# **Amplify** Science

Unit Internalization / Guided Planning

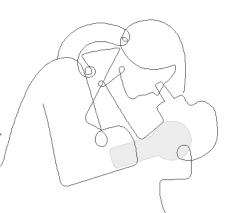
Grade 5, Unit 1: Patterns of Earth and Sky

Part 1

School/District Name: LAUSD

Date: October, 2022

Presented by:





#### Ice Breaker!

#### Who do we have in the room today?

- Question 1: Which aspects of implementing the Amplify Science standard curriculum has been the most successful?
- Question 2: Which aspects have been the most challenging?



## 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

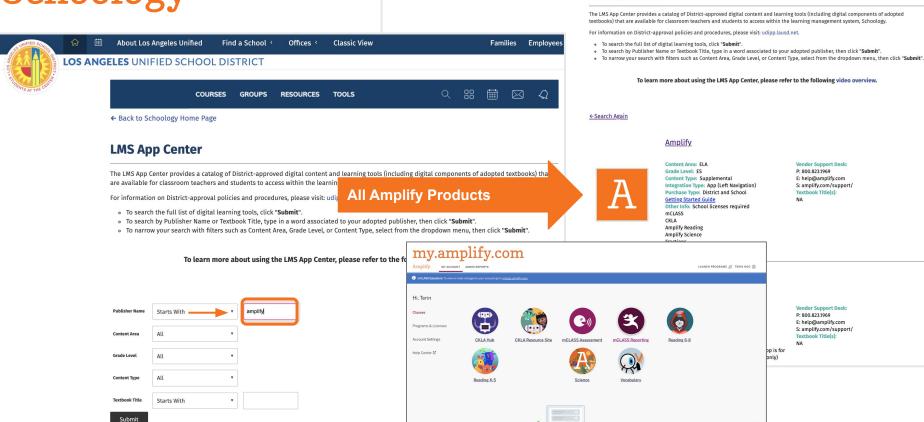
- Take risks: Ask any questions, provide any answers.
- Participate: Share your thinking, participate in discussion and reflection.
- Be fully present: Unplug and immerse yourself in the moment.
- Physical needs: Stand up, get water, take breaks.

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## Schoology



**LMS App Center** 



## Join Amplify Science Schoology Group

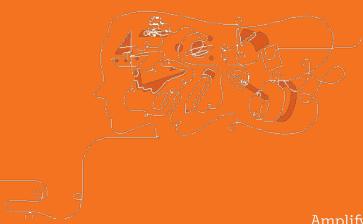
To join Amplify Science Schoology ES Group: W4PK-W466-63F5B

## Navigation Temperature Check

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

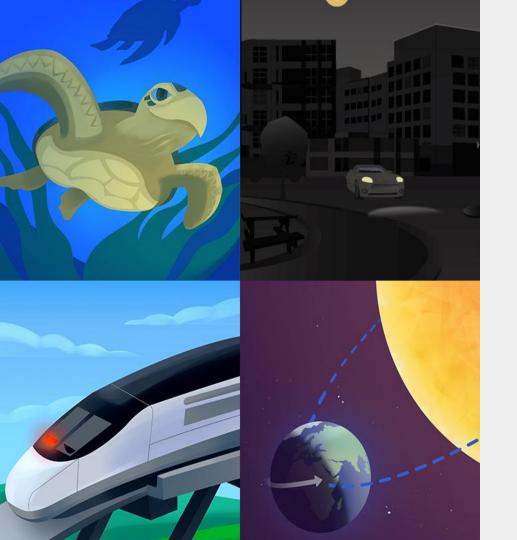
- 1 = Extremely Uncomfortable
- 2 = Uncomfortable
- 3 = Mild
- 4 = Comfortable
- 5 = Extremely Comfortable

## Part 1



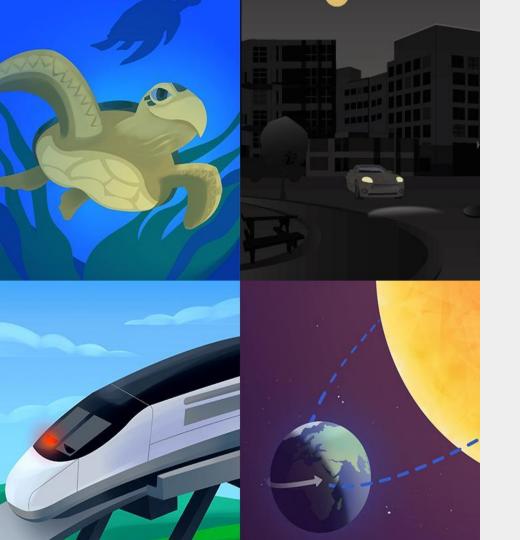
## Overarching goals

- Explain how students engage in phenomenon based and 3D learning to construct an understanding of the science concepts introduced in the unit
- Internalize the unit and apply your new understanding to plan for the diverse needs of your classroom and students



## Plan for the day: Part 1

- Introduction and Framing
- Phenomenon-based Instruction
- Unit Internalization
- Additional Resources
- Closing



## Plan for the day: Part 1

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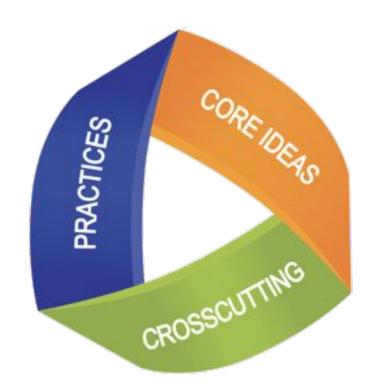
# + Amplify.

# **Amplify** Science

## Three dimensional learning

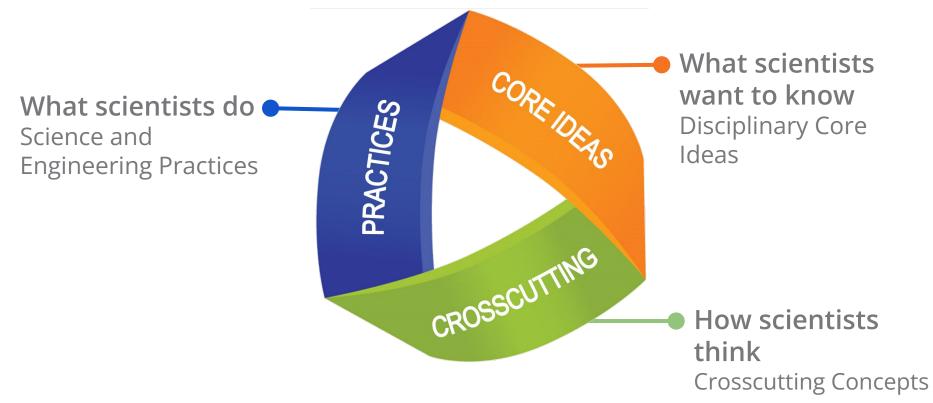
## Evaluate your knowledge

 On a scale of 0-5, how would you rate your familiarity with 3-D learning?



## Figuring out Phenomena

Using 3-D teaching and learning



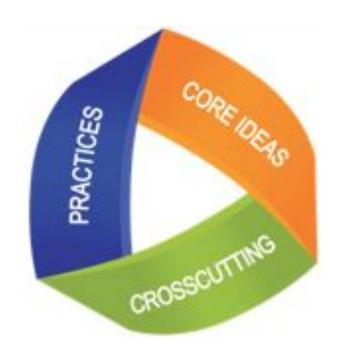


# Three-dimensional learning Reflection

In the video, how did students engage in three-dimensional learning to think like scientists?

#### Lesson 3.2

Students use a model to figure out the relationship between different parts of a habitat system in order to construct their understanding about how animals can help move seeds around a habitat (systems and system models).



#### Course curriculum structure

#### Grade K

- · Needs of Plants and Animals
- · Pushes and Pulls
- Sunlight and Weather

#### Grade 1

- · Animal and Plant Defenses
- · Light and Sound
- · Spinning Earth

#### Grade 2

- Plant and Animal Relationships
- · Properties of Materials
- · Changing Landforms

#### Grade 3

- · Balancing Forces
- Inheritance and Traits
- · Environments and Survival
- · Weather and Climate

#### Grade 4

- · Energy Conversions
- Vision and Light
- Earth's Features
- Waves, Energy, and Information

#### Grade 5

- · Patterns of Earth and Sky
- Modeling Matter
- The Earth System
- · Ecosystem Restoration

## Key takeaways:

- There are 22 lessons per unit
- Lessons at grades K-1 are 45 minutes long

## Year at a Glance: Grade 5



Patterns of Earth and Sky



Modeling Matter



The Earth System



Ecosystem Restoration

**Domain**: Earth and Space Science

**Unit type:** Investigation

**Student role:** Astronomers

**Domain**: Physical Science

**Unit type:** Modeling

**Student role:** Food scientists

**Domain**: Earth and Space Science

**Unit type:** Engineering Design

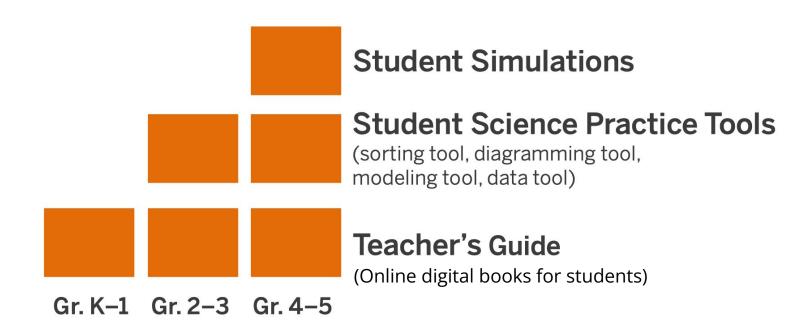
**Student role:** Water resource engineers

**Domain**: Life Science

**Unit type:** Argumentation

**Student role:** Ecologists

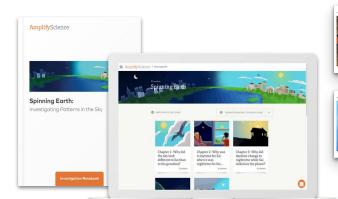
# What are the digital components of Amplify Science Elementary?

