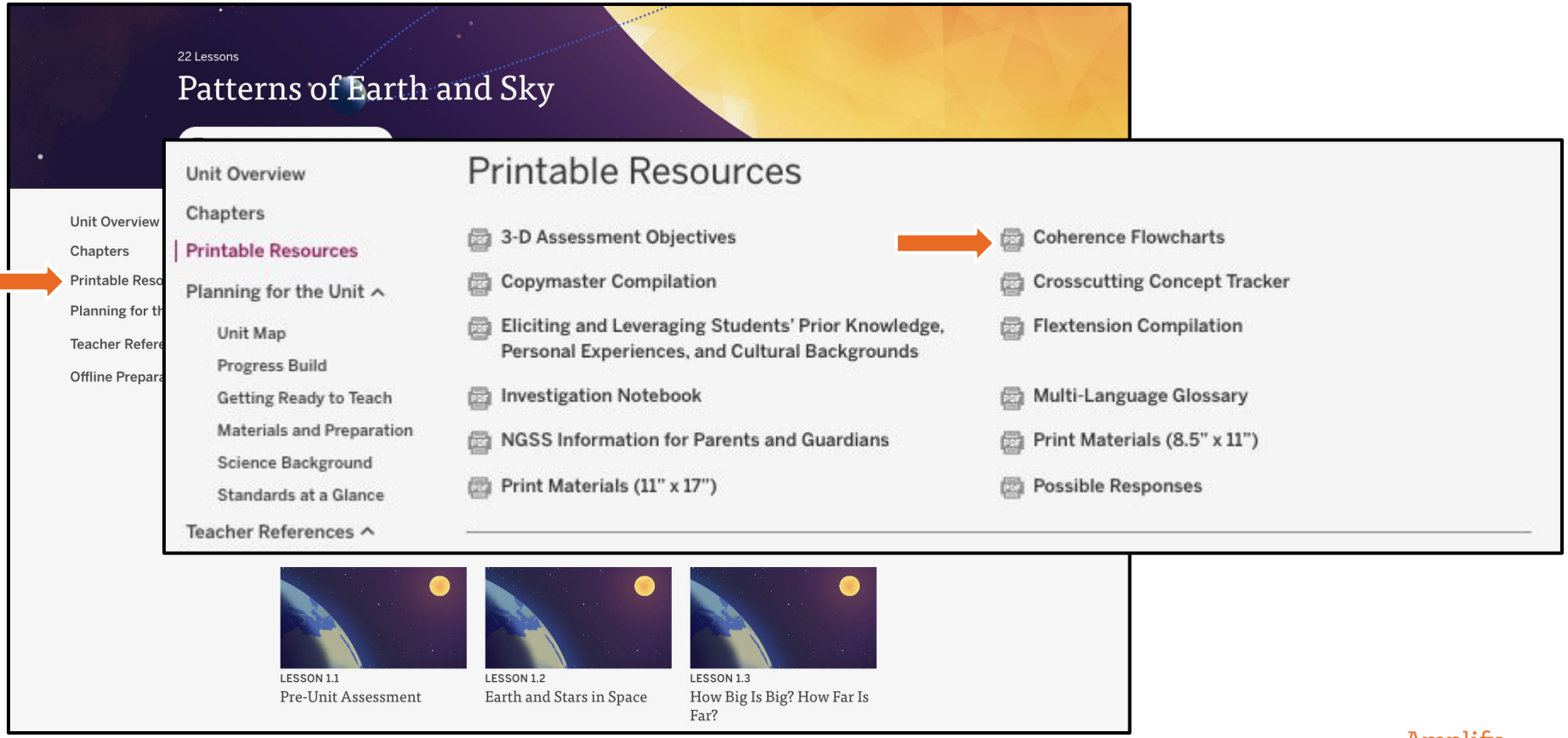
Amplify.
Do
Talk
Read
Write
Visualize

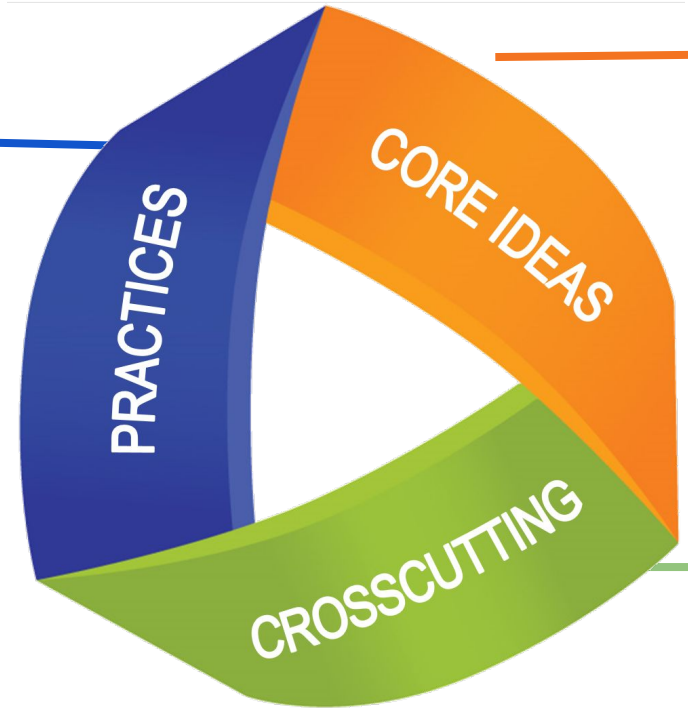
Navigating to the Coherence Flowchart



Patterns of Earth and Sky & NGSS

Using 3-D teaching and learning for figuring out phenomena

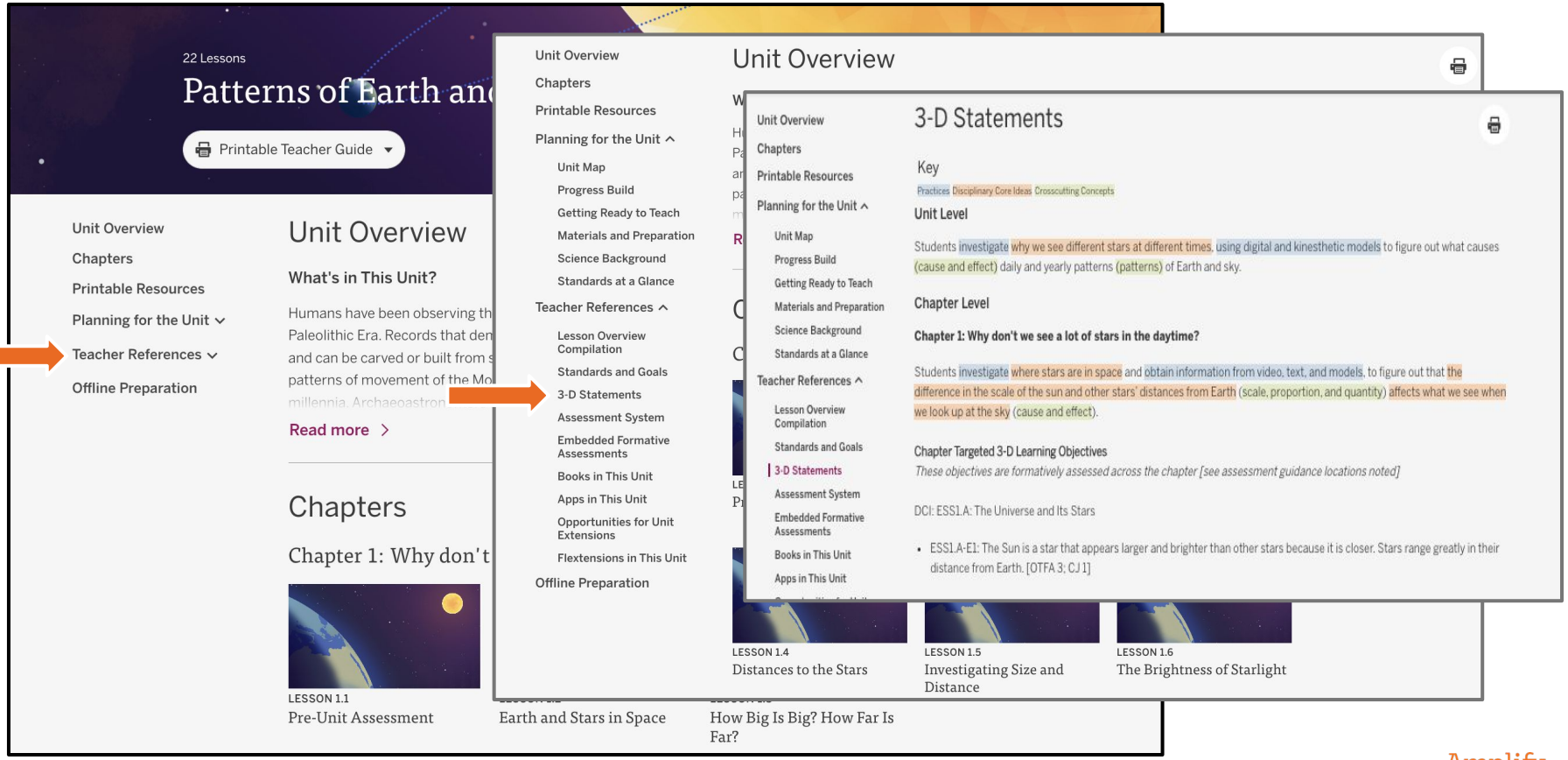
What scientists do
Science and Engineering Practices



What scientists want to know
Disciplinary Core Ideas

How scientists think
Crosscutting Concepts

Navigating to the 3-D Statements



Disciplinary Core Ideas: Patterns of Earth and Sky

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

Science and Engineering Practices Patterns of Earth and Sky

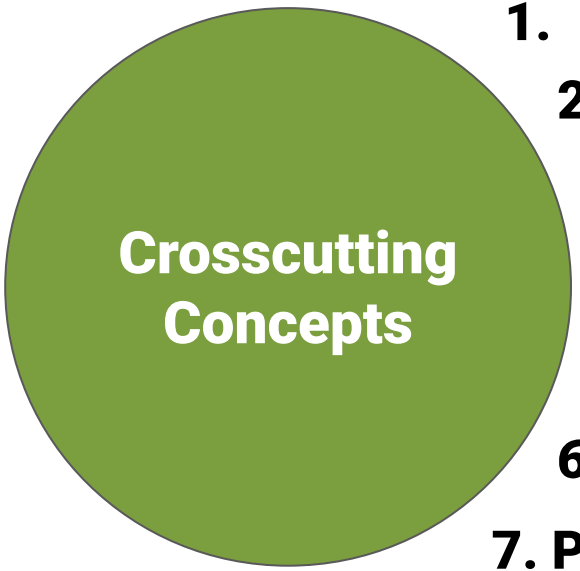
inquiry

math

language

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 ✔

Crosscutting Concepts: Patterns of Earth and Sky



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 ✔

Patterns of Earth and Sky: 3D Statements

3-D Statements

Key

Practices Disciplinary Core Ideas Crosscutting Concepts

Unit Level

Students investigate why we see different stars at different times, using digital and kinesthetic models to figure out what causes (cause and effect) daily and yearly patterns (patterns) of Earth and sky.

Navigating to the Materials and Preparation

22 Lessons

Patterns of Earth and

Printable Teacher Guide

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

Unit Overvie

What's in This Unit?

Humans have been observing th
Paleolithic Era. Records that dem
and can be carved or built from s
patterns of movement of the Mo
millennia. Archaeoastronomers i

Read more

Chapters

Chapter 1: Why don't

LESSON 1.1
Pre-Unit Assessment

LESSON 1.2
Earth and Stars in Spa

- Unit Overview
- Chapters
- Printable Resource
- Planning for the Un
- Unit Map
- Progress Build
- Getting Ready to
- Materials and Pre
- Science Backgrou
- Standards at a Gl
- Teacher Reference
- Lesson Overview Compilation
- Standards and G
- 3-D Statements
- Assessment Syst
- Embedded Forma Assessments
- Books in This Uni
- Apps in This Unit
- Opportunities for Extensions
- Flextensions in T
- Offline Preparation

Unit Overview

Materials and Preparation

Materials at a Glance

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

Items Provided in the *Patterns of Earth and Sky* Kit

This is a complete list of all the kit-provided materials needed to present the entire *Patterns of Earth*
Ancient Artifacts unit twice for a class of 36 students. For reordering information, call Amplify at 1 (8

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

Quantity needed	Manipulatives	U
1	ball, 15 cm diameter	1
18	dots, sticky, blue*	2
18	dots, sticky, green*	2
18	dots, sticky, red*	2
18	dots, sticky, yellow*	2
9	globes, inflatable	1
1	map, world	1
24	paper, white, sheets (11" x 17")*	3
5	table tennis ball	1

*consumable item

Quantity in kit	Print materials	U
1	*Patterns of Earth and Sky: Analyzing Ancient Artifacts* Investigation Notebook	t
9 sets	Word Relationships Cards: Set 1 (7 cards/set)	1
9 sets	Word Relationships Cards: Set 2 (7 cards/set)	2
18 sets	Explanation Cards (2 cards/set)	2

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

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

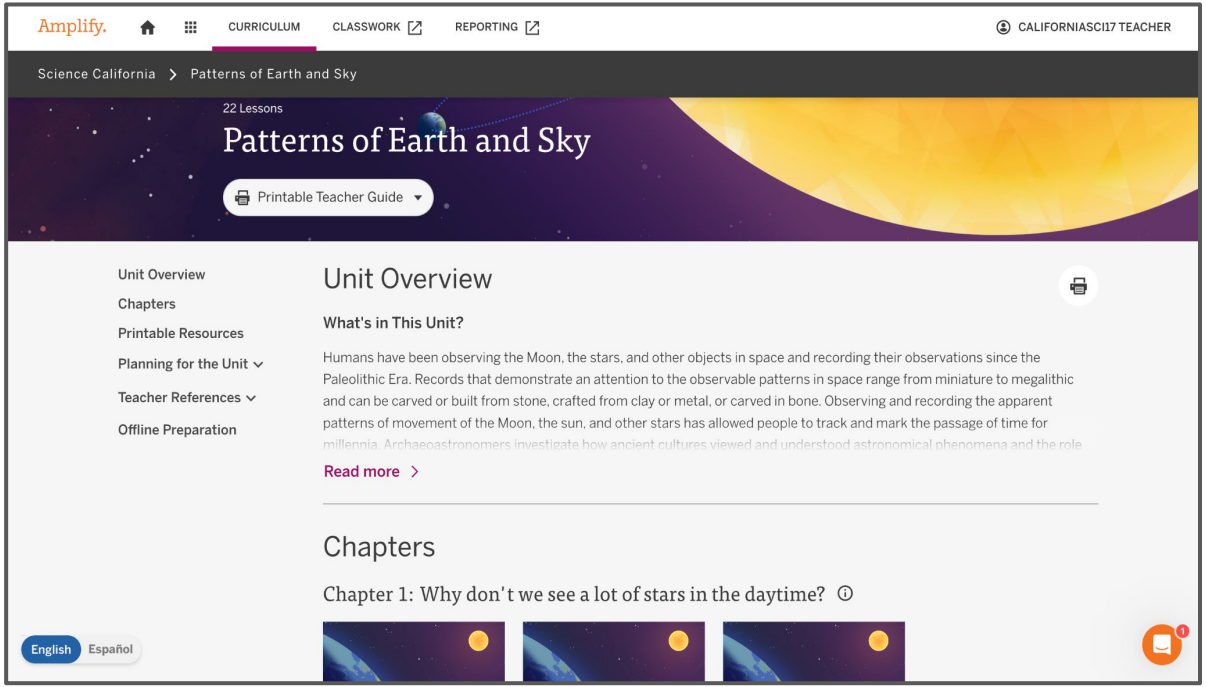
Asterisks in the tables denote that preparations for those lessons have self-contained tasks that are easily handed off to adult volunteers. Doing so can reduce or eliminate prep time in those instances. Plan ahead by inviting adult volunteers to come in a few days before these lessons. **Note:** Amount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