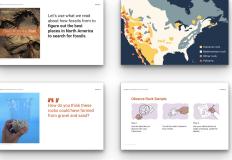


## K-5 Program components

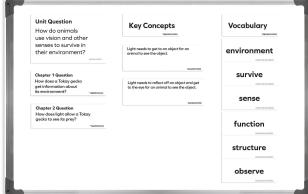
#### Teacher materials

- Teacher's Guide (print and digital)
- Classroom Slides
- Classroom wall materials
- Embedded assessments
- Program Guide
- Program Hub
- Amplify Help Site





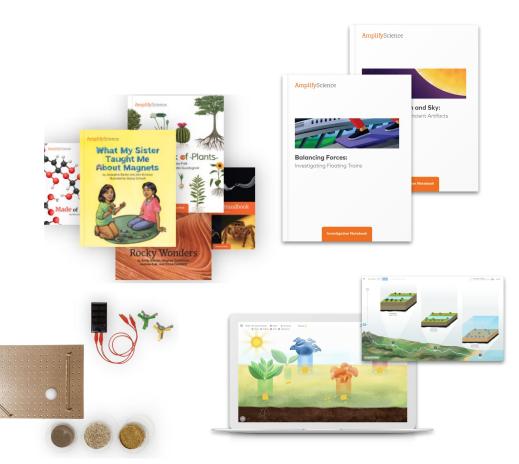




## K-5 Program components

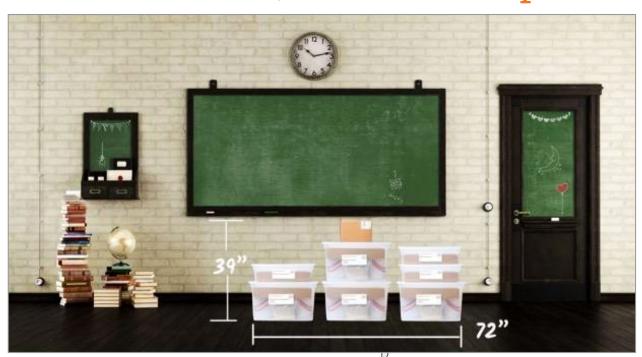
#### Student materials

- Hands-on materials
- Investigation Notebooks (print and digital)
- Student books
- Digital Applications



## Prepping Hands-On Materials for the Unit

## Microsite: Unit 1, K-2 Lesson Prep Videos



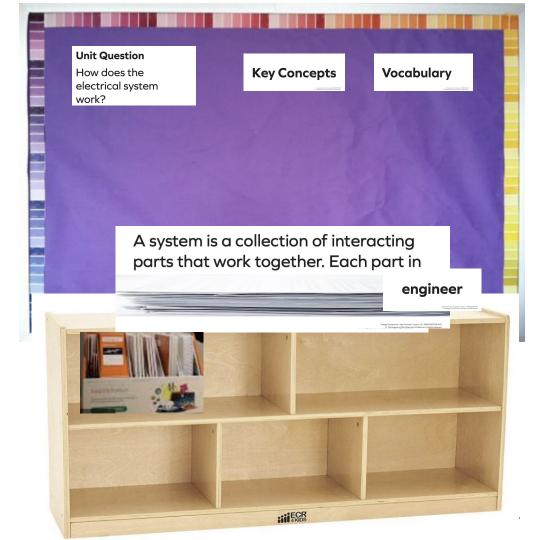
#### **Classroom Kits**

Built for a class of 36 students, with consumables for two years

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## Unpacking the Kit

- Pull out the unit question, key concepts and vocabulary materials.
- Place them on the top of the table or bookcase below your science board
- Take books out of kit and place in the bookcase or on the table. (Always collect books after each lesson use. Return to bookcase so they are easily accessible.)



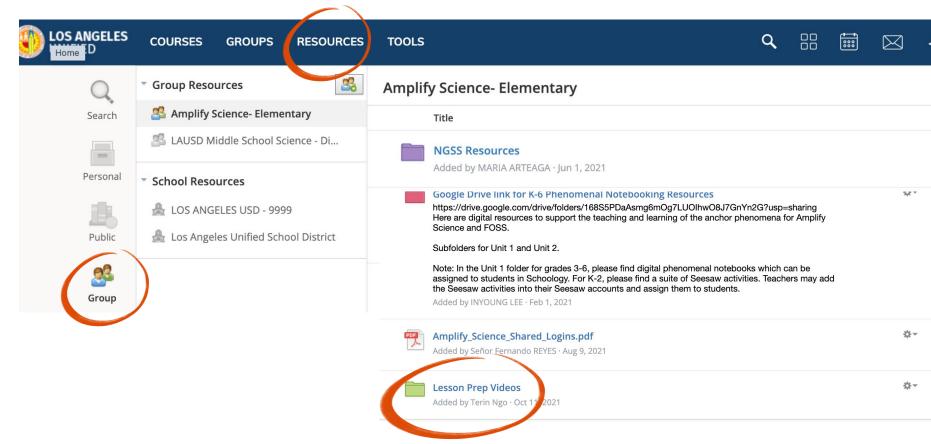
### Cards for games, sorting or matching activities

#### Organization tips:

- Separate and place in envelopes or bags (or clip together)
- Label the envelopes or bags with the name and lesson # and activity # (ex. Lesson 2.4, Act. 1)
- Put each envelope or bag (1 set) into a bigger bag and label



## LAUSD Schoology: Unit 1, 3-5 Lesson Prep Videos



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



## Welcome to Amplify Science!

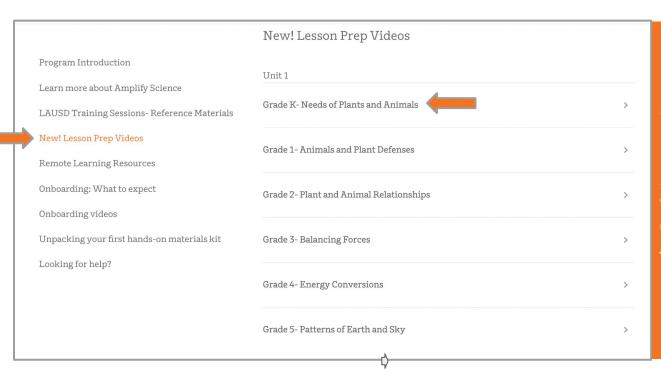
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- Access the Amplify Science Program Hub (To help orient you to the new design, watch this video and view this reference guide.)
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- Share the Caregiver Hub (Eng/Span) with your families
- For LAUSD 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!

## Microsite: Unit 1, K-2 Lesson Prep Videos

#### Classroom kits



#### **Classroom Kits**

Built for a class of 36 students, with consumables for two years

## Hands On Material Organization

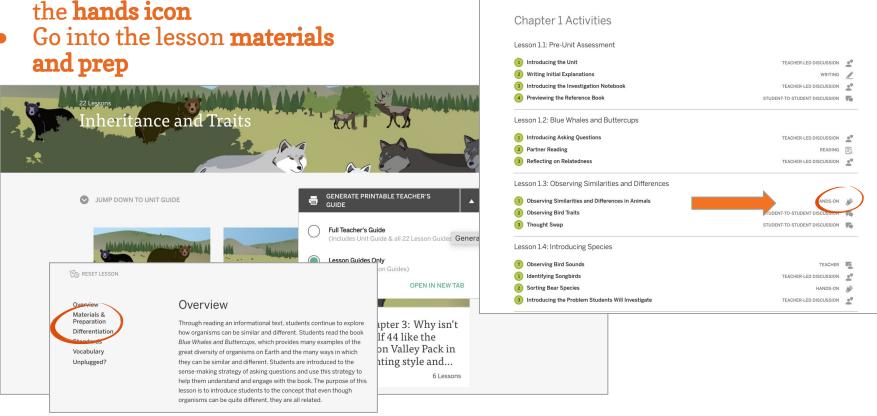
Lesson Guides	Only page 7 from	m the Unit Landir	ng page or go the Print TE to page 31. (Chapter 1 Activities)	
ons with Hands	On.			
below.				
rials and prepa	ration to determine	ne if it can be pre	pared prior to the lesson or on the day of the lesson.	
rocedure for ea	ch Chapter. (Go t	to the Chapter Ad	ctivities Contents)	
Activity	Prep Prior	Prep Day of	What to do	
1	х		Prep plastic bags with labels A, B, C, D and M. Place 1 tsp of the following cinnamon, salt, flour, cornstarch in A,B,C, D. In bag M mix 1 tsp salt and 1 tsp cinnamon.	This is an example from Properties of Materials Grade 2
	12			
	(a)			
	below. rials and preparocedure for ea	below. rials and preparation to determine rocedure for each Chapter. (Go to Activity Prep Prior	below. rials and preparation to determine if it can be pre- rocedure for each Chapter. (Go to the Chapter Ac  Activity Prep Prior Prep Day of	below.  rials and preparation to determine if it can be prepared prior to the lesson or on the day of the lesson.  rocedure for each Chapter. (Go to the Chapter Activities Contents)  Activity Prep Prior Prep Day of What to do  Prep plastic bags with labels A, B, C, D and M. Place 1 tsp of the following cinnamon, salt, flour, cornstarch in A,B,C, D. In bag M mix

## Hands On Material Organization

#### Completed for Balancing Forces

Directions					
Open the Digital	Lesson Guides	Only page 7 from	the Unit Landing	page or go the Print TE to page 31. (Chapter 1 Activities)	
Look for the less	ons with Hands	On.			
NNDS-ON #					
Note in the table	below.				
Review the mate	rials and prepar	ation to determine	if it can be prepa	ared prior to the lesson or on the day of the lesson.	
Use this same p	rocedure for each	ch Chapter. (Go to	the Chapter Activ	vities Contents)	
Chapter/Lesson	Activity	Prep Prior	Prep Day of	What to do	
1.2	2	x		First, you will need to screw one hook into the short end of each block. You will also need to provide rubber bands. Assemble one gallon- size self-sealing plastic bag of investigation materials for each pair of students, plus one bag for demonstration purposes. Each bag should contain the following items: 2 blocks, with hooks 1 balloon 1 rubber band 1 paper (lip 1 domino 1 oldhespin 1 index card	
1.4	2	X		Make sure you have a bag of materials from Lesson 1.2 for each pair. Add a rubber ball to each bag.	
2.1	1	х		For each group of four students prepare a bag with the following materials: You will pass each group two ring magnets as well 1 small paper clip - 1 steel spoon - 1 plastic spoon - 1 when it is plasted to the spoon - 1 plastic spoon - 1 when it is plastic spoon - 1 when it is plastic spoon - 1 when it is plastic spoon - 1 plastic s	
2.2	1	x		Add to bag from lesson 2.1 • 1 brass-plated paper fastener (brad) • 1 solid-brass paper fastener (brad) • 1 twist tie with iron core • 1 piece of steel wool • 1 scrap of aluminum foil	
2.3	1	×		For each pair of students: •1 copy of Handbook of Forces • 2 ring magnets •1 small paper clip •2 sticky notes*	
3.1	2	x		Assemble sets of investigation materials. Each pair of students will need one set of the following investigation materials.  1 paper clip 1 domino 1 heavy book	
3.3	1	×		For each pair of students: •1 domino •1 rubber ball •1 ring magnet •1 ramp (cardboard half-pipe) •1 folded index card •1 paper clip •1 piece of wood (craft stick) •1 steel spoon •1 washer •2 wooden blocks with hooks •1 cardboard half-pipe •1 rubber band •1 rubber band	
4.1	2	x		Each pair of students will receive one set of investigation materials:  2 ring magnets  1 peca of string (8 inches long)  4 pieces of string (8 inche song)  4 pieces of masking lape (1 inch each)	
4.2	ī	×		For Each Pair of Students: • 2 ring magnets • 1 large pleces of cardboard (7" x 3.5") • 1 small plices of cardboard (3.5" x 2") • 1 plastic cup • 1 paper clip with a piece of string (about 8" long) tied to it • several pieces of masking tape • 4 sticky notes • 1 copy of Handbook of Forces	

- Open Your **Lesson Guides Only**
- Start with **Chapter 1** and look for the **hands** icon
- and prep



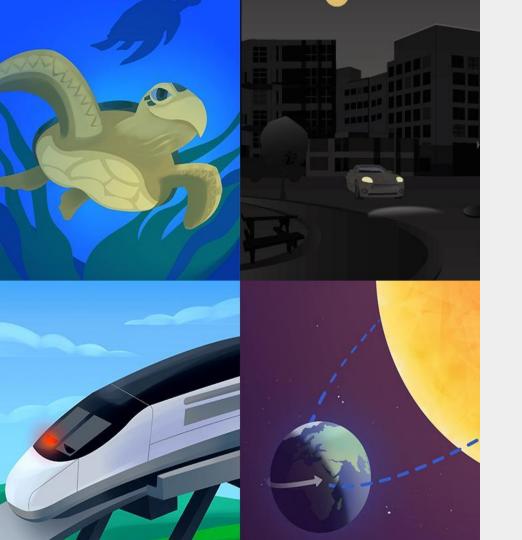
Inheritance and Traits

Lesson Guides

Chapter 1 Activities

## Questions?





## Plan for the day: Part 1

- Introduction and Framing
- Phenomenon-based Instruction
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#### Next Generation Science Standards

#### 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
Chemical reactions	There's a reddish-brown substance in a town's tap water.

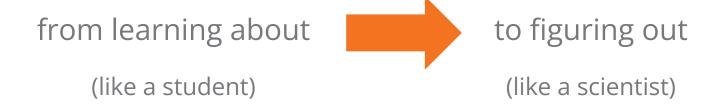
## Next Generation Science Standards

## How might learning be different?

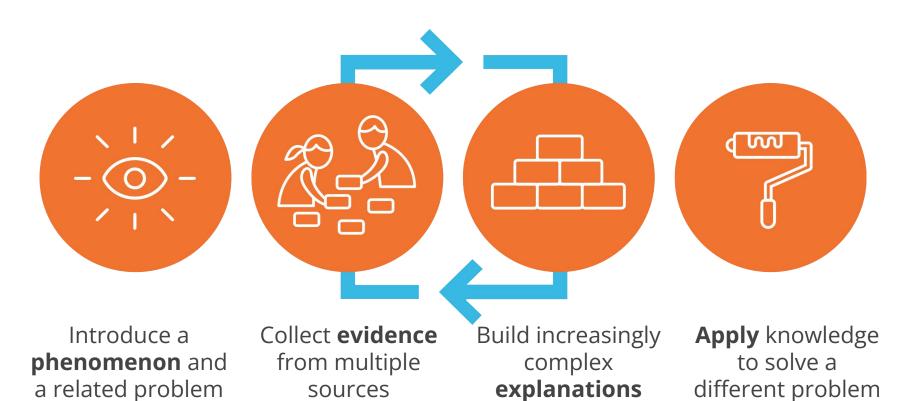
Topic-based	Phenomenon-based	
Chemical reactions	There's a reddish-brown substance in a town's tap water.	
Electric circuits	A flashlight won't turn on, even though it used to work.	
Natural selection	A population of newts has become more poisonous over time.	

## Comparing topics and phenomena

A shift in science instruction



## **Amplify Science Approach**

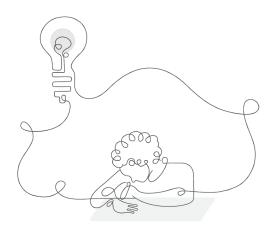


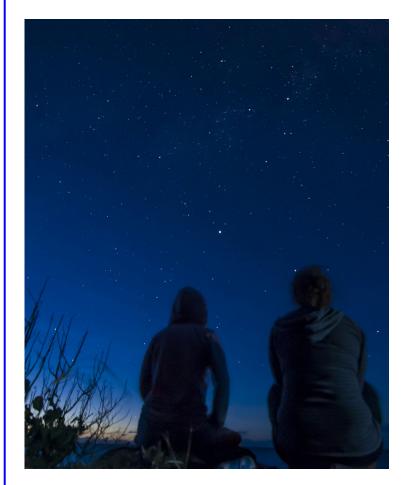
### Previewing the unit

### Introducing the phenomenon

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

Pay attention to 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.

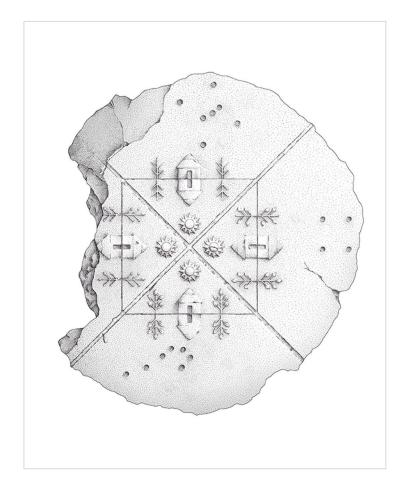
You will take on the role of astronomers as you try to solve a mystery by investigating things we see in the sky as we're standing on Earth.







Lesson 1.1: Pre-Unit Assessment



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?

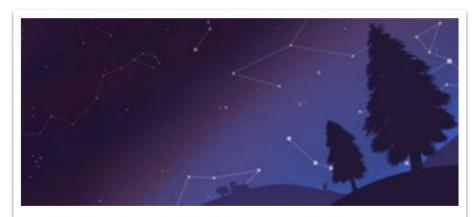
We want to put the artifact on display at the musuem, and it would be nice to show people how it might have looked before it was broken.

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

### **Amplify Science**

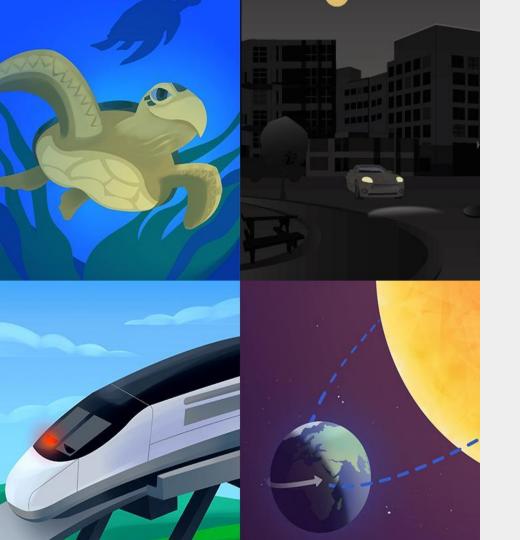
### Anchoring phenomenon

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









## Plan for the day: Part 1

- Introduction and Framing
- Phenomenon-based Instruction
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Chapters

Lessons

**Activities** 







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

6 Lessons





we investigate why

Lesson 2.2:

Lesson 2.3:

Lesson 2.4:

Lesson 2.5:

Lesson 2.6:

TEACHER-LED DISCUSSION Looking for Patterns



TEACHER-LED DISCUSSION Making Observations from Mount Nose



STUDENT-TO-STUDENT DISCUSSION Reflecting on the Model



TEACHER-LED DISCUSSION Preparing to Investigate Stars



### Let's Go Live!



## Navigation summary

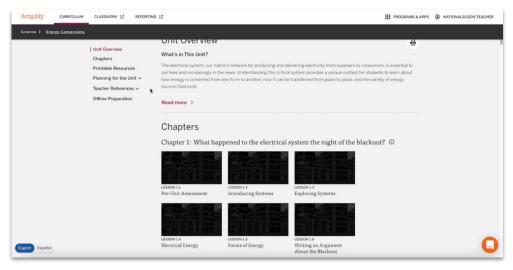
- 1. CLICK the caret to select your grade-level.
- 2. Select your first unit.
  - a. You are now on the Unit Landing Page.
- 3. Expand the **Planning for the unit** menu.
  - a. Or scroll down below the lesson buttons.