Chapter 1

Lesson	Title	Preparation time frame (in minutes)
1.1	Pre-Unit Assessment: Students' Initial Explanations	45: Preview unit overview documents. Make copies of Pre-Unit Writing prompt.* Optional: Make copies of the Investigation Notebook rather than purchase additional copies.* Create Partner Reading Guidelines chart.
1.2	Earth and Stars in Space	45: Inflate globe. Optional: Make copies of Chapter 1 Home Investigation copymaster.* Prepare students' digital devices.* **Students use digital devices in this lesson.**
1.3	How Big Is Big? How Far Is Far?	15: Preview book and modeling instructions for visualizing strategy.
1.4	Distances to the Stars	20: Prepare for classroom model and Simulation activities. **Students use digital devices in this lesson.**
1.5	Investigating Size and Distance	15: Prepare for physical model and Simulation activities. **Students use digital devices in this lesson.**
1.6	The Brightness of Starlight	10
1.7	Explaining When We See Stars	10

Explore or review the key planning documents

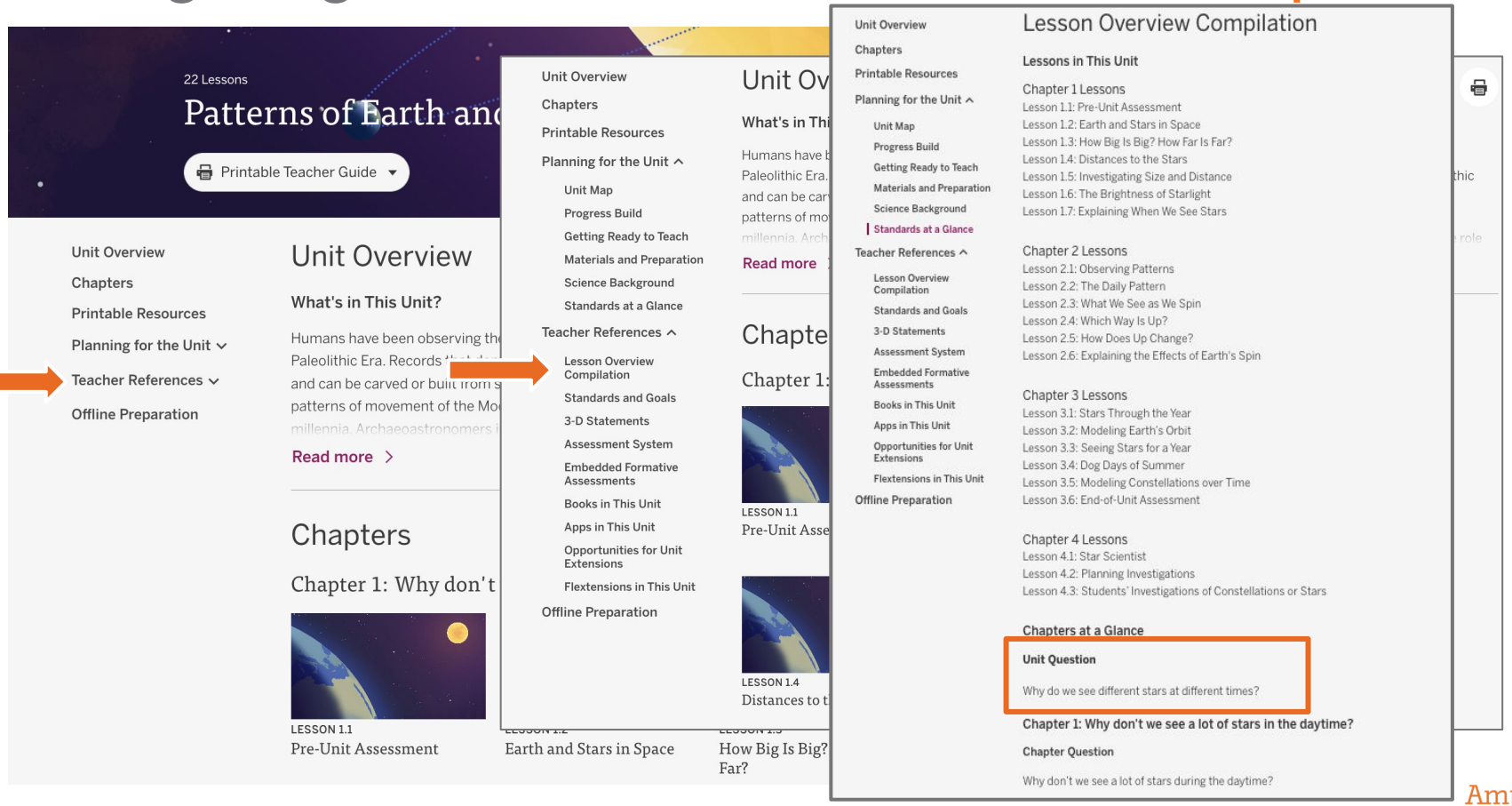
Spend a few more minutes exploring or reviewing the documents on the Unit Landing Page.



Explaining the phenomenon: Science Concepts

Unit Question: Why do we see different stars at different times?

Navigating to the Lesson Overview Compilation



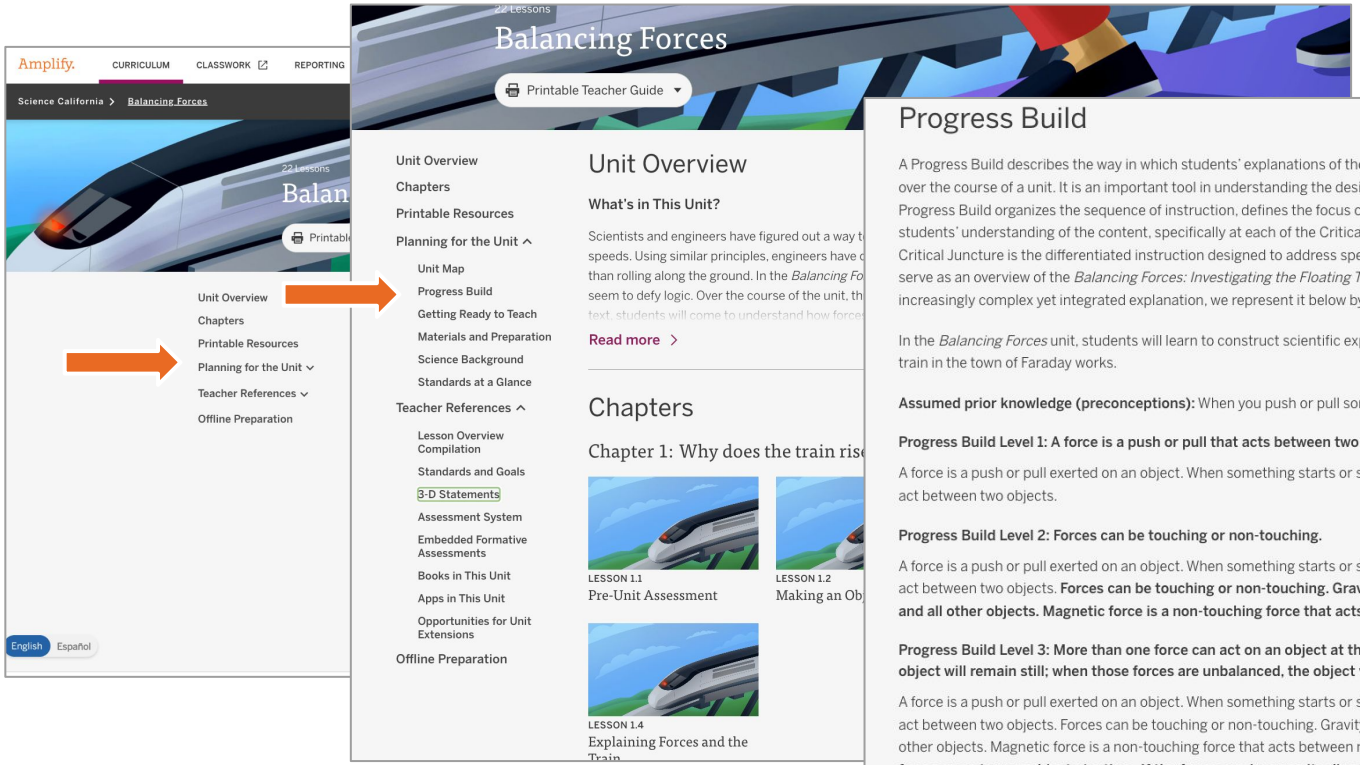
Explaining the phenomenon: Science Concepts

Unit Question: Why do we see different stars at different times?

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

Navigating to the Progress Build

Pg. 7,8



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 is the differentiated instruction designed to address specific gaps in students' understanding. This document will serve as an overview of the *Balancing Forces: Investigating the Floating Train* 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 *Balancing Forces* unit, students will learn to construct scientific explanations of a central phenomenon: how the floating train in the town of Faraday works.

Assumed prior knowledge (preconceptions): When you push or pull something, it starts moving.

Progress Build Level 1: A force is a push or pull that acts between two objects.

A force is a push or pull exerted on an object. When something starts or stops moving, that is evidence of a force. Forces always act between two objects.

Progress Build Level 2: Forces can be touching or non-touching.

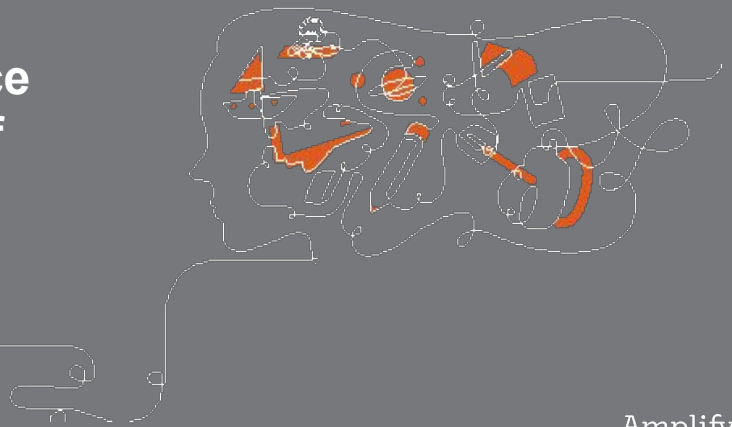
A force is a push or pull exerted on an object. When something starts or stops moving, that is evidence of a force. Forces always act between two objects. **Forces can be touching or non-touching. Gravity is a non-touching force that acts between Earth and all other objects. Magnetic force is a non-touching force that acts between magnets and some other metal objects.**

Progress Build Level 3: More than one force can act on an object at the same time. When those forces are balanced, a still object will remain still; when those forces are unbalanced, the object will start to move.

A force is a push or pull exerted on an object. When something starts or stops moving, that is evidence of a force. Forces always act between two objects. Forces can be touching or non-touching. Gravity is a non-touching force that acts between Earth and all other objects. Magnetic force is a non-touching force that acts between magnets and some other metal objects. **More than one force can act on an object at a time. If the forces are in opposite directions and of the same strength, the forces are balanced, and a nonmoving object will not start to move. If the forces are in opposite directions and are not of the same strength, the forces are unbalanced, and the object will move in the direction of the stronger force.**

Progress Build

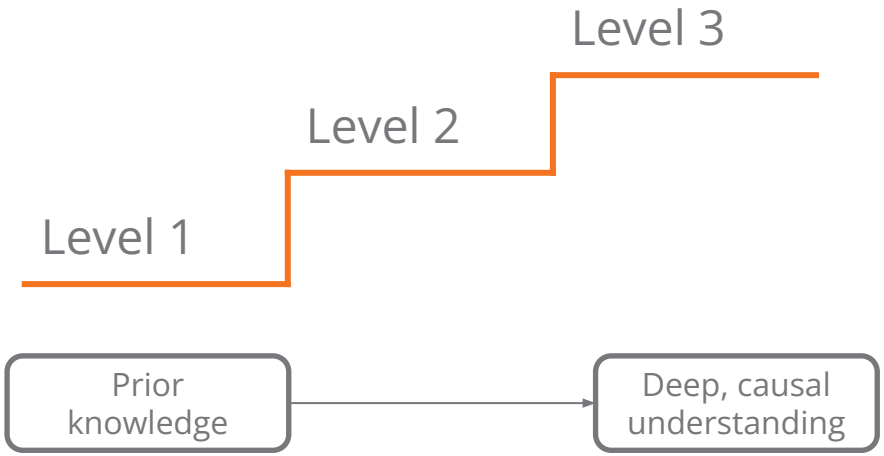
A Progress Build describes the way in which students' explanations of the central phenomenon should develop and deepen over the course of a unit. It is an important tool in understanding the design of the unit and in supporting students' learning. **A Progress Build organizes the sequence of instruction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

Patterns of Earth and Sky

Assumed prior knowledge (preconceptions): They are likely to know the sun is up during the daytime and stars are up during the nighttime. Students may understand that Earth is round and that Earth moves.

Level 1

The sun looks bigger and brighter than all other stars because it is much closer to Earth than all other stars.

Level 2

As Earth spins, what we see in the sky changes throughout the day.

Level 3

As Earth orbits the sun, the stars we see in the night sky change throughout the year.