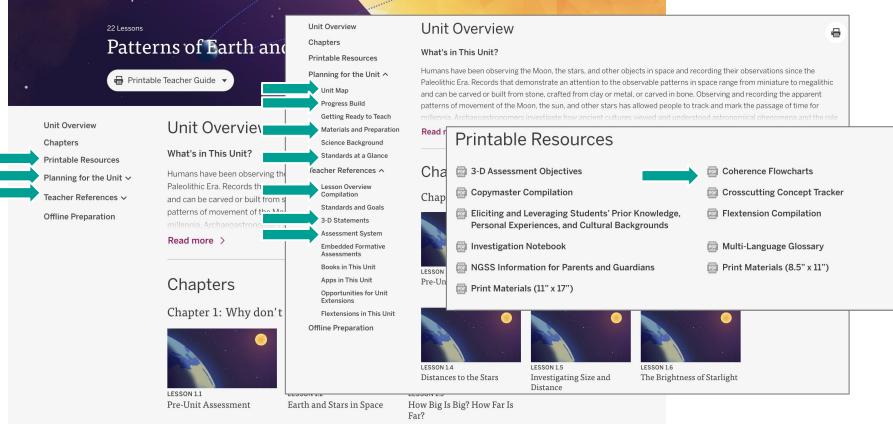
### Unit Level resources

Collection of resources to support planning and day-to-day instruction in the unit:

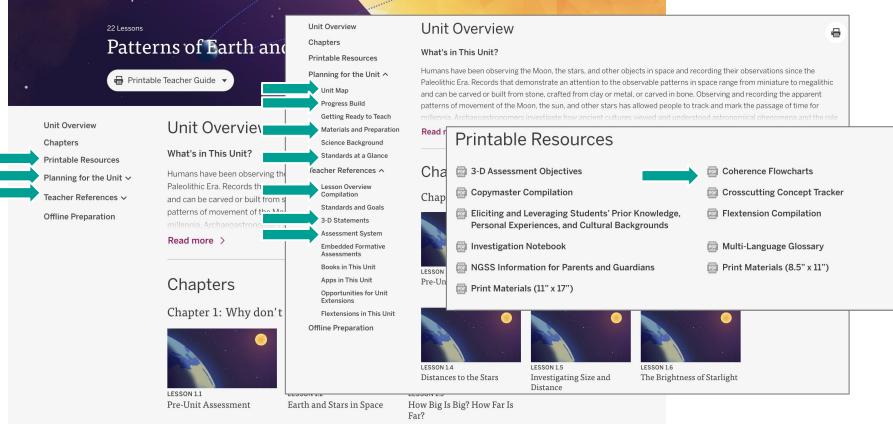
- Printable Resources
- "Planning for the Unit" documents
- Teacher References



## **Key Unit Documents for Unit Planning**



## **Key Unit Documents for Unit Planning**



#### **Core Unit Planning & Internalization**

Unit Title:

#### 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:
Unit Question:	Relationship between the Unit Phenomenon and Unit Question:
By the end of the unit, students figure out	
	6
How do students engage with three-dimensional learning to figure out the p	henomenon/real-world problem in your unit?
	7

#### **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:

#### Patterns of Earth and Sky

#### 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?

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?

Unit Question:

Why do we see different stars at different times?

Student Role:

#### Astronomers

Relationship between the Unit Phenomenon and Unit Ouestion:

Students apply their understanding of why we see different stars at different times to explain what is shown on the artifact, and what might be on the missing piece.

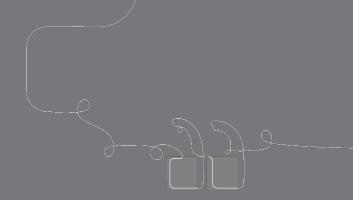
By the end of the unit, students figure out...

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

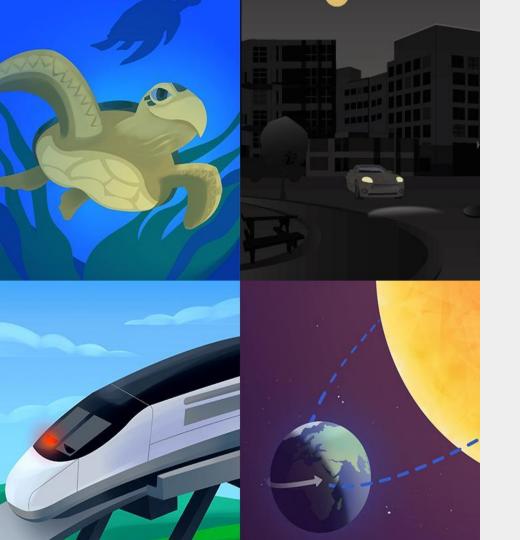
How do students engage with three-dimensional learning to figure out the phenomenon/real-world problem in your unit?

Т

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



## Questions?



## Plan for the day: Part 1

- Introduction and Framing
- Phenomenon-based Instruction
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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.

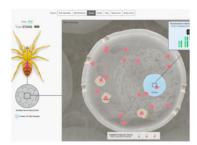
#### Para acceder a este sitio en español haga clic aquí.

Amplify welcomes you and your learner to the Science program for the new school year. We are very excited to provide you with exceptional learning opportunities through Science. Below are resources and helpful guides for enabling your student to have the most productive experience with our platform throughout the year.











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

## Welcome to Amplify Science!

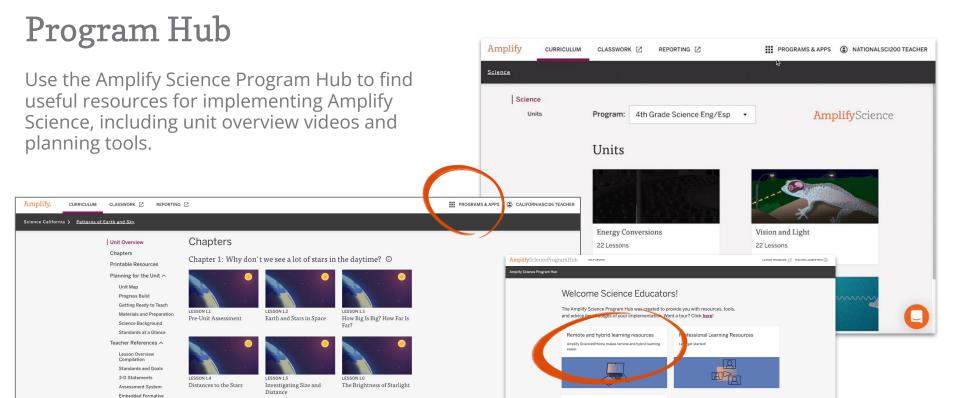
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Additional Unit Materials

Additional resources to complement the units you're

Assessments

Offline Preparation

Books in This Unit

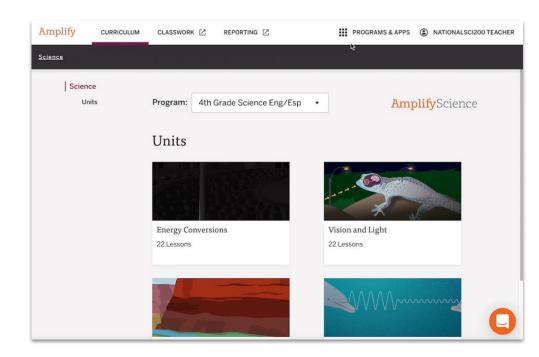
Apps in This Unit
Opportunities for Unit
Extensions
Flextensions in This Unit

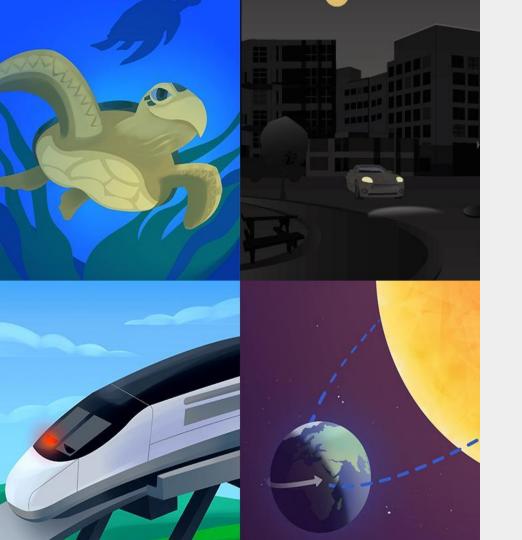
Explaining When We See

### Explore the Program Hub

Familiarize yourself with the Program Hub.

Be ready to share one resource you've found that you'll use while planning and teaching.





## Plan for the day: Part 1

- Introduction and Framing
- Phenomenon-based Instruction
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- Closing

## Overarching goals

- Explain how students engage in phenomenon based and 3D learning to construct an understanding of the science concepts introduced in the unit
- ✓ Internalize the unit and apply your new understanding to plan for the diverse needs of your classroom and students

### Closing reflection

Based on our work in Part 1, share:

Head: something you'll keep in mind

**Heart:** something you're feeling

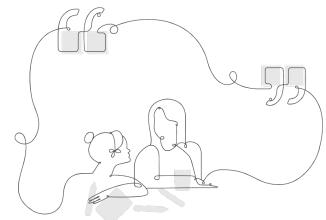
Feet: something you're planning to do

### Onsite Upcoming Professional Development!

# Part 3: Unit 1 - Supporting English Learners

 October 29th (Ochoa Learning Center, East)

In this session, participants explore strategies to support English learners' ability to do, talk, read, write, visualize, and construct arguments like scientists. Participants will identify the supports and strategies embedded in Unit 1 by engaging in model activities followed by independent planning.