Unpacking the Progress Build

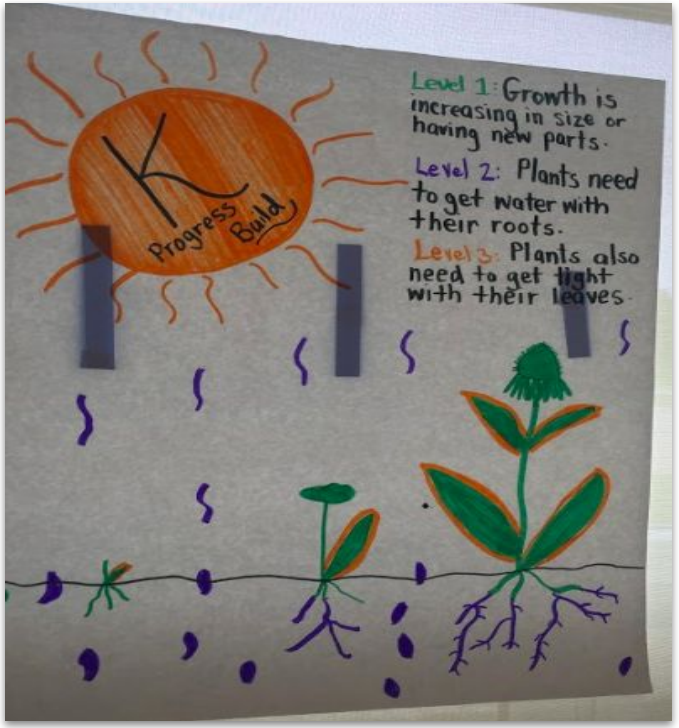
Group Work time

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

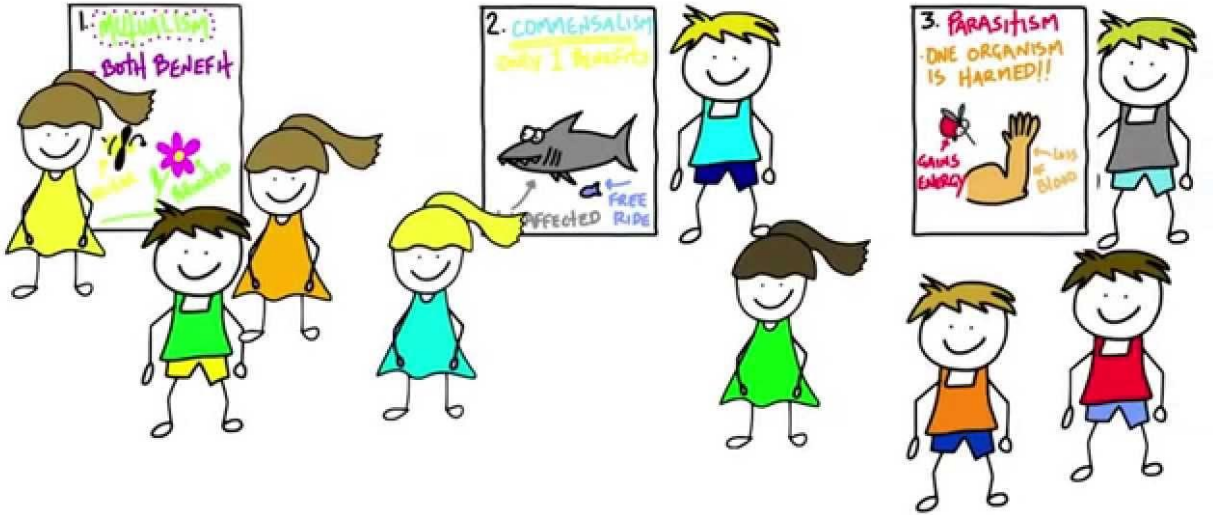
Group work time

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

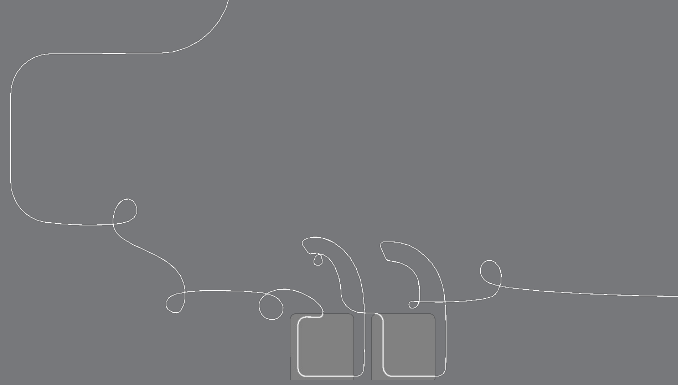


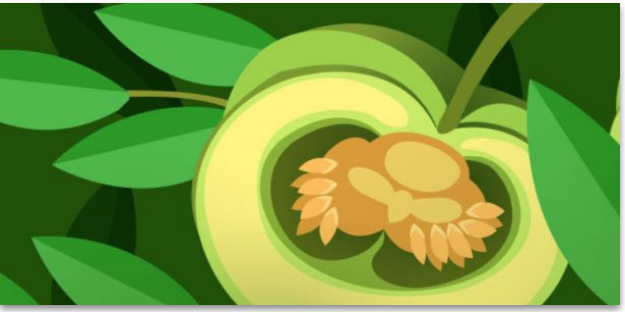
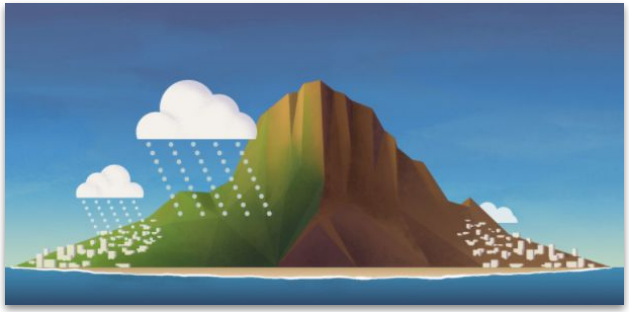
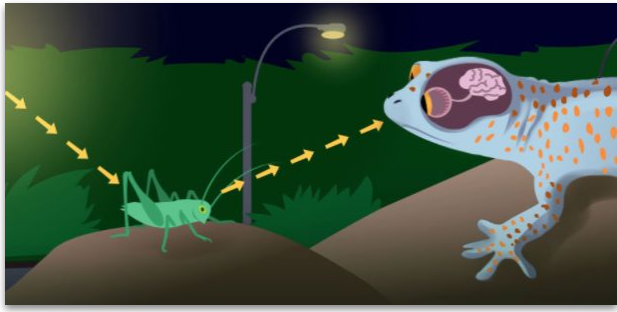
Progress Build analysis

Presentations



Questions?



Plan for the day

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

Patterns of Earth and Sky: Chapter 1

Chapters

Chapter 1: Why don't we see a lot of stars in the daytime?

LESSON 1.1
Pre-Unit Assessment

LESSON 1.2
Earth and Stars in Space

LESSON 1.3
How Big Is Big? How Far Is Far?

LESSON 1.4
Distances to the Stars

LESSON 1.5
Investigating Size and Distance

LESSON 1.6
The Brightness of Starlight

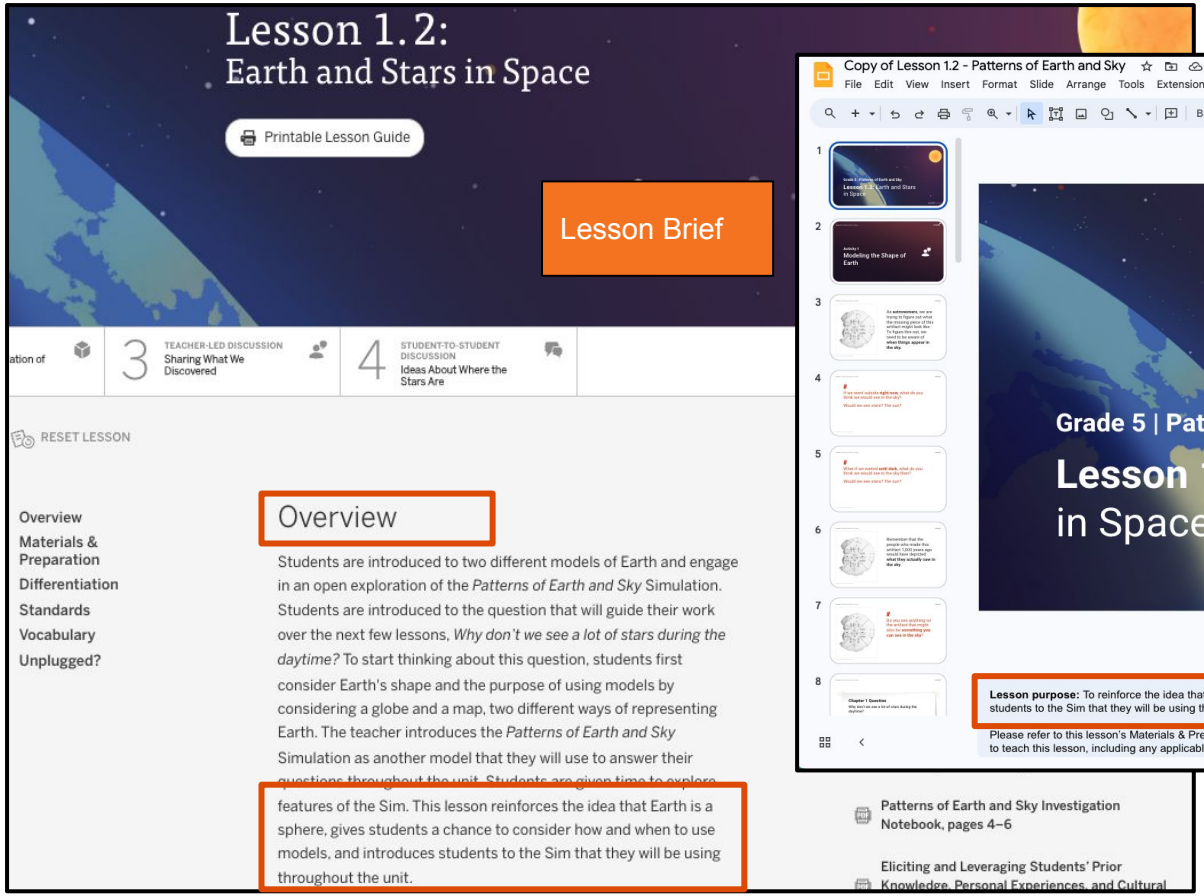
LESSON 1.7
Explaining When We See Stars

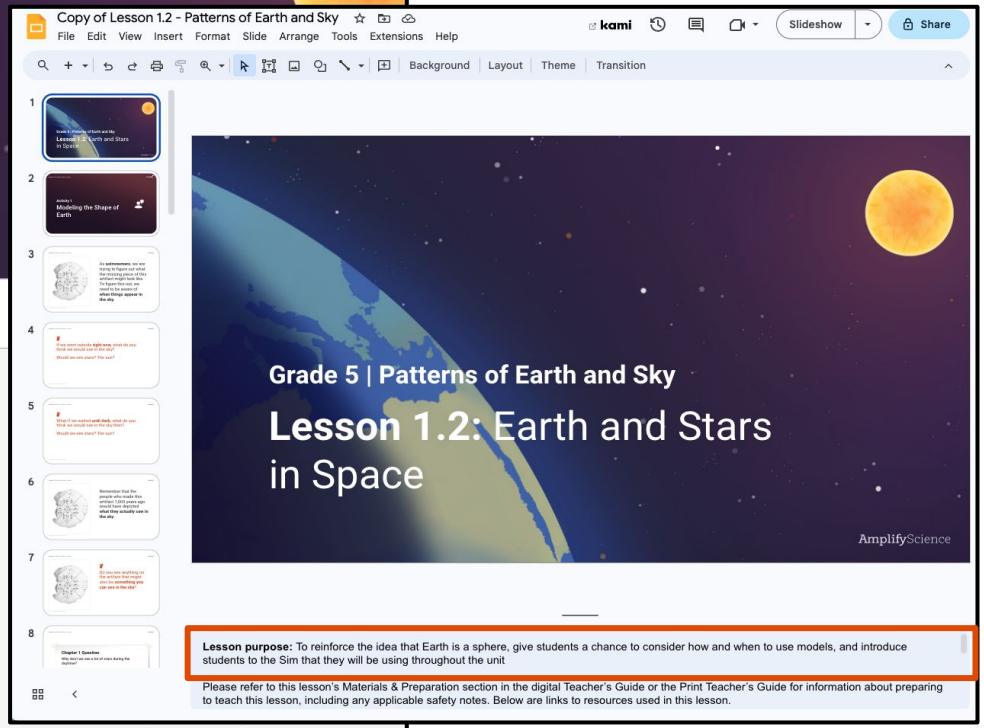
Digging in to chapter 1

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





Classroom Slides

Amplify.

Modalities

Lesson at a Glance

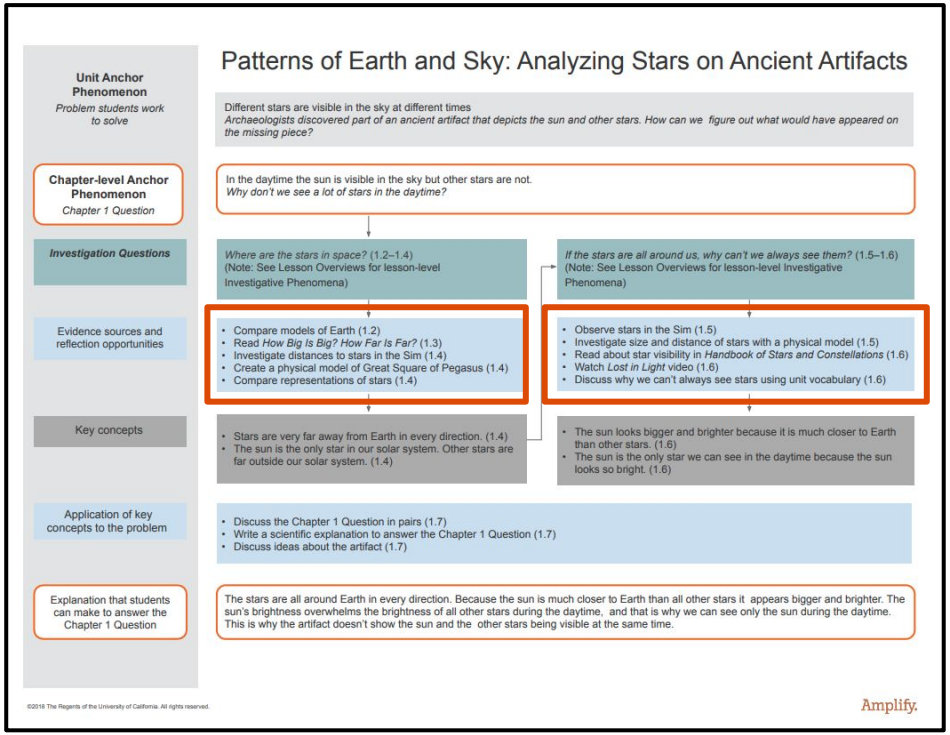
1: Modeling the Shape of Earth (20 min.)
Students initiate the study of the Chapter 1 Question: *Why don't we see a lot of stars during the daytime?* by exploring two models of Earth. They discuss which is more accurate in terms of the planet's overall shape and confirm that Earth is a sphere. This activity includes an On-the-Fly Assessment to informally assess students' understanding that the shape of Earth is a sphere.

2: Exploring a Simulation of Earth and Sky (20 min.)
Students explore the *Patterns of Earth and Sky* Simulation. In this activity, students focus on how the Sim works and aspects of space that it represents. Providing this introductory time for exploring the Sim prepares students to work thoughtfully in later Sim investigations.

3: Sharing What We Discovered (10 min.)
The class spends time going over the Sim together to clarify the different views and features. They share initial ideas, discoveries, and questions brought about by their exploration of the Sim.

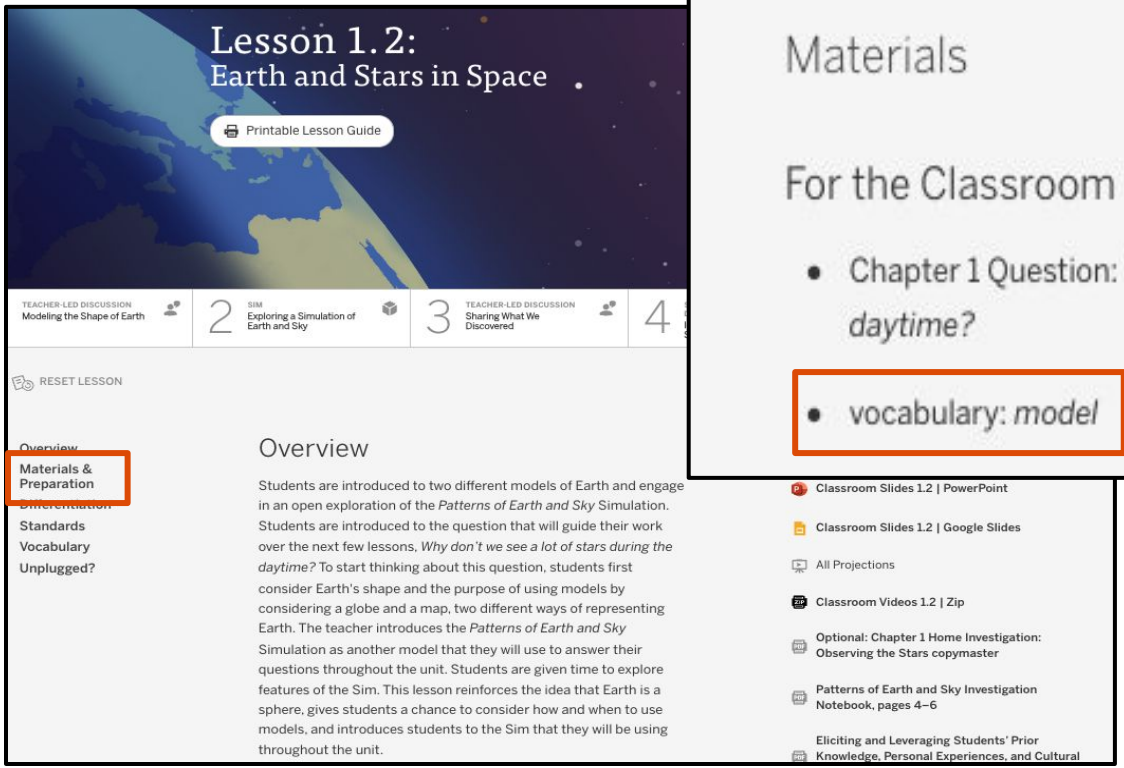
4: Ideas About Where the Stars Are (10 min.)
In their first experience with the Think-Write-Pair-Share routine, students share their initial ideas about the Investigation Question: *Where are the stars in space?*

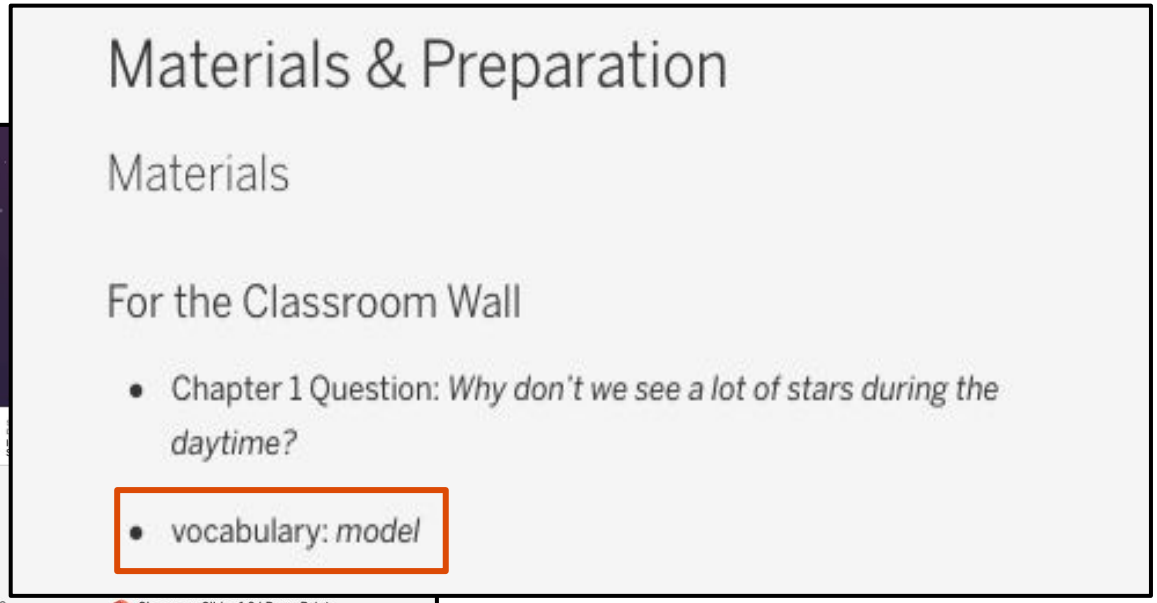
The Lesson Brief



Coherence Flowchart

Vocabulary

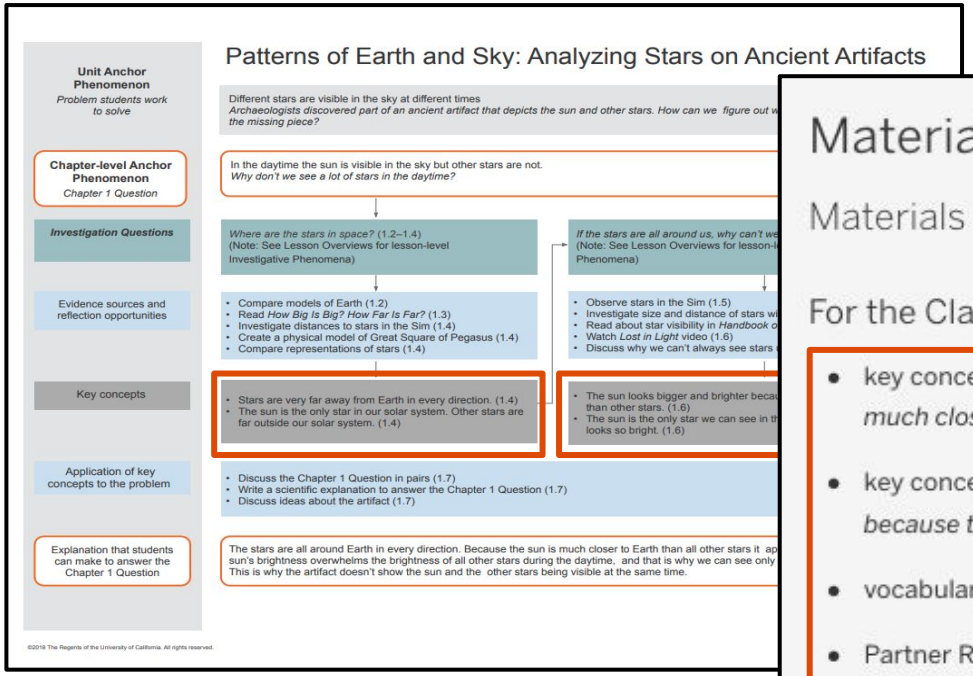


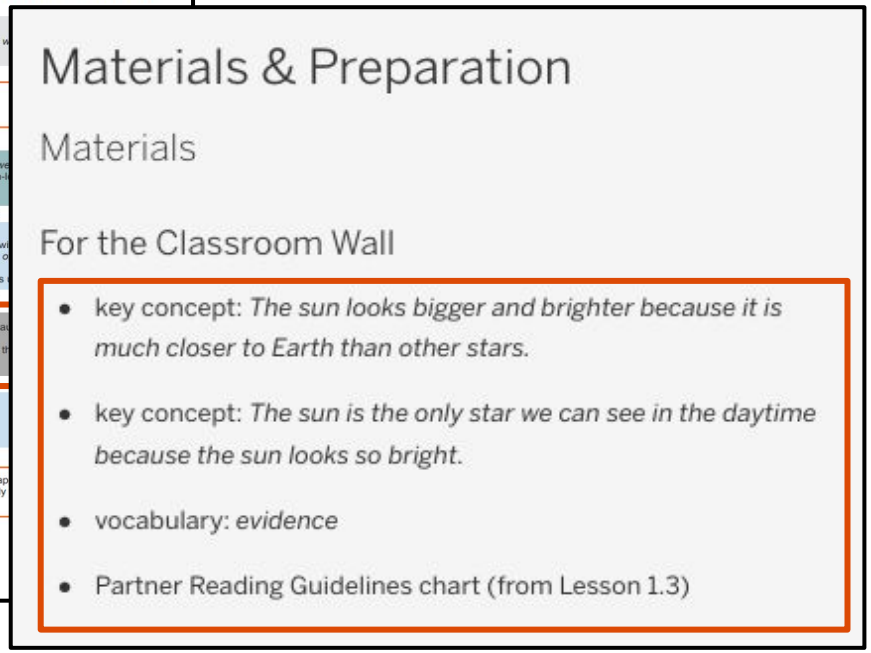


Lesson Brief:

Amplify.

Key Concepts





Coherence Flowchart

Materials and Preparation

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
    c. Vocabulary introduced
    d. Key Concepts introduced

Presentations

Chapters

Chapter 1: Why don't we see a lot of stars in the daytime?

LESSON 1.1
Pre-Unit Assessment

LESSON 1.2
Earth and Stars in Space

LESSON 1.3
How Big Is Big? How Far Is Far?

LESSON 1.4
Distances to the Stars

LESSON 1.5
Investigating Size and Distance

LESSON 1.6
The Brightness of Starlight

LESSON 1.7
Explaining When We See Stars

Patterns of Earth and Sky: Analyzing Stars on Ancient Artifacts

Unit Anchor Phenomenon
Problem students work to solve

Different stars are visible in the sky at different times
Archaeologists discovered part of an ancient artifact that depicts the sun and other stars. How can we figure out what would have appeared on the missing piece?

Chapter-level Anchor Phenomenon
Chapter 1 Question

In the daytime the sun is visible in the sky but other stars are not.
Why don't we see a lot of stars in the daytime?

Investigation Questions

Where are the stars in space? (1.2–1.4)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

If the stars are all around us, why can't we always see them? (1.5–1.6)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

Evidence sources and reflection opportunities

- Compare models of Earth (1.2)
- Read *How Big Is Big? How Far Is Far?* (1.3)
- Investigate distances to stars in the Sim (1.4)
- Create a physical model of Great Square of Pegasus (1.4)
- Compare representations of stars (1.4)

- Observe stars in the Sim (1.5)
- Investigate size and distance of stars with a physical model (1.5)
- Read about star visibility in *Handbook of Stars and Constellations* (1.6)
- Watch *Lost in Light* video (1.6)
- Discuss why we can't always see stars using unit vocabulary (1.6)

Key concepts

- Stars are very far away from Earth in every direction. (1.4)
- The sun is the only star in our solar system. Other stars are far outside our solar system. (1.4)

- The sun looks bigger and brighter because it is much closer to Earth than other stars. (1.6)
- The sun is the only star we can see in the daytime because the sun looks so bright. (1.6)

Application of key concepts to the problem

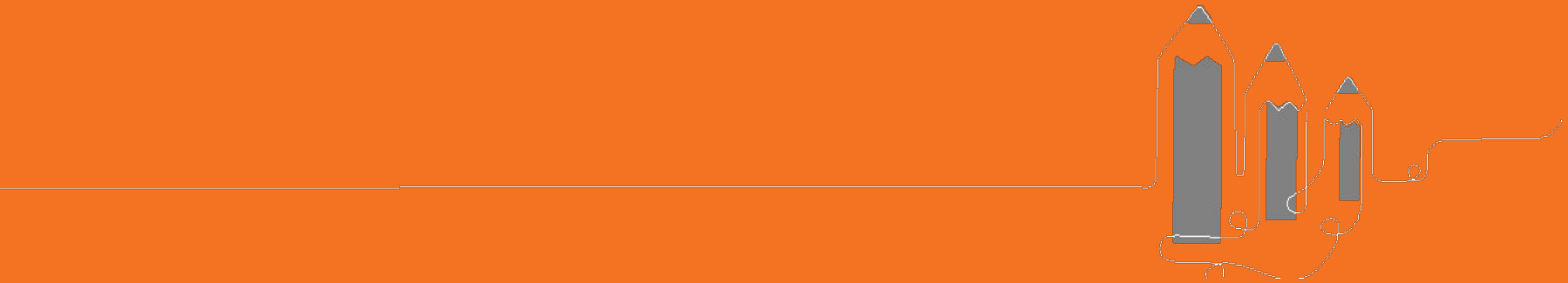
- Discuss the Chapter 1 Question in pairs (1.7)
- Write a scientific explanation to answer the Chapter 1 Question (1.7)
- Discuss ideas about the artifact (1.7)

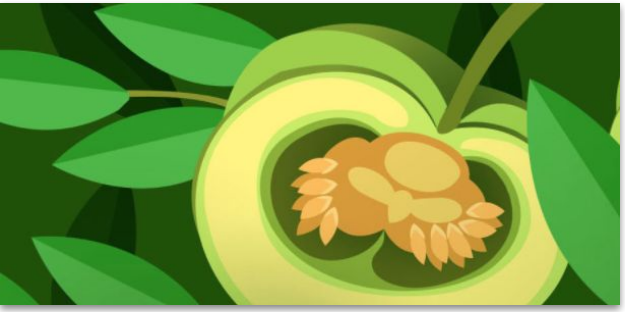
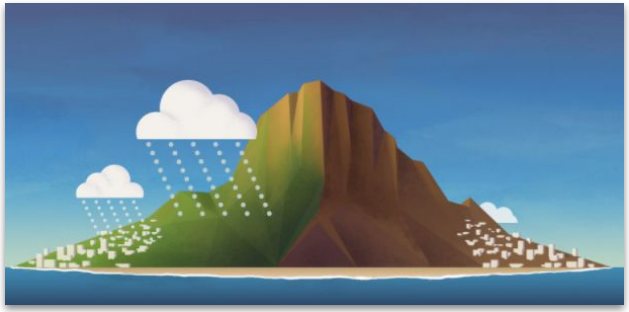
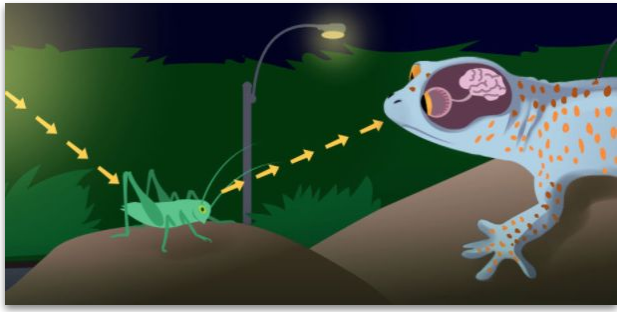
Explanation that students can make to answer the Chapter 1 Question

The stars are all around Earth in every direction. Because the sun is much closer to Earth than all other stars it appears bigger and brighter. The sun's brightness overwhelms the brightness of all other stars during the daytime, and that is why we can see only the sun during the daytime. This is why the artifact doesn't show the sun and the other stars being visible at the same time.

Amplify.

Break



Plan for the day

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

Patterns of Earth and Sky: Chapter 2

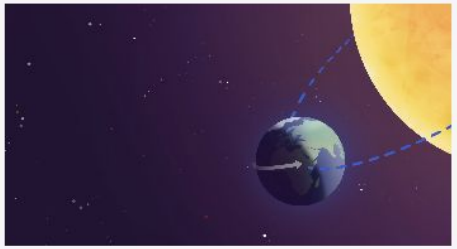
Chapter 2: Why is the sun up sometimes, but not other times?

LESSON 2.1
Observing Patterns

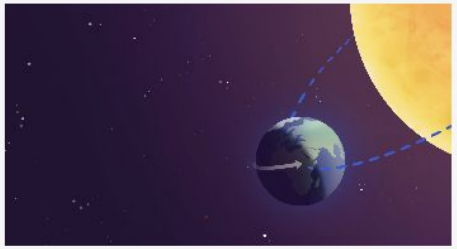
LESSON 2.2
The Daily Pattern

LESSON 2.3
What We See as We Spin

LESSON 2.4
Which Way Is Up?



LESSON 2.5
How Does Up Change?

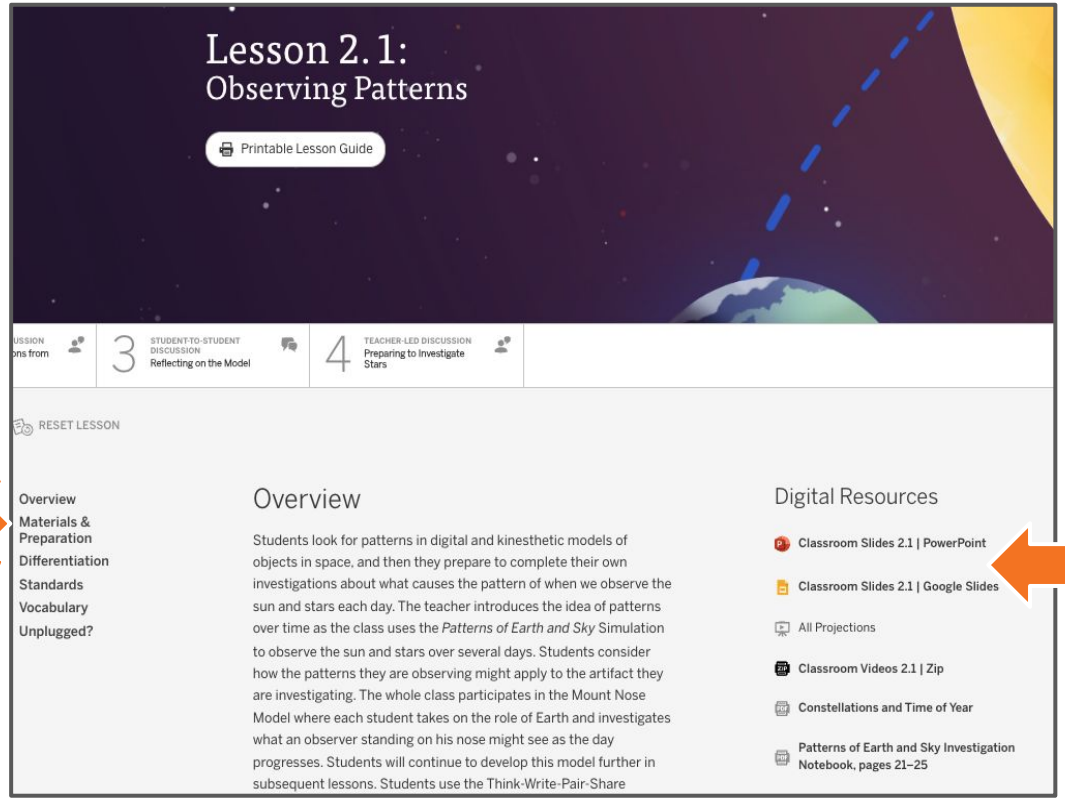


LESSON 2.6
Explaining the Effects of Earth's Spin

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.



Unit: Patterns of Earth and Sky Lesson: 2.1

Purpose: Lesson purpose: To stimulate students' initial ideas about how Earth's spin relates to the pattern of when we observe the sun and other stars and how that pattern might be investigated.

Materials and Preparation:

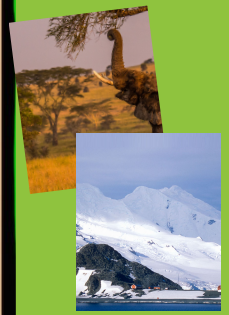
Day Before the Lesson:

1. Set aside Chapter 2 question: *"Why is the sun up sometimes, and not other times?"*
2. Set aside vocabulary word cards: *constellation, patterns*
3. Prepare to project Patterns of Earth and Sky simulation.