### 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:

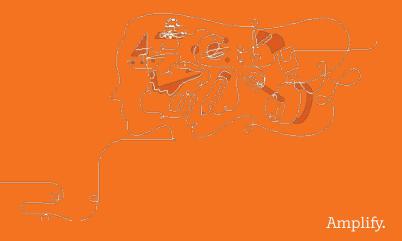
Unit Internalization / Guided Planning (Part 1)

#### **Professional Learning Specialist name:**

Insert name

(insert email, if you would like)

## Part 2: Guided Lesson Planning



## Welcome to Amplify Science!

# Do Now: Log in through your Schoology account

or use Demo Account

- 1. Go to **learning.amplify.com**
- 2. Select Log in with Amplify
- If you're already logged in with other Google accounts, click Use another account
- 4. Enter teacher demo account credentials
  - UN: californiasci60@pd.tryamplify.net
  - PW: AmplifyNumber1
- 5. Explore as we wait to begin

Welcome to **Amplify** 



SSO login

# **Amplify** Science

Unit Internalization / Guided Planning

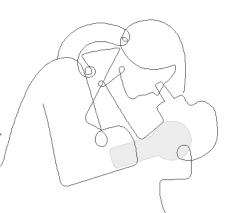
Grade 5, Unit 1: Patterns of Earth and Sky

Part 2

School/District Name: LAUSD

Date: October, 2022

Presented by:

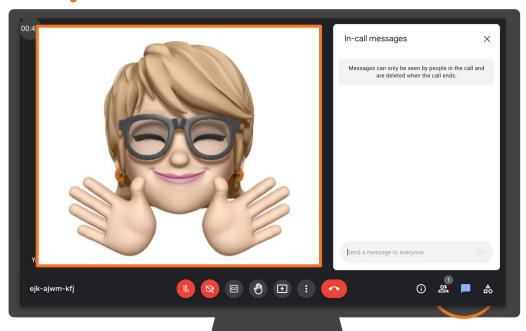




#### Ice Breaker!

### Who do we have in the room today?

- Question 1: Which aspects
   of implementing the
   Amplify Science standard
   curriculum has been the
   most successful?
- Question 2: Which aspects have been the most challenging?



## 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.

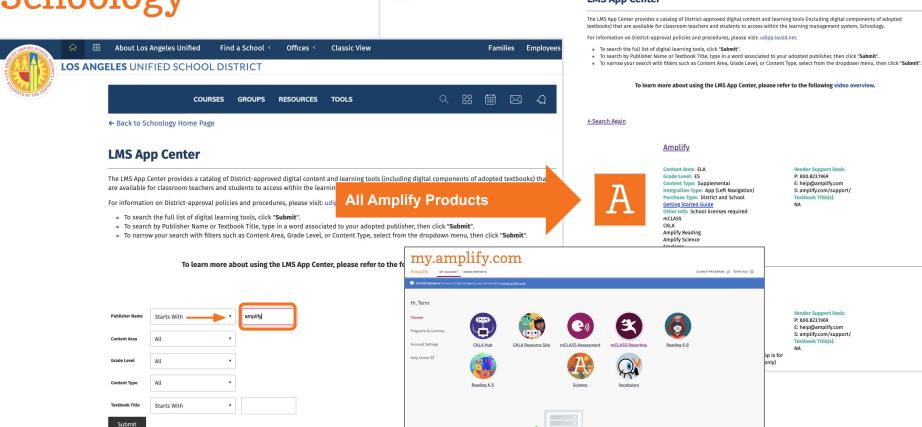
Sincerely, Amplify

### 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.

### Schoology





## Join Amplify Science Schoology Group

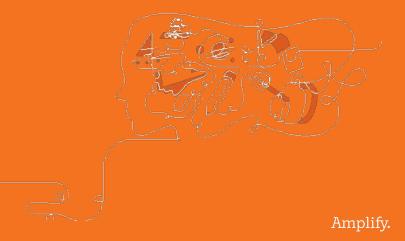
To join Amplify Science Schoology ES Group: W4PK-W466-63F5B

#### 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

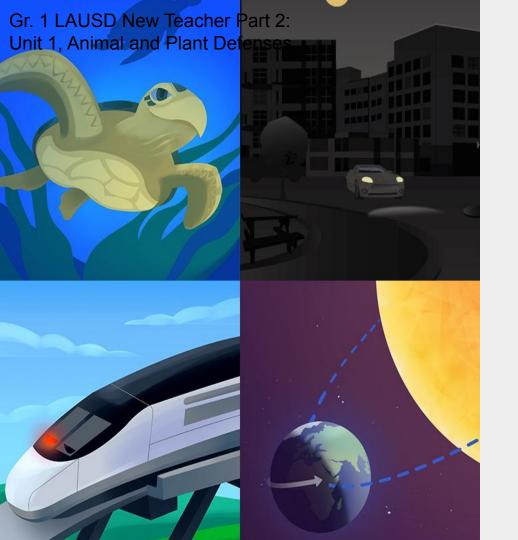
#### Part 2: Guided Lesson Planning



#### Overarching goals

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

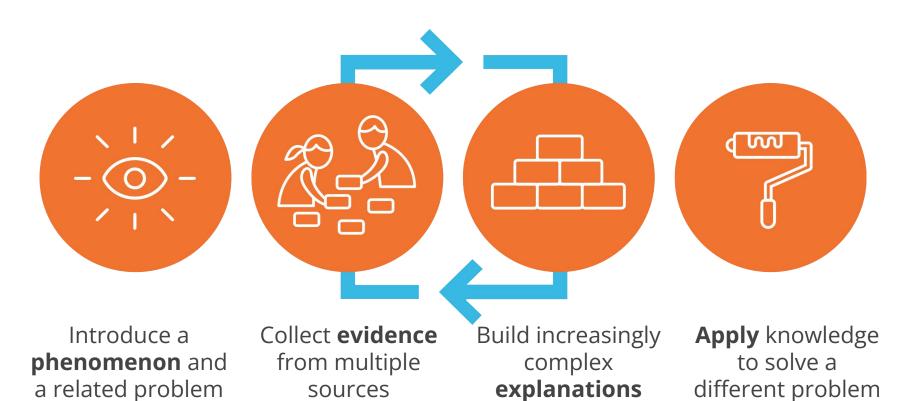
- Describe what teaching and learning look like in Amplify Science.
- ☐ Prepare to teach using Amplify Science resources.



#### Plan for the day: Part 2

- Teaching and Learning in an Amplify Science Lesson
- Instructional Approach Reflection
- Planning a Lesson
- Closing

#### **Amplify Science Approach**



## Patterns of Earth and Sky

Why do we see different stars at different times?

This unit involves understanding the position of stars in relation to Earth and the sun, as well as figuring out how Earth's spin and orbit cause us to see different things across a day and across a year

#### 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

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. They learn that stars are all around us in space, develop an understanding of scale and distance in the universe, and discover how the spin and orbit of our planet causes us to observe daily and yearly patterns of stars.



#### 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

## Explaining the phenomenon: Science Concepts

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



#### Progress Build

#### **Energy Conversions**

**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 2

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

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

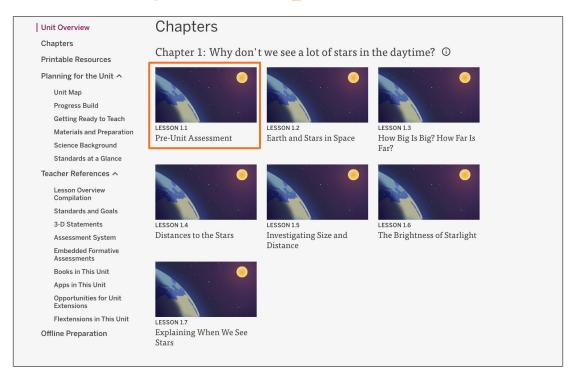
Level 3

Level 1

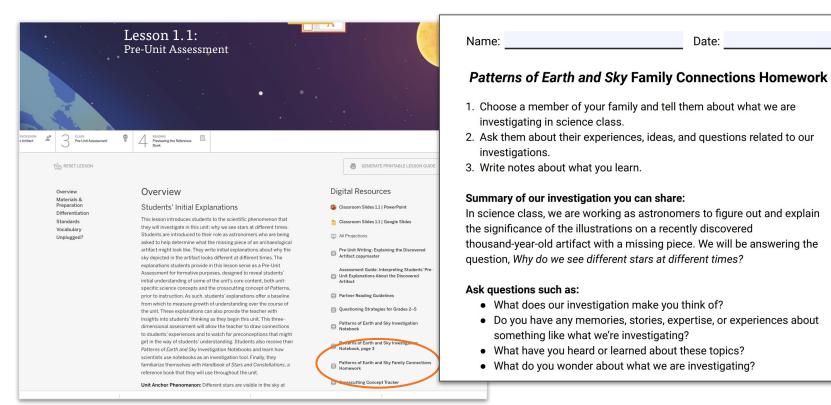
The sun looks bigger and brighter than all other stars because it is much closer to Earth than all other stars.