Immediately Before the Lesson:

1. Write the Investigation Question on the board or a sentence strip *"What causes the daily pattern of when we see the sun and other stars?"*
2. Write the name of the constellation on the board-a constellation that students will investigate that is visible during time of lesson.
3. Have materials available:
    - Masking tape
    - Ball

Patterns of Earth and Sky



Unit Question: Why do we see different stars at different times?

Chapter 1 Question: Why don't you see a lot of stars in the daytime?

Investigation Question: Where are the stars in space?

Investigation Question: If the stars are all around us, why can't we always see them?

Key Concepts

#1- Stars are very far away from Earth in every direction.

#2. The sun is the only star in our solar system. Other stars are far outside our solar system.

#3. The sun looks bigger and brighter because it is much closer to the Earth than other stars.

#4. The sun is the only star we can see in the daytime because the sun looks so bright.

Vocabulary

- star
- astronomer
- model
- visualize
- sun
- solar system
- investigation
- data
- evidence
- explanation

Grade 5 | Patterns of Earth and Sky

Lesson 2.1: Observing Patterns

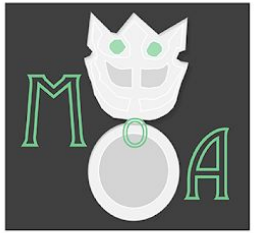
AmplifyScience

10 MIN

Activity 1

Looking for Patterns

To: Student Astronomers
From: Dr. Sabri, Museum of Archaeology
Subject: Another Question About the Artifact



Thank you so much for explaining why we can't see stars other than the sun in the daytime. We have a new question—Why is the sun up sometimes, but not other times?

Would you be able to explain that? We think your information might help us as we try to understand what would have been shown on the missing piece of the artifact.

As you recall, we want to display the artifact along with a replica of the missing piece that is as accurate as we can make it.

Chapter 2 Question

Why is the sun up sometimes, but not other times?

Our Experiences

What We Think We Know

Let's connect our question to the experiences and ideas on our charts.

Which experiences and ideas help you think about why **the sun is up sometimes** but not other times?

Our Experiences

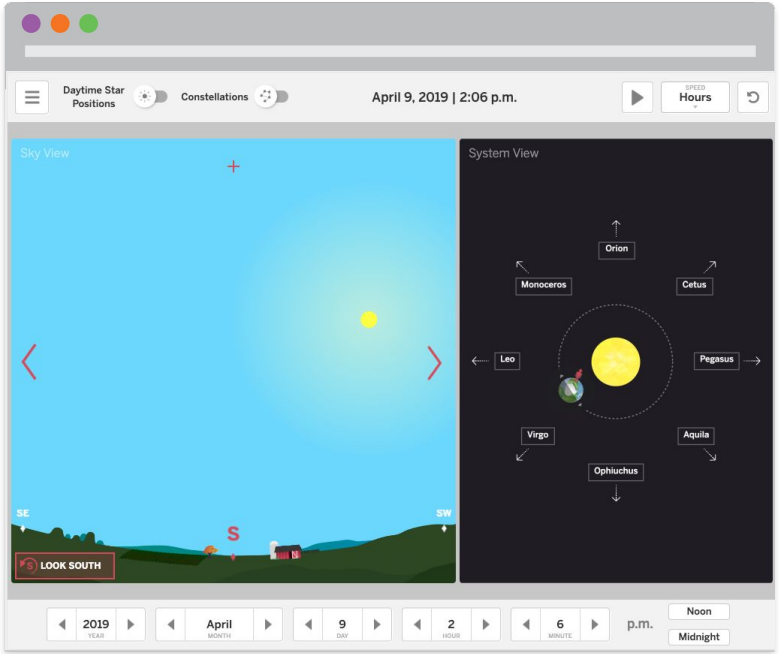
We can add more experiences to help us look for patterns in the Sim.

Let's talk about **where we have seen the sun in the sky** at different times of day.

Vocabulary

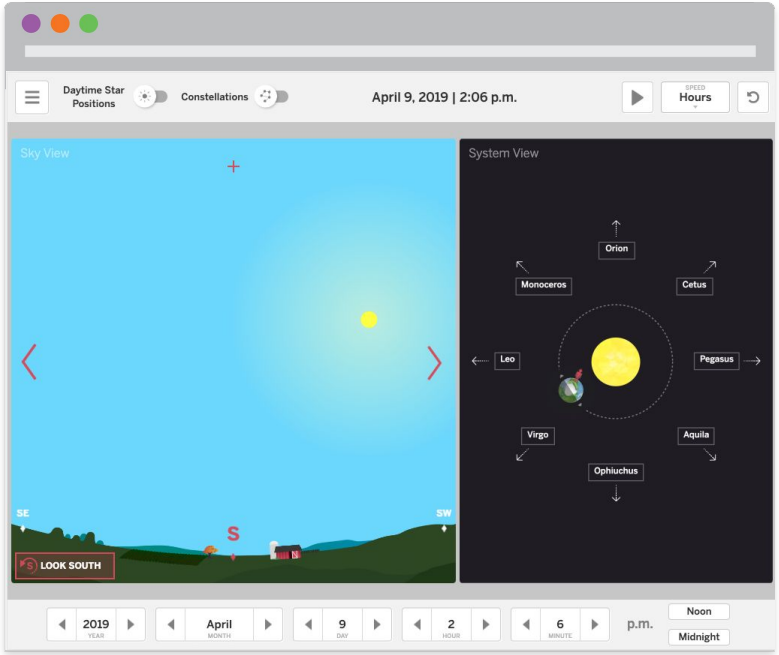
pattern

something we observe to be similar over and over again



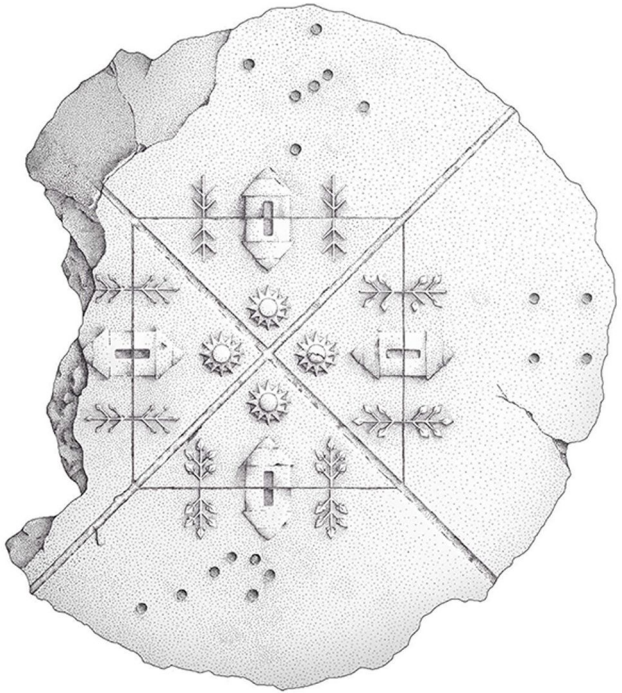
The Sim can help us investigate because it allows us to **speed up time**. Observe as the sim plays and look for a **pattern**—something happening over and over.


Daytime Star Positions
Constellations
May 10, 2019 | 10:22 a.m.
Days
System View
Orion
Cetus
Lyra
Pegasus
Virgo
Aquila
Ophiuchus
S
LOOK SOUTH
2019
May
10
10
22
a.m.
Noon
Midnight



You were just looking for patterns in the Sim.

What **patterns** did you notice?



Patterns on the artifact may lead to ideas about the missing piece.

What do you observe to be **similar over and over again** in each section of the artifact? Do you see a **pattern**?

We’re going to be guided by this Investigation Question:

What causes the daily pattern of when we see the sun and other stars?

20 MIN

Activity 2

Making Observations from Mount Nose

Now that we've observed the daily pattern of the sun and stars in the Sim, we will use a **model to investigate what causes that pattern.**

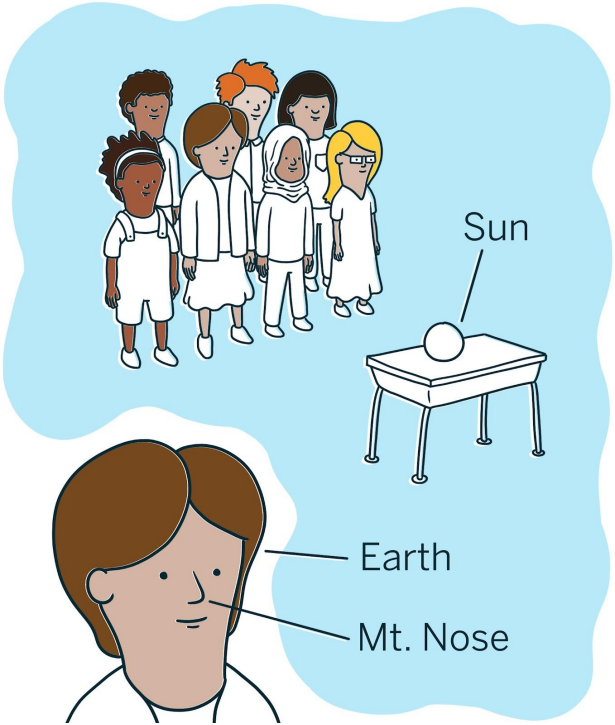
Mount Nose Model

Stand in a few loose rows so you can see the ball.

The Ball
Represents the **sun**

Your Head
Represents **Earth**

Your Nose
Represents **Mount Nose** (a mountain on Earth)



Turn and face the sun.

What would a person on Mount Nose **see in the sky** when Earth is like this?

What **time of day** is it on Mount Nose?

Visualize the many stars scattered all around in space.

Are there **other stars**, in addition to the sun, in the direction you are looking?

Would a person on Mount Nose see those **stars**?

Face away from the sun.

Would a person on Mount Nose see the **sun** in the sky?

Are there **other stars** in the direction you are looking?

Continue to face away from the sun.

Would a person on Mount Nose see the **star we identified before**?

Continue to face away from the sun.

Where is it currently **daytime** on Earth?

Point to a place on your head where a person could see the **sun**.

Spin slowly, making one full turn. This is like the change that happens from when the sun is up to when the sun is not up.

Continue to spin slowly and **call out daytime** every time the sun (ball) comes into view. Observe the pattern.

10 MIN

Activity 3

Reflecting on the Model

Name: _____ Date: _____

Think-Write-Pair-Share: Patterns in the Mount Nose Model

1. Think about this question:
   As you participated in the Mount Nose Model, what pattern, or patterns, did you observe?
2. Record your ideas.
3. Share your ideas with your partner.

Turn to page 22 in your notebooks.

As you participated in the Mount Nose Model, what **pattern, or patterns,** did you observe?

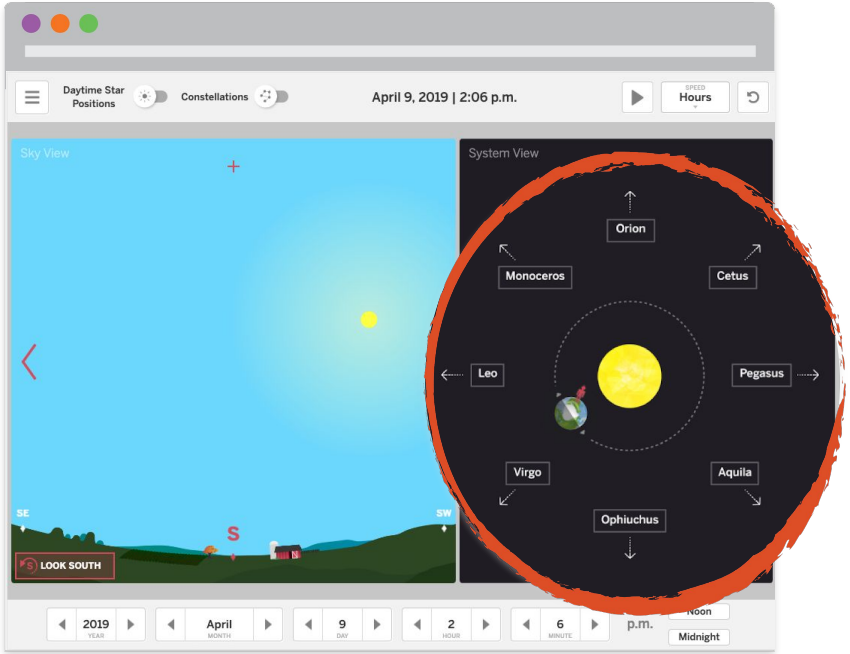
Remember our Investigation Question:

What causes the daily pattern of when we see the sun and other stars?

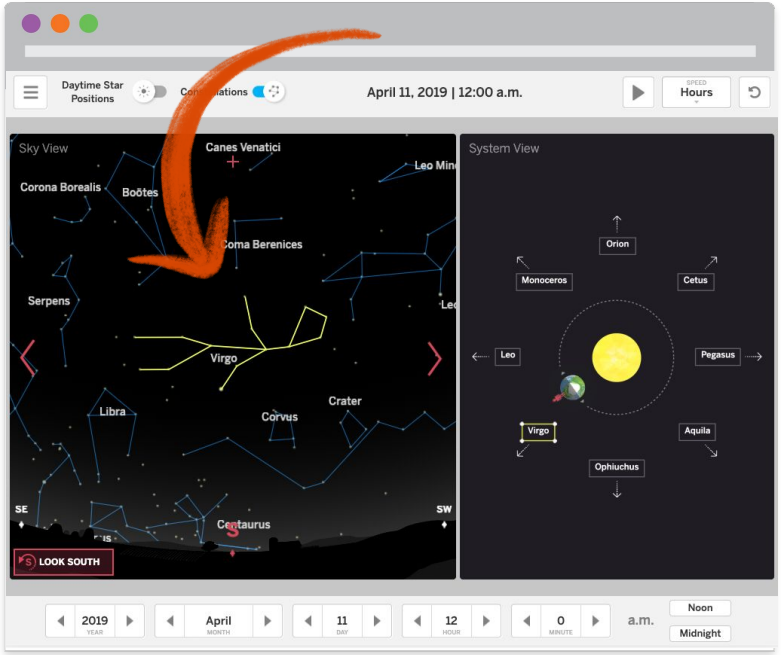
20 MIN

Activity 4

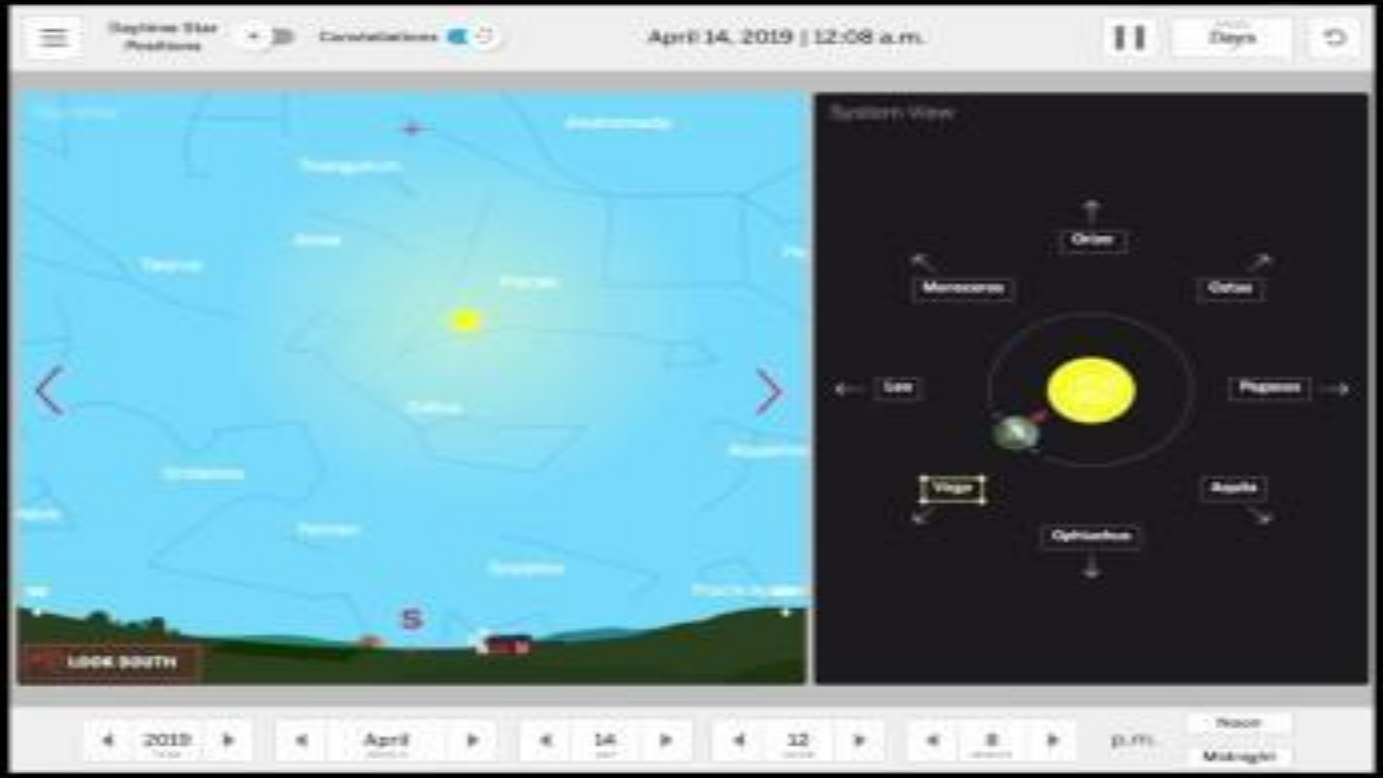
Preparing to Investigate Stars



Notice how **System View** is like looking at the Mount Nose Model from high above the classroom.