#### Beginning the Unit

#### The first lesson of every Unit is a pre-unit assessment.

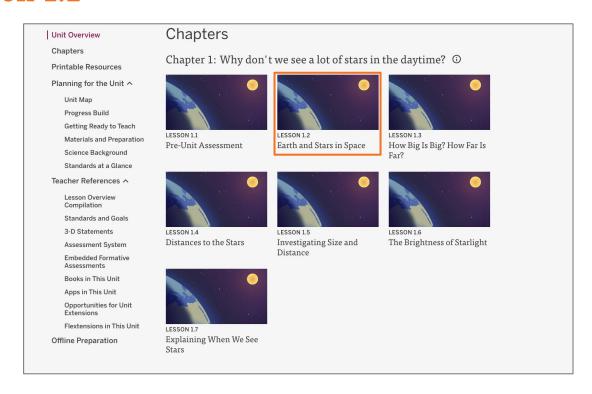


#### Patterns of Earth and Sky - Family Connection



#### Beginning the Unit

#### Model lesson 1.2



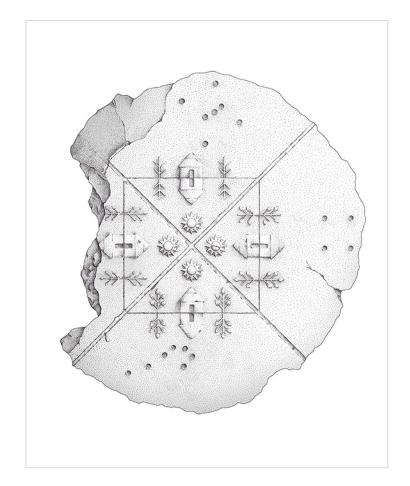
Grade 5 | Patterns of Earth and Sky

Lesson 1.2: Earth and Stars
in Space



Activity 1
Modeling the Shape of
Earth





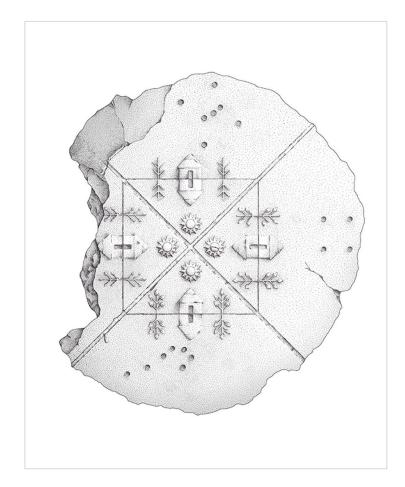
As **astronomers**, we are trying to figure out what the missing piece of this artifact might look like. To figure this out, we need to be aware of when things appear in the sky.



If we went outside **right now**, what do you think we would see in the sky?

What if we waited **until dark**, what do you think we would see in the sky then?

Lesson 1.2: Earth and Stars in Space Activity 1



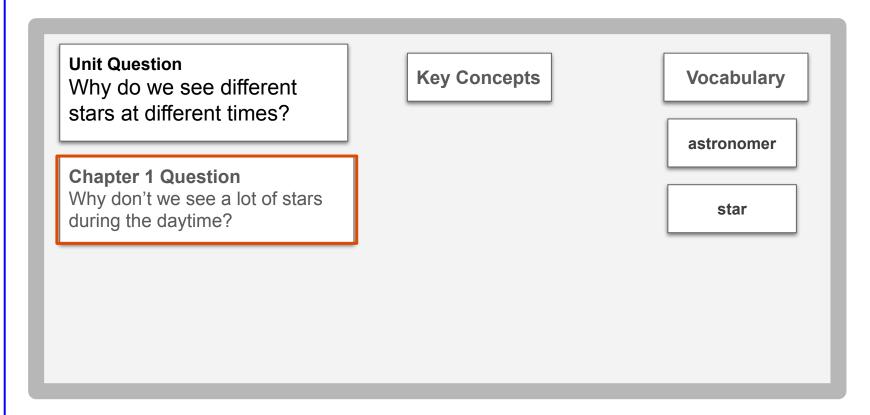


Do you see anything on the artifact that might also be **something you can see in the sky**? Lesson 1.2: Earth and Stars in Space Activity 1



Why don't we see a lot of stars during the daytime?

#### Patterns of Earth and Sky Classroom Wall



If we want to understand what we see in the sky, we should first decide how we will show **Earth's shape**.

For this, we can use **models**.

Lesson 1.2: Earth and Stars in Space Activity 1





In what way are these models **similar** to Earth's shape?

In what ways are these models **different** from Earth's shape?



## Which model of Earth do these images support? Globe or map?





The photographs of Earth from space are evidence, or information that supports our idea, that Earth is a sphere like the globe, rather than flat like the map.

Lesson 1.2: Earth and Stars in Space Activity 1





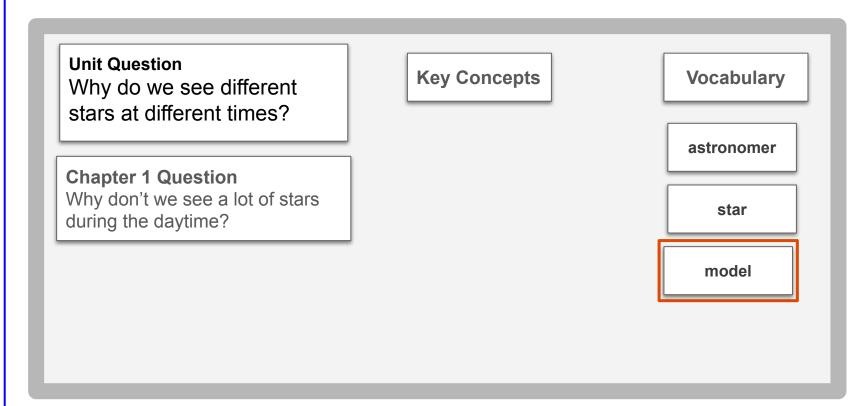
When might a **map** be a more useful representation of Earth?

#### Vocabulary

#### model

something scientists make to answer questions about the real world

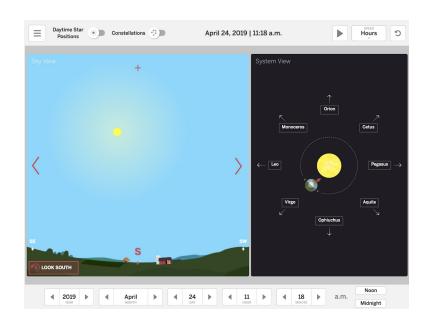
#### Patterns of Earth and Sky Classroom Wall





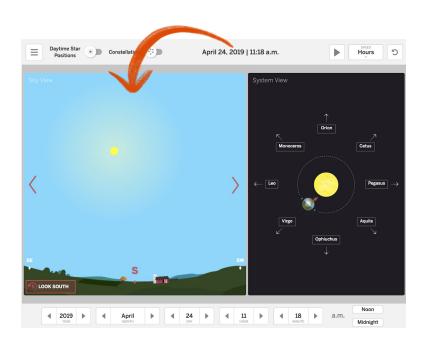
# Exploring a Simulation of Earth and Sky





This Sim is a scientific model of Earth and the sky. Although this model is different from the real Earth and sky, it is also accurate in many ways.

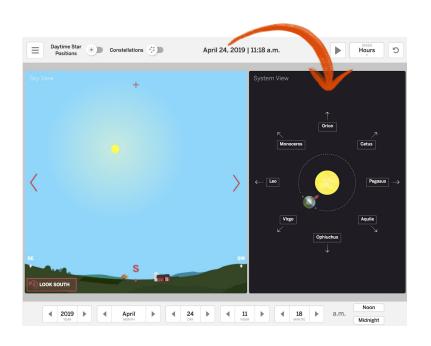
Lesson 1.2: Earth and Stars in Space Activity 2



#### **Sky View:**

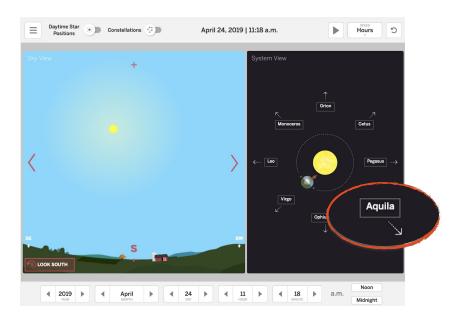
This view shows the sky as if you are **standing on Earth.** 

Lesson 1.2: Earth and Stars in Space Activity 2



#### **System View:**

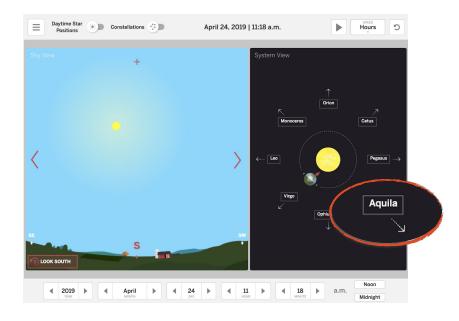
This view shows Earth as if you are seeing it from above Earth's North Pole, but far enough away to also see the sun.



#### **Constellations:**

The name labels (in boxes) do not represent the actual constellations because they are too far away.

Activity 2



#### **Arrows:**

The white arrows represent the direction in which you would need to travel in space in order to get to those constellations.

Exploring Stars in a Simulation		
Explore the Sim w	vith your partner, and then record your ideas.	
	gs you discovered about how the Sim works.	
a. List some diling	gs you discovered about now the Sim Works.	

Patterns of Earth and Sky-Lesson 1.2

5

Turn to page 5, Exploring Stars in a Simulation, in your notebooks.

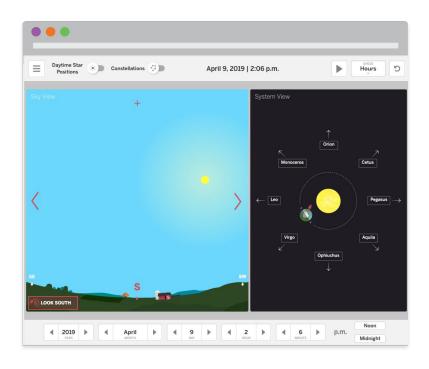


**Explore the Sim** with your partner, and then **record** some things you discover and some questions.



Activity 3
Sharing What We
Discovered







## What did you **notice** about the Sim?

When we press LOOK SOUTH we turn our view to the south horizon.





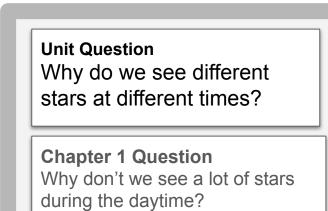
# Activity 4 Ideas About Where the Stars Are



We're going to investigate this question:

Where are the stars in space?

# Patterns of Earth and Sky Classroom Wall



Investigation Question
Where are the stars in space?

**Key Concepts** 

Vocabulary

astronomer

star

model

Lesson 1.2: Earth and Stars in Space Activity 4

Think-Write-Pair-Share: Where Are the Stars in Space?

1. Think about the question, Where are the stars in space?

2. Record your ideas.

3. Share your ideas with your partner.

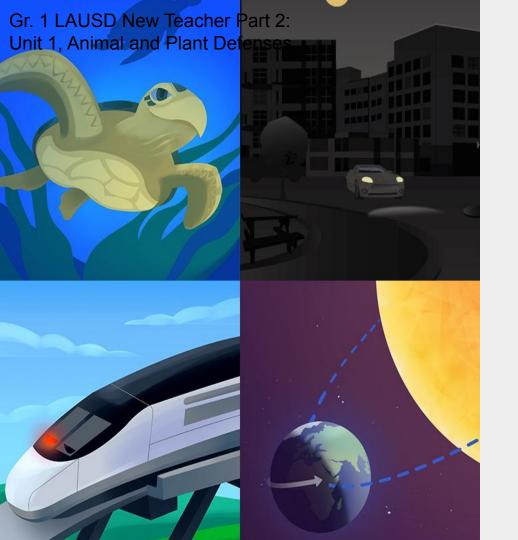
Turn to page 6 in your notebooks.



# **End of Lesson**



Amplify.



# Plan for the day: Part 2

- Teaching and Learning in an Amplify Science Lesson
- Instructional Approach Reflection
- Planning a Lesson
- Closing

# Gathering evidence

## Patterns of Earth and Sky Lesson 1.2

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

Investigation Question: Where are the stars in space?

















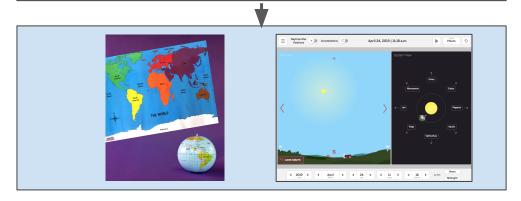
# Introducing the Investigation Question

## Where are the stars in space?

Before introducing the Investigation Question, students figure out

- ✓ the Earth is sphere
- ✓ to use models
- ✓ how to explore the Sim

Investigation Question: Where are the stars in space?

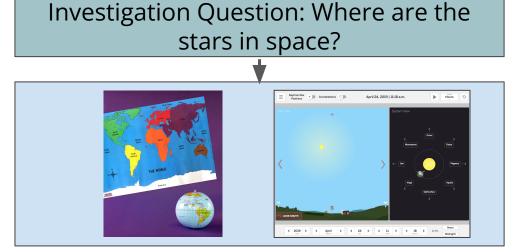


# Evidence sources work together Comparing models of the Earth

How do these activities

work together to

support understanding of
where are the stars in
space?

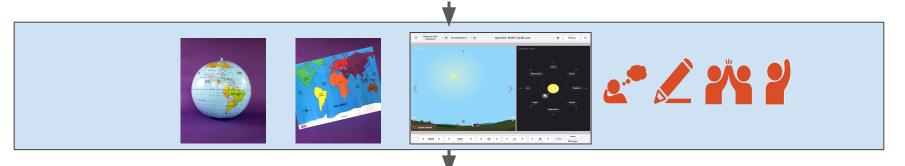


# Gathering evidence

## Patterns of Earth and Sky Lesson 1.2

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

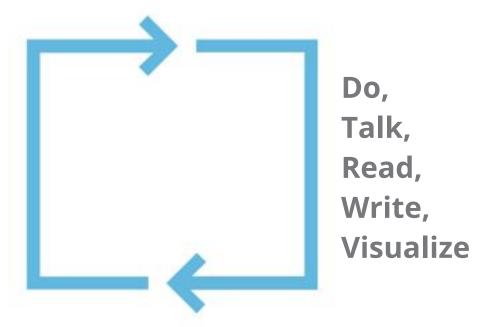
Investigation Question: Where are the stars in space?



What have students figured out so far?

# Multimodal learning

# Gathering evidence over multiple lessons



# Evidence sources work together

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







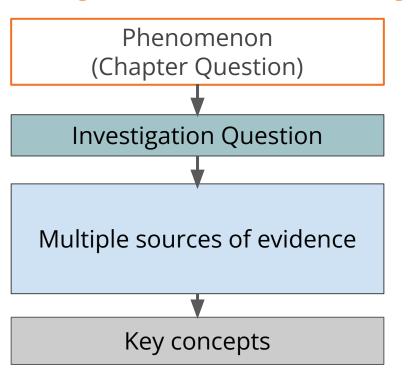








## A diagram of student learning



Chapter Question: Why don't we see a lot of stars in the daytime? Investigation Question: Where are the stars in space? 

## Patterns of Earth and Sky Lesson 1.2-1.4

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

Investigation Question: Where are the stars in space?

Evidence: Compare models of Earth (1.2)

Evidence: Read How Big is Big? How Far is Far? (1.3)

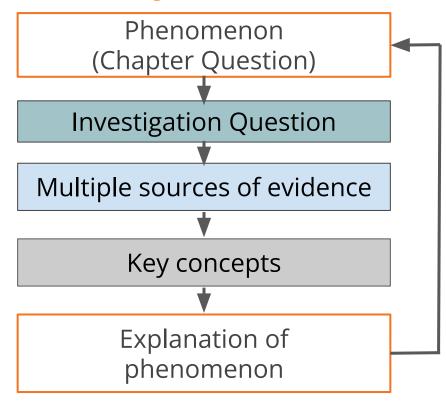
**Evidence: Investigate distances to stars in the Sim (1.4)** 

**Evidence: Create a physical model of Great Square of Pegasus (1.4)** 

**Evidence: Compare representations of stars (1.4)** 

Key concepts: Stars are very far away from Earth in every direction. The sun is the only star in our solar system. Other stars are far outside our solar system.

## A diagram of student learning

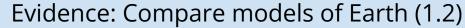


## Patterns of Earth and Sky Lesson 1.2-1.4

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



Investigation Question: Where are the stars in space?



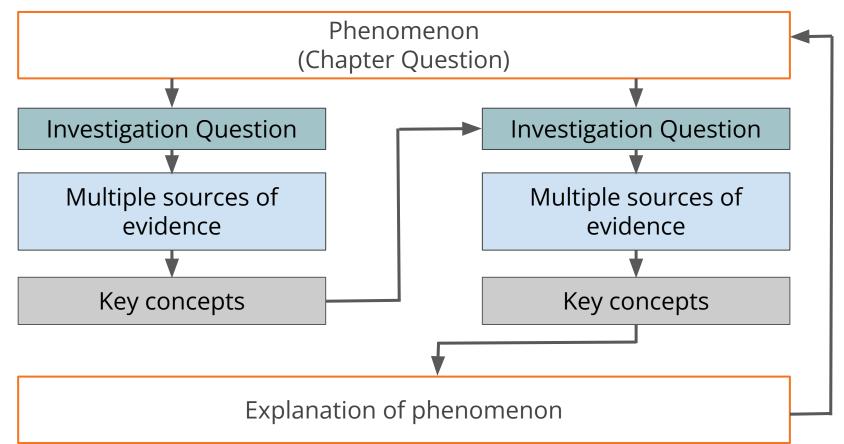
Evidence: Read How Big is Big? How Far is Far? (1.3)

Evidence: Investigate distances to stars in the Sim (1.4)

Evidence: Create a physical model of Great Square of Pegasus (1.4)

Evidence: Compare representations of stars (1.4)

Key concepts: Stars are very far away from Earth in every direction. The sun is the only star in our solar system. Other stars are far outside our solar system.



#### Unit Anchor Phenomenon

Problem students work to solve

#### Chapter-level Anchor Phenomenon

Chapter 1 Question

#### Investigative Phenomena

Investigation Questions

Evidence sources and reflection opportunities

Key concepts

Application of key concepts to the problem

Explanation that students can make to answer the Chapter 1 Question

#### Patterns of Earth and Sky: Analyzing Stars on Ancient Artifacts

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?

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?

Sometimes stars are visible in the sky, sometimes only the sun is visible.

Where are the stars in space? (1.2-1.4)

- 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)
- 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)

Sometimes stars are visible in the sky, sometimes only the sun is visible. If the stars are all around us, why can't we always see them? (1.5–1.6)

- 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)
- The sun looks bigger and brighter because it is much closer to Earth
- than other stars. (1.6)

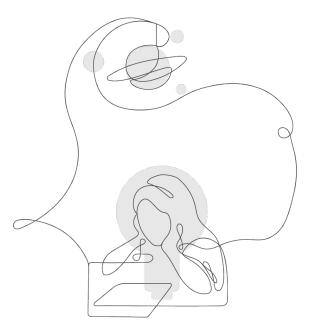
  The sun is the only star we can see in the daytime because the sun looks so bright. (1.6)
- Discuss the Chapter 1 Question in pairs (1.7)
   Write a scientific explanation to answer the Chapter 1 Question (1.7)
- Write a scientific explanation to answer the Chapter 1 Question (1.7)
   Discuss ideas about the artifact (1.7)

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.