Since there are so many stars, it would be impossible to investigate them all, so **we will focus on just one group of stars.**


Daytime Star Positions
Constellations
April 14, 2019 | 12:08 a.m.
Days
System View
Orion
Monoceros
Gemini
Leo
Pegasus
Virgo
Aquila
Ophiuchus
LOOK SOUTH
2019
April
14
12
8
p.m.
Noon
Midnight

Vocabulary

constellation

an arrangement of stars as seen from Earth

Name: _____ Date: _____

Daily Pattern Investigation

Constellation:

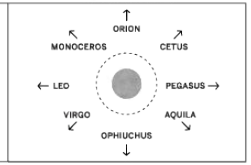
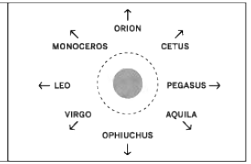
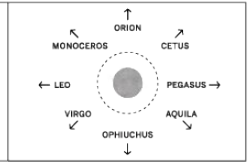
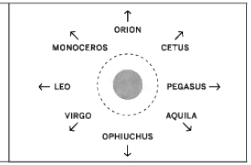
_____

Starting date:

_____

Investigation Question: What causes the daily pattern of when we see the sun and other stars?

1. Record the constellation name and starting date.
2. Highlight your constellation by pressing its name in System View.
3. For each time, decide if the constellation is visible.
4. Draw *Earth* and *the observer on Earth* in each System View sketch.

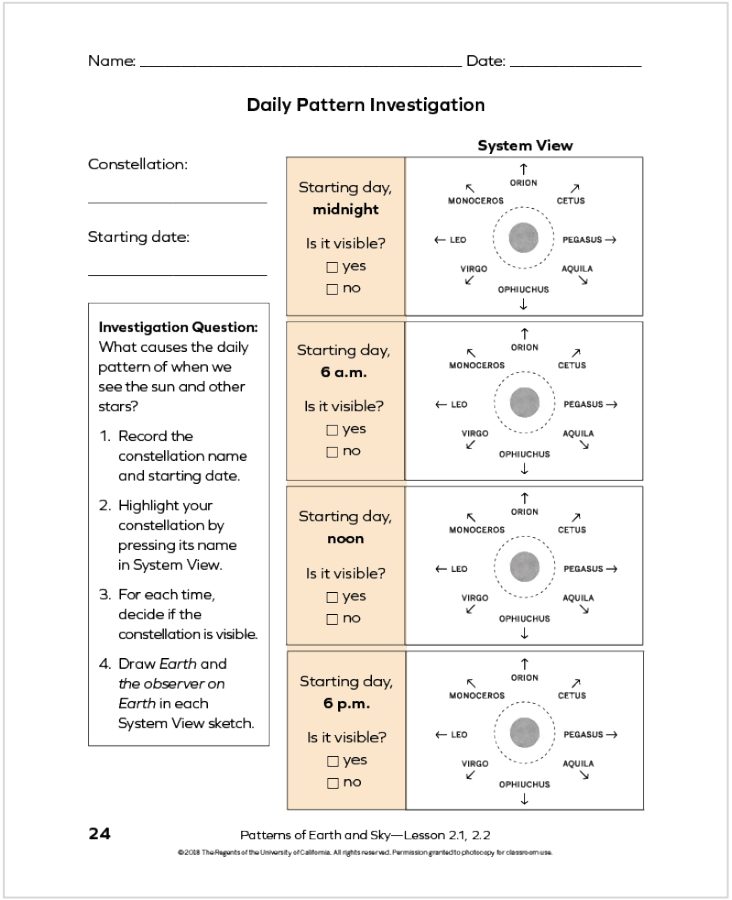
	System View
Starting day, **midnight** Is it visible? ☐ yes ☐ no	
Starting day, **6 a.m.** Is it visible? ☐ yes ☐ no	
Starting day, **noon** Is it visible? ☐ yes ☐ no	
Starting day, **6 p.m.** Is it visible? ☐ yes ☐ no	

24

Patterns of Earth and Sky—Lesson 2.1, 2.2

Turn to page 24 in your notebooks.

We will use this data table in a Sim investigation in the next lesson. Today, we will **review the parts of the data table**.



Name: _____ Date: _____

Daily Pattern Investigation

Constellation:

_____

Starting date:

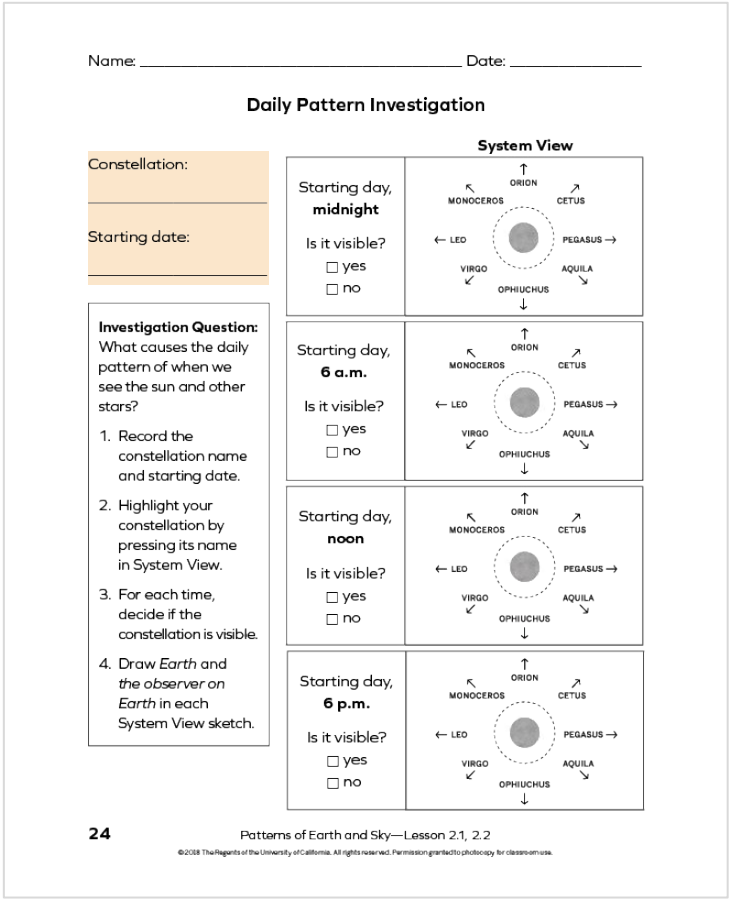
_____

Investigation Question: What causes the daily pattern of when we see the sun and other stars?

1. Record the constellation name and starting date.
2. Highlight your constellation by pressing its name in System View.
3. For each time, decide if the constellation is visible.
4. Draw *Earth* and *the observer on Earth* in each System View sketch.

	System View
Starting day, **midnight** Is it visible? ☐ yes ☐ no	
Starting day, **6 a.m.** Is it visible? ☐ yes ☐ no	
Starting day, **noon** Is it visible? ☐ yes ☐ no	
Starting day, **6 p.m.** Is it visible? ☐ yes ☐ no	

This column lists four different times of day. You will **observe the constellation** at midnight, 6 a.m., noon, and 6 p.m.



Name: _____ Date: _____

Daily Pattern Investigation

Constellation:

Starting date:

Investigation Question: What causes the daily pattern of when we see the sun and other stars?

1. Record the constellation name and starting date.
2. Highlight your constellation by pressing its name in System View.
3. For each time, decide if the constellation is visible.
4. Draw *Earth* and *the observer on Earth* in each System View sketch.

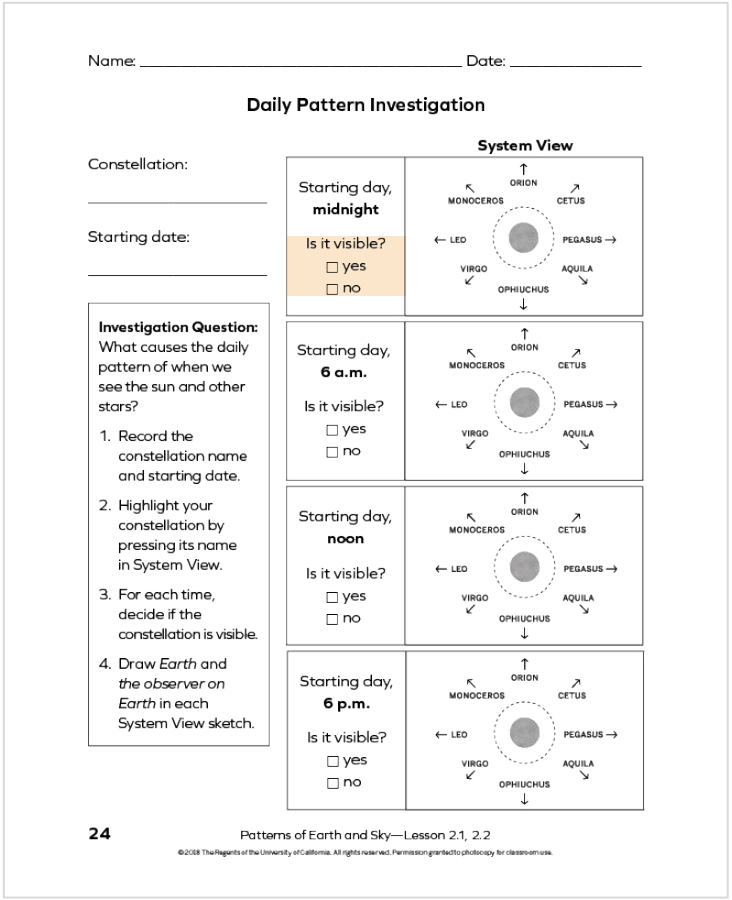
System View

Starting day, **midnight** Is it visible? ☐ yes ☐ no	ORION, MONOCEROS, CETUS, LEO, PEGASUS, VIRGO, AQUILA, OPHIUCHUS
Starting day, **6 a.m.** Is it visible? ☐ yes ☐ no	ORION, MONOCEROS, CETUS, LEO, PEGASUS, VIRGO, AQUILA, OPHIUCHUS
Starting day, **noon** Is it visible? ☐ yes ☐ no	ORION, MONOCEROS, CETUS, LEO, PEGASUS, VIRGO, AQUILA, OPHIUCHUS
Starting day, **6 p.m.** Is it visible? ☐ yes ☐ no	ORION, MONOCEROS, CETUS, LEO, PEGASUS, VIRGO, AQUILA, OPHIUCHUS

24

Patterns of Earth and Sky—Lesson 2.1, 2.2

This is where you will **write the name of the constellation.**



Name: _____ Date: _____

Daily Pattern Investigation

Constellation:

_____

Starting date:

_____

Investigation Question: What causes the daily pattern of when we see the sun and other stars?

1. Record the constellation name and starting date.
2. Highlight your constellation by pressing its name in System View.
3. For each time, decide if the constellation is visible.
4. Draw *Earth* and *the observer on Earth* in each System View sketch.

	System View
Starting day, **midnight** Is it visible? ☐ yes ☐ no	ORION, MONOCEROS, CETUS, LEO, PEGASUS, VIRGO, AQUILA, OPHIUCHUS
Starting day, **6 a.m.** Is it visible? ☐ yes ☐ no	ORION, MONOCEROS, CETUS, LEO, PEGASUS, VIRGO, AQUILA, OPHIUCHUS
Starting day, **noon** Is it visible? ☐ yes ☐ no	ORION, MONOCEROS, CETUS, LEO, PEGASUS, VIRGO, AQUILA, OPHIUCHUS
Starting day, **6 p.m.** Is it visible? ☐ yes ☐ no	ORION, MONOCEROS, CETUS, LEO, PEGASUS, VIRGO, AQUILA, OPHIUCHUS

24

Patterns of Earth and Sky—Lesson 2.1, 2.2

Each time you observe, you will record **whether the constellation is visible in the sky**. You will check yes or no in the box underneath each time.

Name: _____ Date: _____

Daily Pattern Investigation

Constellation:

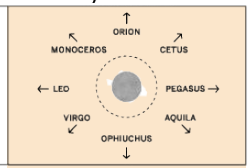
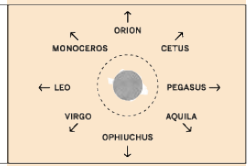
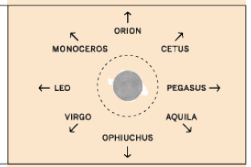
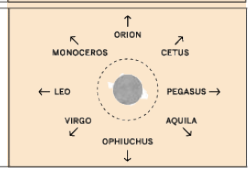
_____

Starting date:

_____

Investigation Question: What causes the daily pattern of when we see the sun and other stars?

1. Record the constellation name and starting date.
2. Highlight your constellation by pressing its name in System View.
3. For each time, decide if the constellation is visible.
4. Draw *Earth* and *the observer on Earth* in each System View sketch.

	System View
Starting day, **midnight** Is it visible? ☐ yes ☐ no	
Starting day, **6 a.m.** Is it visible? ☐ yes ☐ no	
Starting day, **noon** Is it visible? ☐ yes ☐ no	
Starting day, **6 p.m.** Is it visible? ☐ yes ☐ no	

24

Patterns of Earth and Sky—Lesson 2.1, 2.2

At the same time that you make observations about the constellation's visibility in Sky View, you will also record **data from System View**.

End of Lesson

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

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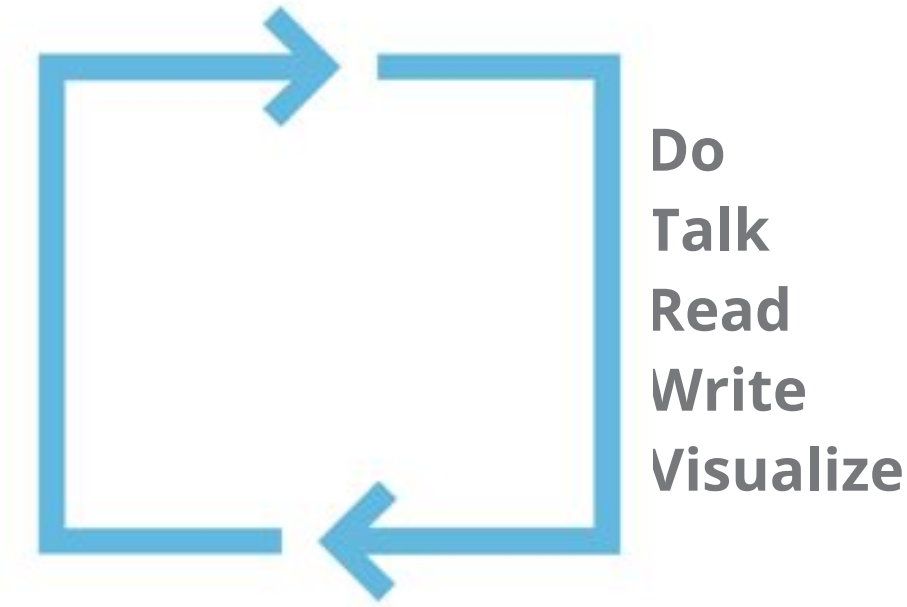
Patterns of Earth and Sky

Students are asked to figure out and explain the significance of the illustrations on a recently discovered thousand-year-old artifact with a missing piece, the anchor phenomenon for the unit. Students observe and investigate patterns in the sky by day and by night with kinesthetic models, as well as using a digital simulation, and informational text.

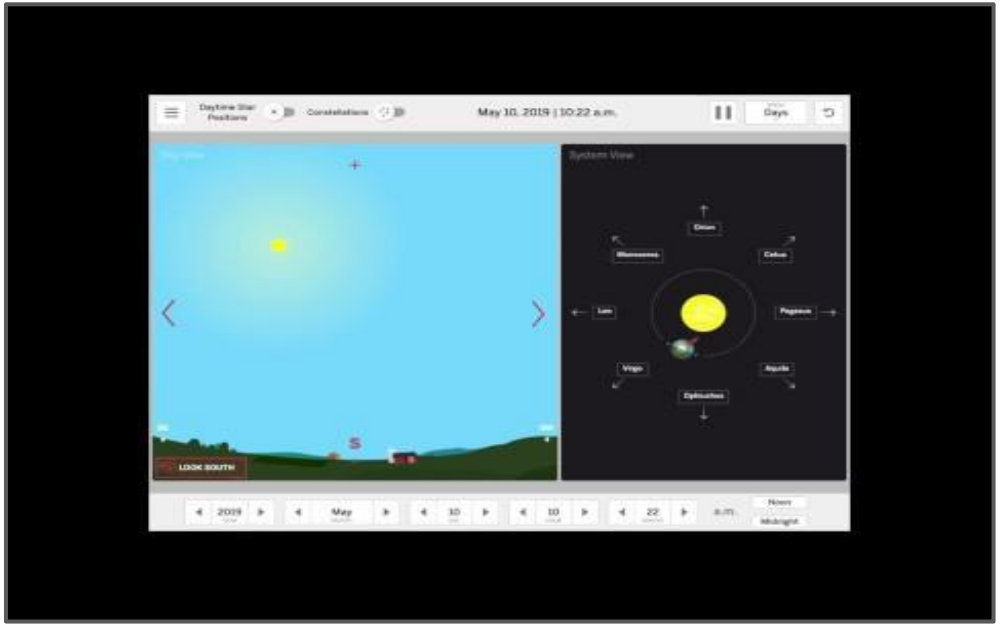
Lesson 2.1 Multimodal learning



Patterns of Earth and Sky: Lesson 2.1

Visualize: Patterns of Earth and Sky Simulation

Students observe in the *Patterns of Earth and Sky* Simulation and discuss new ideas about the artifact.



Patterns of Earth and Sky: Lesson 2.1

Talk: Patterns of Earth and Sky Simulation

Students discuss patterns that they observe in the *Patterns of Earth and Sky* Simulation and discuss new ideas about the artifact.

Patterns of Earth and Sky: Lesson 2.1

Do: Mount Nose Model

- The whole class participates in the Mount Nose Model where each student takes on the role of Earth and investigates what an observer standing on his nose might see as the day progresses.

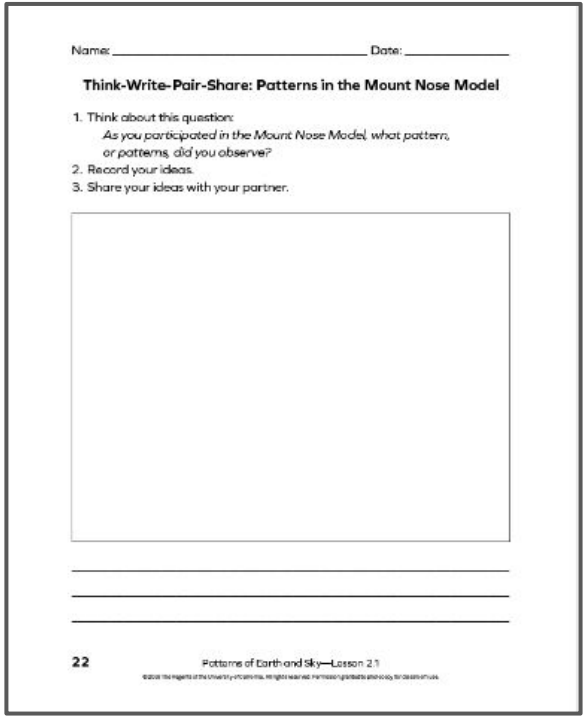
- Students use the Think-Write-Pair-Share discourse routine to reflect on the Mount Nose Model and discuss the patterns they observed.

Return to Mount Nose

Patterns of Earth and Sky: Lesson 2.1

Write and Talk: Use the Think-Write- Pair-Share Routine

Students use the Think-Write-Pair-Share routine to visualized, draw, and discuss the Mount Nose Model



Name: _____ Date: _____

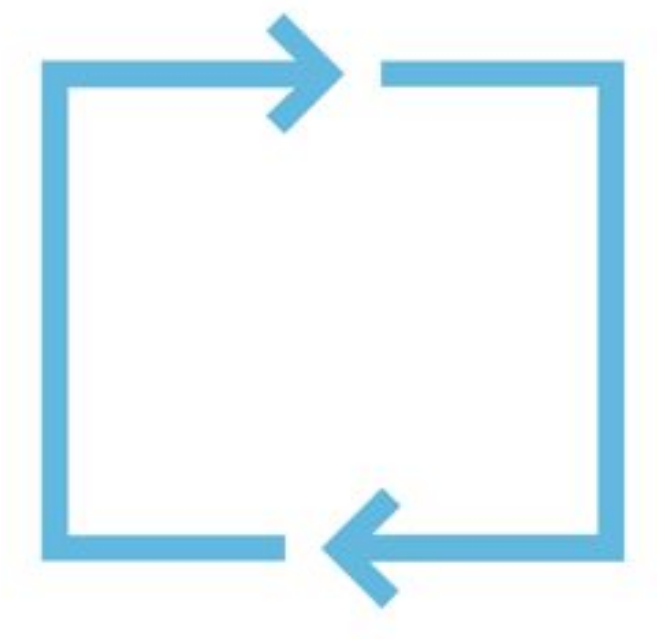
Think-Write-Pair-Share: Patterns in the Mount Nose Model

1. Think about this question:
   As you participated in the Mount Nose Model, what pattern, or patterns, did you observe?
2. Record your ideas.
3. Share your ideas with your partner.

22

Patterns of Earth and Sky—Lesson 2.1

Lesson 2.1 Multimodal learning



Do Participate in the Mount Nose Model

Talk Discuss Patterns in Simulation
Reflecting on the Mount Nose Model

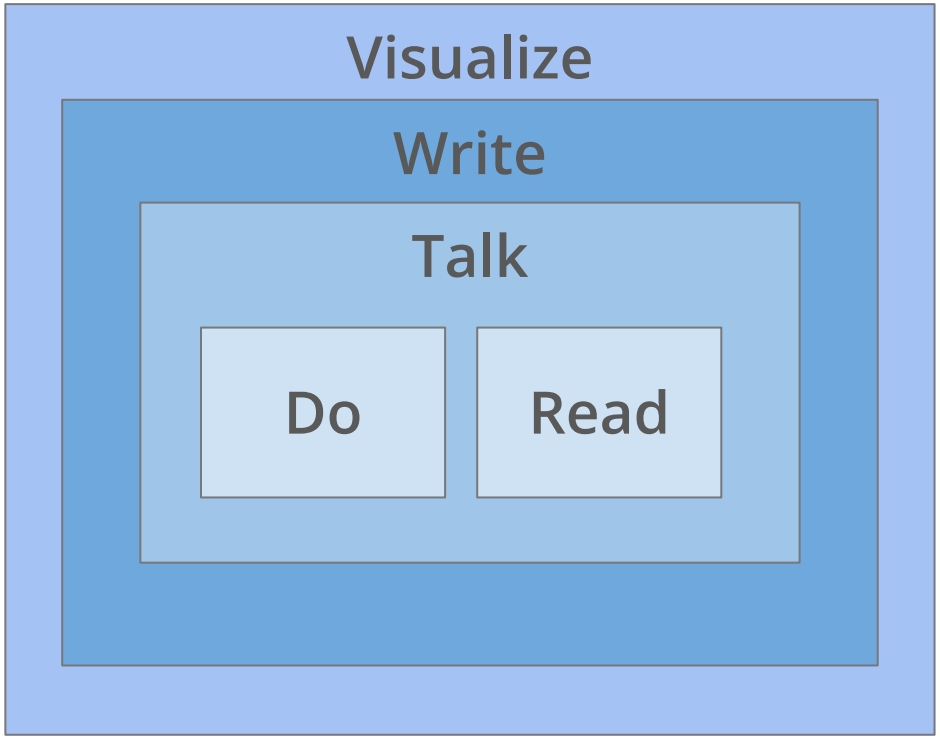
Read

Write Reflecting on the Mount nose Model

Visualize Patterns of Earth and Sky Simulation

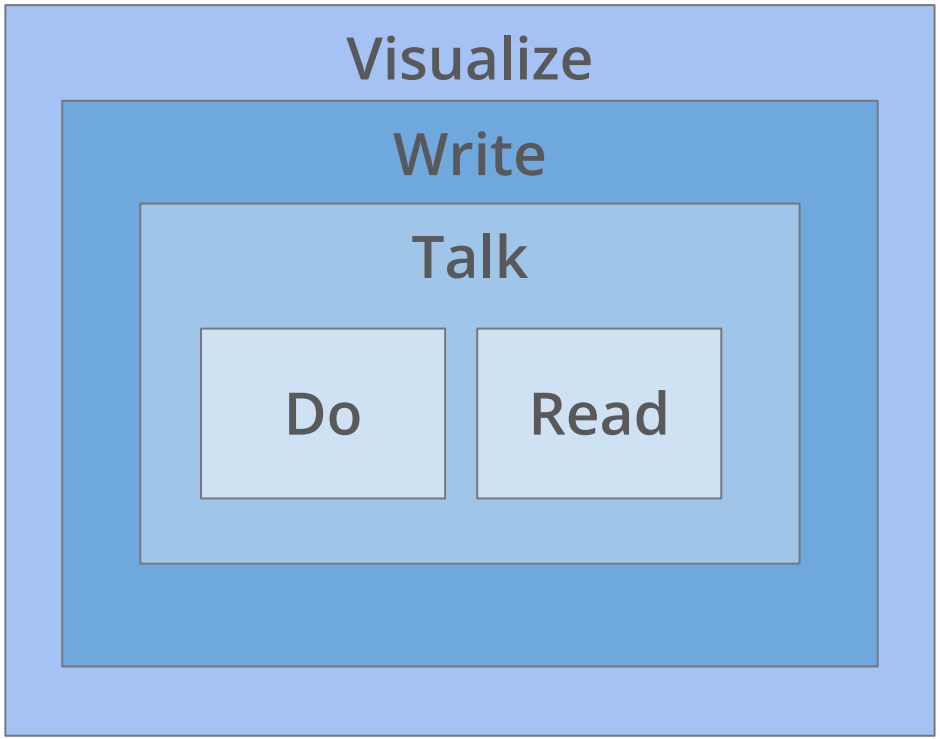
Multimodal instruction (multiple at bats)

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



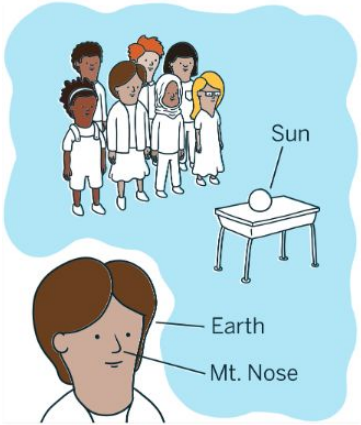
Reflection

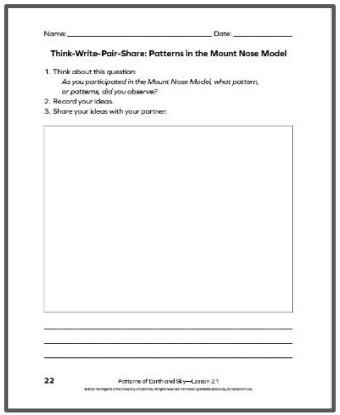
How will multiple at-bats with multimodal evidence sources support diverse learners in your class to master complex science ideas?



Evidence sources work together

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



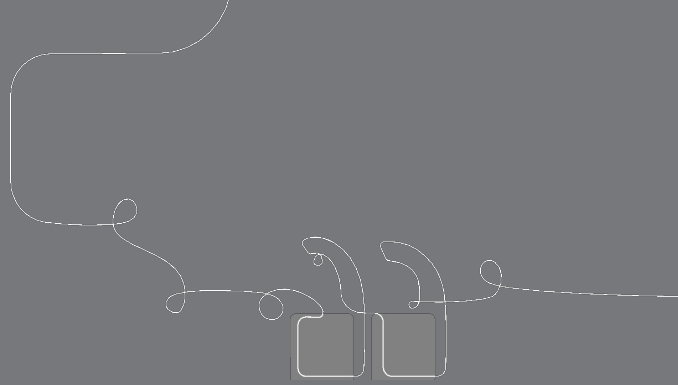

Name: _____ Date: _____

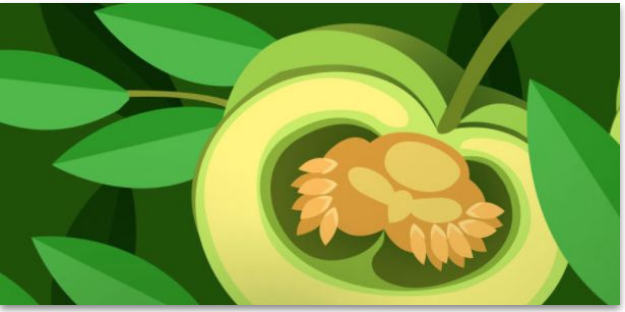
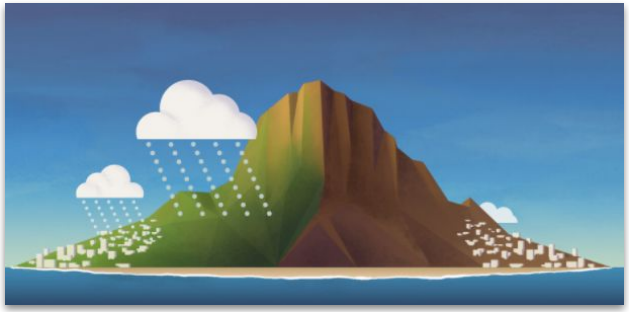
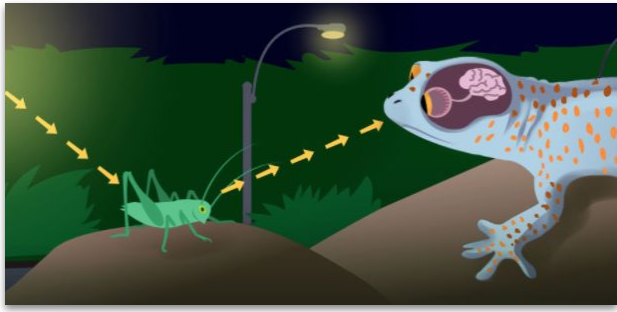
Think-Write-Pair-Share: Patterns in the Mount Nose Model

1. Think about this question:
   As you participated in the Mount Nose Model, what pattern, or patterns, did you observe?
2. Record your ideas.
3. Share your ideas with your partner.

22 Patterns of Earth and Sky—Lesson 2.1

Questions?



Plan for the day

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

Patterns of Earth and Sky: Chapter 2

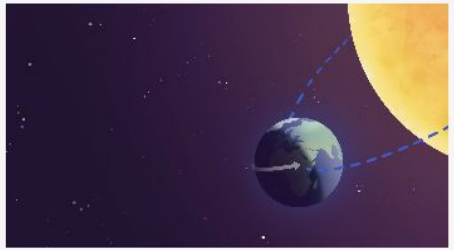
Chapter 2: Why is the sun up sometimes, but not other times?

LESSON 2.1
Observing Patterns

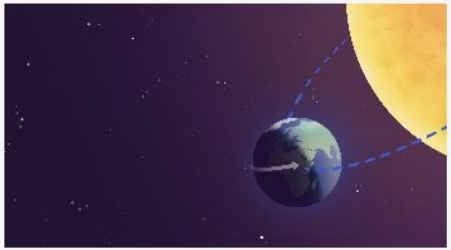
LESSON 2.2
The Daily Pattern

LESSON 2.3
What We See as We Spin

LESSON 2.4
Which Way Is Up?



LESSON 2.5
How Does Up Change?



LESSON 2.6
Explaining the Effects of Earth's Spin

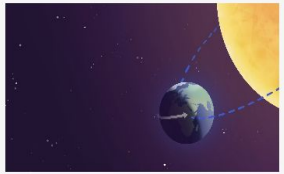
Digging into Chapter 2

Group Work time

1. In your group, pick a lesson in Chapter 2 (from 2.2 to 2.6)
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 is the sun up sometimes, but not other times?



LESSON 2.1
Observing Patterns

LESSON 2.2
The Daily Pattern

LESSON 2.3
What We See as We Spin

LESSON 2.4
Which Way Is Up?

LESSON 2.5
How Does Up Change?

LESSON 2.6
Explaining the Effects of Earth's Spin

Patterns of Earth and Sky: Analyzing Stars on Ancient Artifacts

Unit Anchor Phenomenon
Problem students work to solve

Different stars are visible in the sky at different times
Archaeologists discovered part of an ancient artifact that depicts the sun and other stars. How can we figure out what would have appeared on the missing piece?

Chapter-level Anchor Phenomenon
Chapter 2 Question

Sometimes the sun is visible in the sky, sometimes it is not.
Why is the sun up sometimes, but not other times?

Investigation Questions

What causes the daily pattern of when we see the sun and other stars? (2.1–2.3)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

If Earth is spinning, which way is up? (2.4–2.5)
(Note: See Lesson Overviews for lesson-level Investigative Phenomena)

Evidence sources and reflection opportunities

- Use the Mount Nose Model to visualize the view from Earth. (2.1)
- Investigate patterns of when the sun and other "stars are visible" in the Sim (2.2)
- Watch the *One Year on Earth* video (2.3)
- Revisit the Mount Nose Model (2.3)
- Model the daily pattern of how stars look from different places on Earth using the digital modeling tool (2.3)

- Watch a video to observe the way things fall (2.4)
- Read *Which Way is Up?* (2.4)
- Model which way is up using the digital modeling tool (2.5)
- Use the Spinning Globe Model to visualize what people see in the sky (2.5)
- Model how people on opposite sides of the Earth can see the same things in the sky at different times using the digital modeling tool (2.5)

Key concepts

- Scientists plan investigations to answer their questions. They think about what they will observe and record, as well as what they will change and what they will keep the same. (2.2)
- Earth spins once each day. We face the sun in daytime, and we face away from the sun at nighttime. (2.3)

- Earth pulls objects down toward the ground with the force of gravity, so up is away from the ground, anywhere on Earth. (2.5)

Application of key concepts to the problem

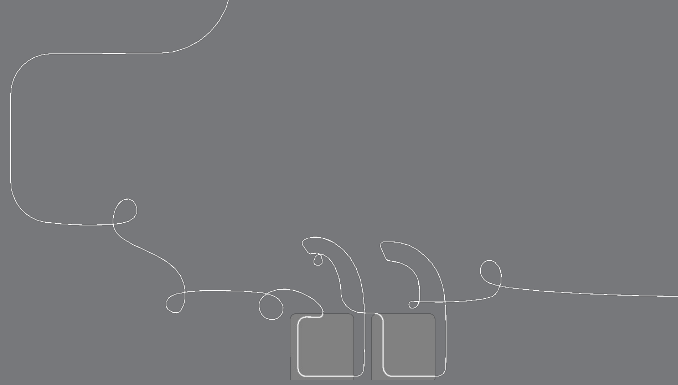
- Use the Mount Nose Models and images of the Sun and Orion to discuss the Chapter 2 Question (2.3)
- Write a scientific explanation to answer the Chapter 2 Question (2.6)
- Revisit the artifact and identify one constellation (2.6)

Explanation that students can make to answer the Chapter 2 Question

The sun is only up sometimes and not at other times because Earth spins once per day. Since gravity pulls us down toward Earth, we are carried with Earth as it spins. What we see up above us changes as we spin. When the side of Earth we are on faces the sun, the sun is up in the sky. When Earth spins to face away from the sun, the sun is not up, and we can see other stars. This is why each artifact panel shows a repeating pattern: the sun is in the sky, then other stars are in the sky, and so on.

Amplify.

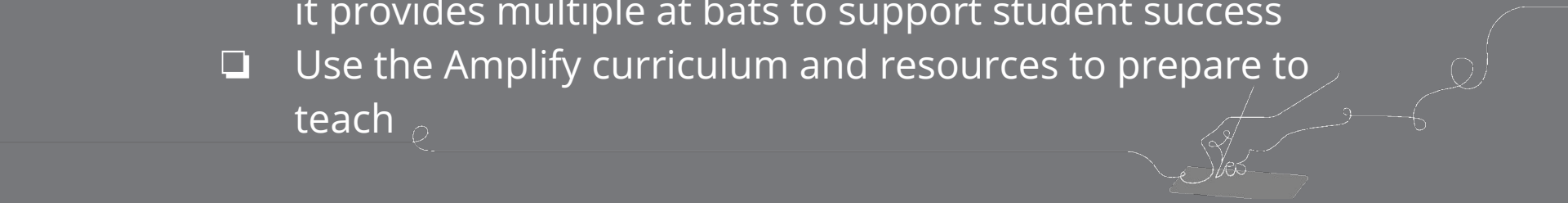
Questions?



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)

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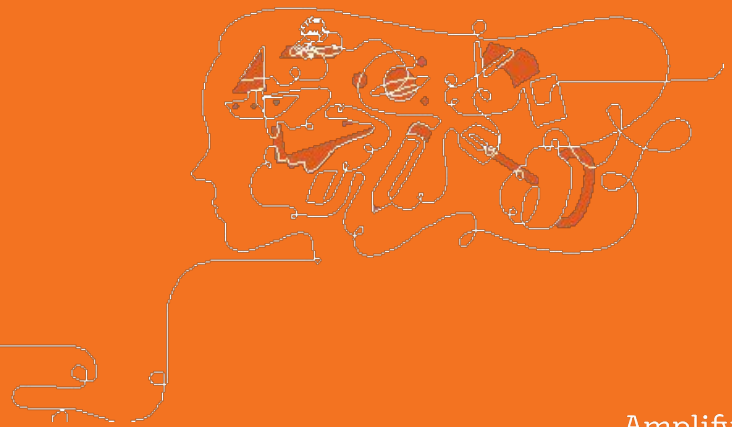
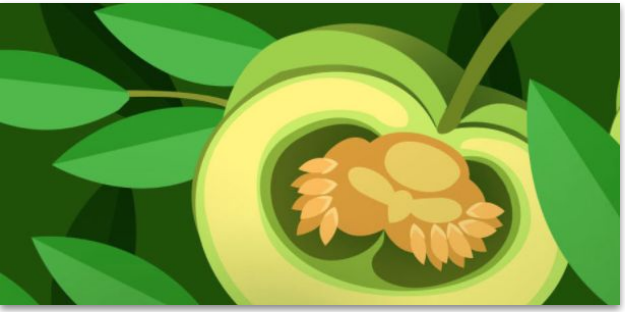
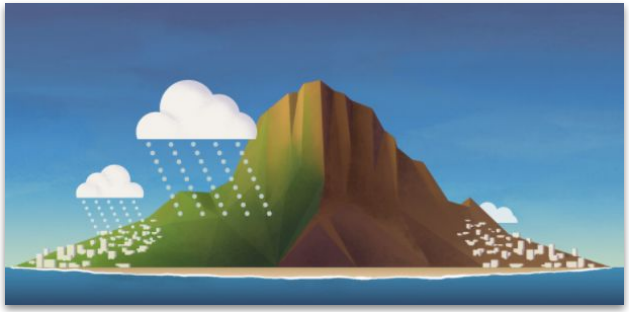
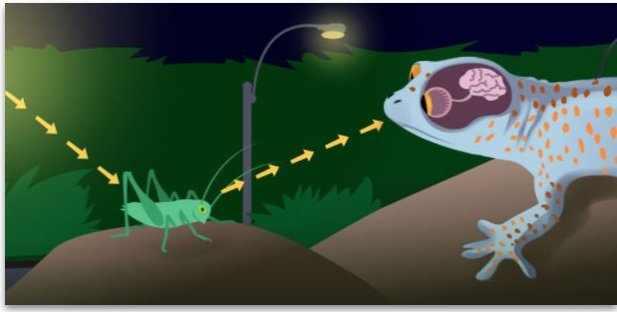
Session 2 (after lunch)
UCLA Center X Presentation

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. 5 Patterns of Earth and Sky

Participant Links

PN Patterns of Earth and Sky Deep Dive (pdf)

Planning Resources

Patterns of Earth and Sky Lesson Planning Slides (forced copy)

Gr. 5 Patterns of Earth and Sky Completed Material Prep Doc (forced copy)

Gr. 5 Patterns of Earth and Sky Chart List (pdf)

Gr. 5 Patterns of Earth and Sky Investigation Questions (pdf)

Other Resources

Caregivers Site

Classroom Slides

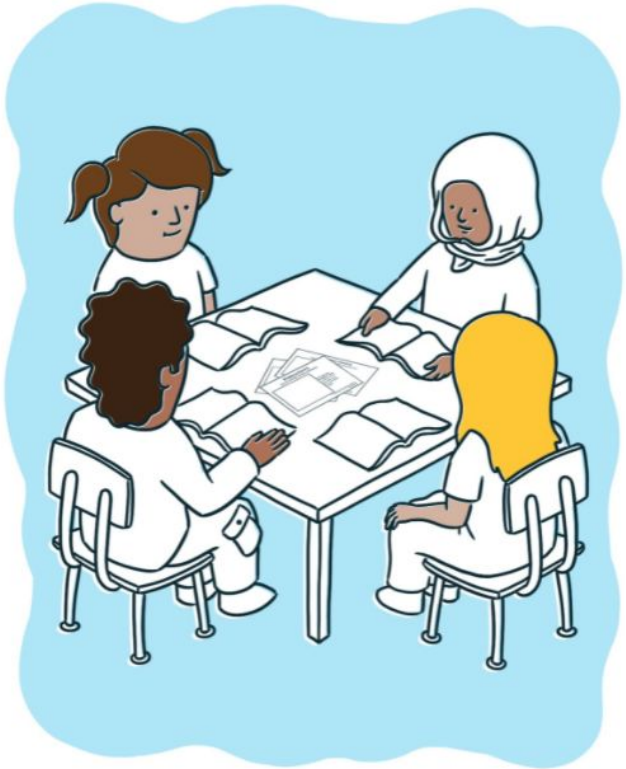
Unit Guide Resources

https://bit.ly/3LrCGbZ

Planning time

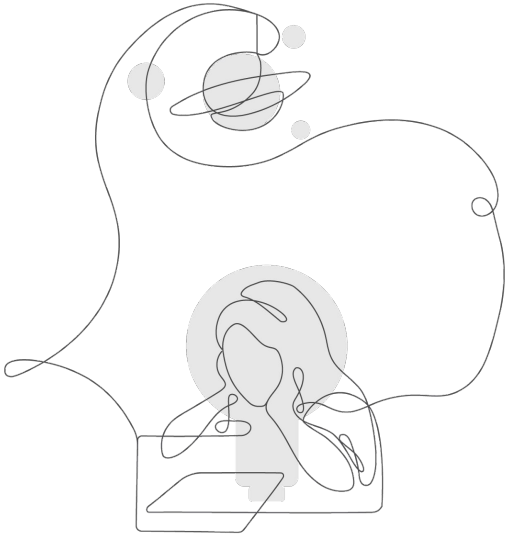
(Be prepared to share what you have been planning)

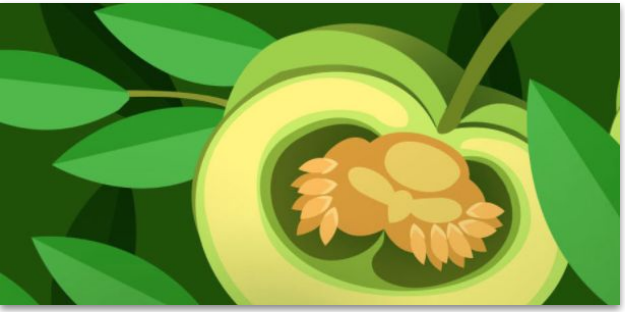
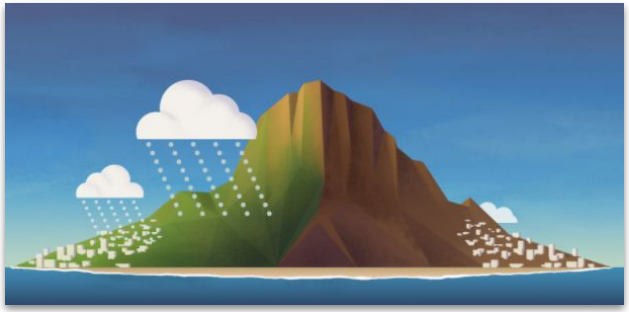
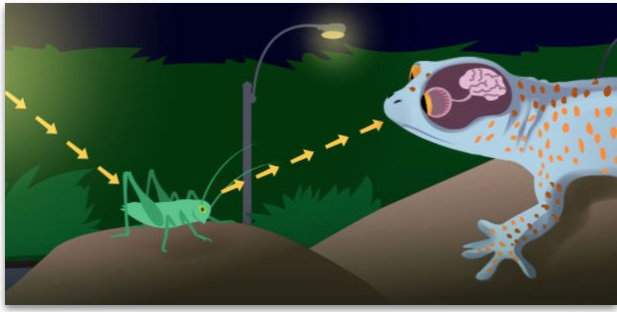
- Suggestions
  - Prep your charts
  - Read your unit's key documents
  - Familiarize yourself with the digital tools and sims
  - Familiarize yourself with the hands on activities
  - Preread the student texts
  - Download all the classroom slides for your unit and put in chapter folders
  - Review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



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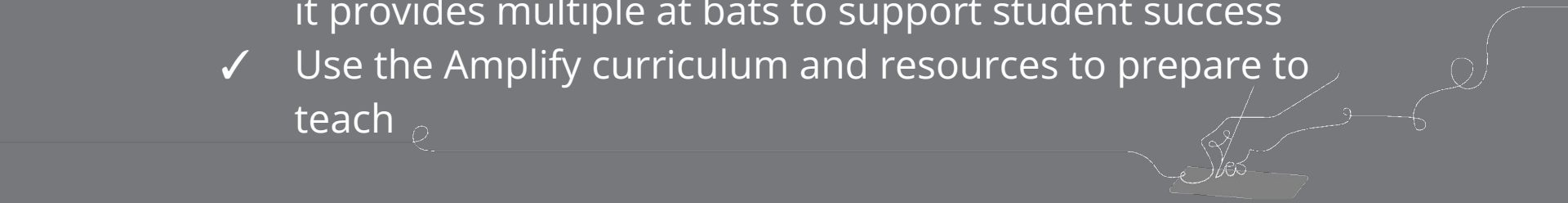
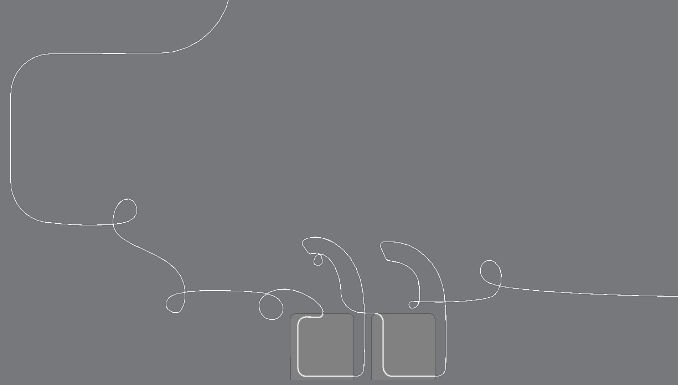


Teaching science



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

"Three Dimensional Learning." Three Dimensional Learning | Next Generation Science Standards, www.nextgenscience.org/three-dimensions.

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.

help@amplify.com

800-823-1969

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)