# Explore the Coherence Flowchart

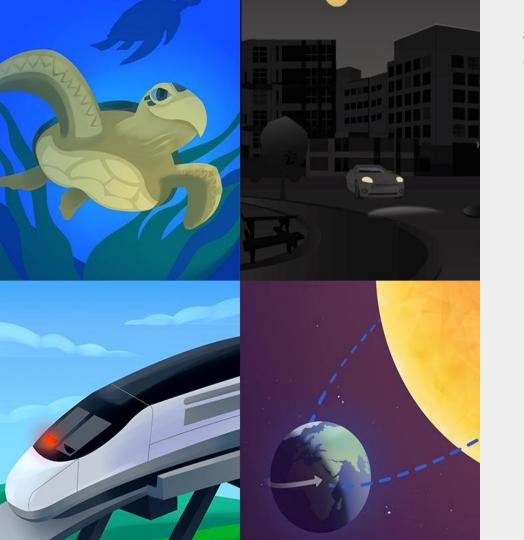
Skim the Chapter 1 Coherence Flowchart.

Think about how you might use the Coherence Flowchart to summarize learning throughout Chapter 1.



# Questions?

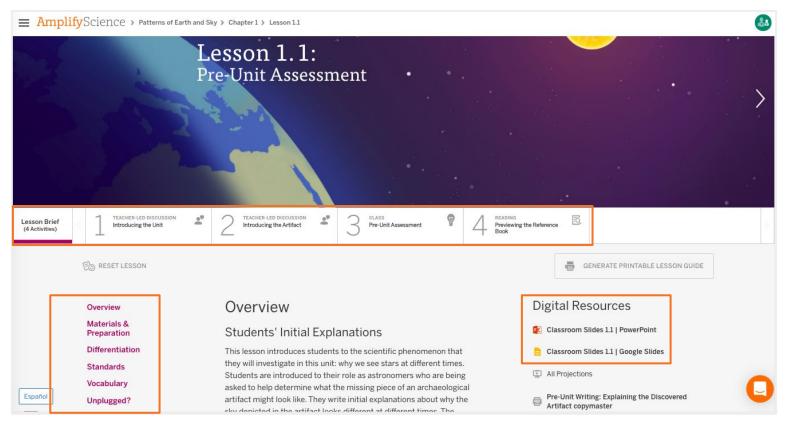




# Plan for the day: Part 2

- Teaching and Learning in an Amplify Science Lesson
- Instructional Approach
   Reflection
- Planning a Lesson
- Closing

## The Lesson Brief



# 4 Easy Steps to Teaching a lesson

#### **DIRECTIONS:**

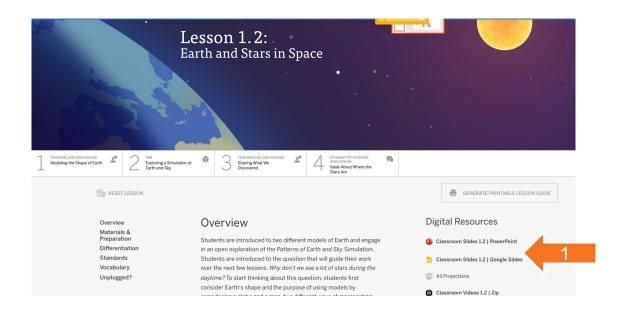
- Download the Classroom Slides for Lesson 1.1 and review them.
- 2. Read the Overview.
- 3. Explore the Materials & Preparation document.
- 4. Read the **Differentiation** document.



# 4 Easy Steps to Teaching a lesson

#### **DIRECTIONS:**

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



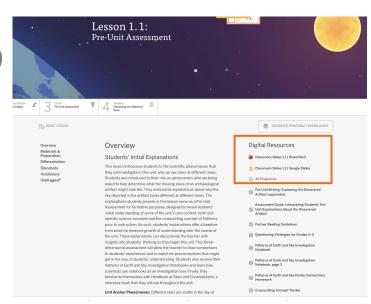
# Preparing to teach

## Classroom Slides

- Open the Classroom Slides under the Digital Resources (a lesson of your choice)
- 2. Read through the Classroom Slides including the **presenter notes** to gain a better understanding of the lesson.

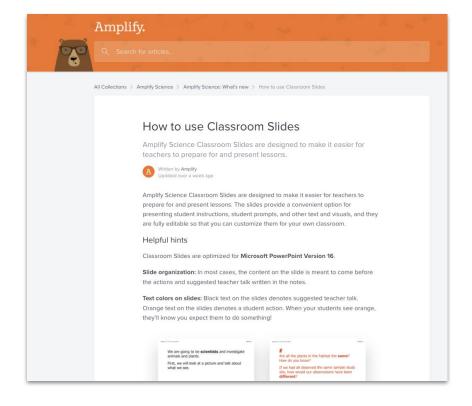
#### 3. Consider:

 What features of the Classroom Slides will support you in teaching this lesson?



# Teaching with Classroom Slides

This detailed guide on the Amplify Science Help Site includes tips for teaching with Classroom Slides and information about the different symbols and activity types you'll find in the slide deck.



# Using Classroom Slides as a planning tool

Teacher tip: Classroom Slides are a great visual summary of a lesson.

Many teachers download and flip through a lesson's Classroom Slides deck to preview what happens in the lesson.

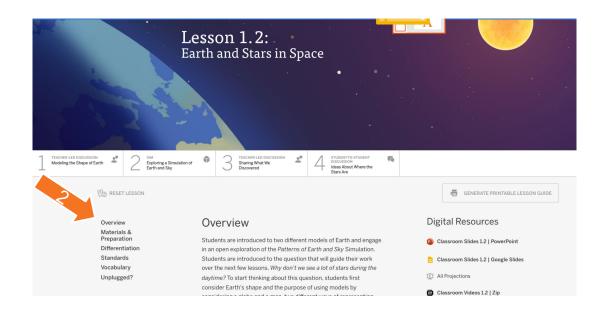
This is a useful first step for preparing to teach the lesson.



# 4 Easy Steps to Teaching a lesson

#### **DIRECTIONS:**

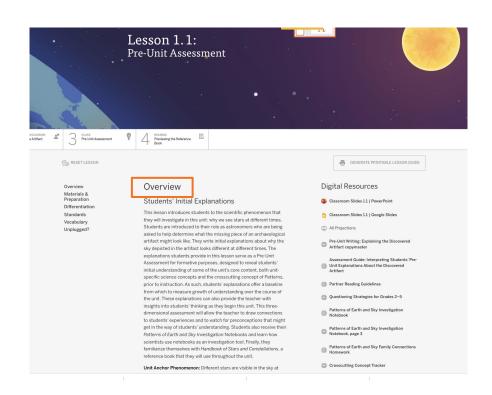
- Download the Classroom Slides for Lesson 1.1 and review them.
- 2. Read the Overview.
- 3. Explore the Materials & Preparation document.
- 4. Read the **Differentiation** document.



# Preparing to teach

## The Overview

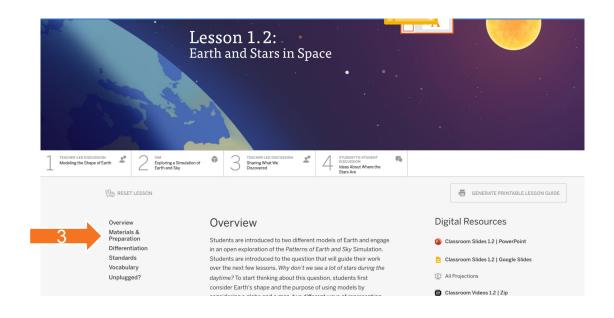
- Read through the lesson overview.
- Find the purpose of the lesson.



# 4 Easy Steps to Teaching a lesson

#### **DIRECTIONS:**

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



# Preparing to teach

## Materials and Prep

#### Review the materials needed for:

- The Classroom Wall
- For the Class
- For each pair of students (if applicable)
- Preparation

#### Materials & Preparation

#### Materials

#### For the Classroom Wall

- Chapter 1 Question: Why don't we see a lot of stars during the daytime?
- vocabulary: model

#### For the Class

- · 1 inflatable globe
- folded world map
- masking tape\*
- optional: Chapter 1 Home Investigation: Observing the Stars copymaster

#### For Each Pair of Students

1 digital device\*

#### For Each Student

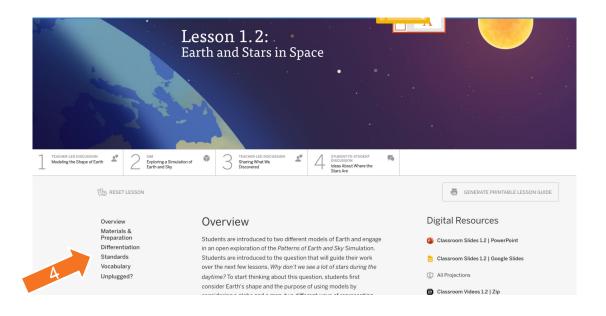
- optional: 1 copy of Chapter 1 Home Investigation: Observing the Stars student sheet
- Patterns of Earth and Sky Investigation Notebook (pages 5–6, optional: page 4)

\*teacher provided

# 4 Easy Steps to Teaching a lesson

#### **DIRECTIONS:**

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



# Preparing to Teach

## Lesson-specific differentiation

- Embedded supports
- Potential challenges
- Strategies for:
  - English Learners
  - Students who need more support
  - Students who need more challenge

#### Differentiation

#### **Embedded Supports for Diverse Learners**

Accessible examples. The lesson begins with students accessing prior knowledge by discussing what they normally expect to see in the sky during the day and at night. They then use models of Earth that are likely fairly well-known to them—a map and a globe—so they can begin thinking about models and establish that Earth is a sphere. Beginning class with these common experiences and models from which to draw initial student thinking helps students begin the unit on common footing and provides a common base from which to build the more complex conceptual understanding that follows. In addition, thinking about simple and familiar models prior to starting their exploration of the more complex model offered by the Patterns of Earth and Sky Simulation helps prepare students to think critically about the Sim during Activity 2.

Visual representations. Visual models and representations are essential for many students as they make sense of two-dimensional and three-dimensional representations of Earth. The Patterns of Earth and Sky Simulation provides a highly visual, interactive, and engaging tool for students to orient themselves on Earth and to explore their positional relationship to different stars.

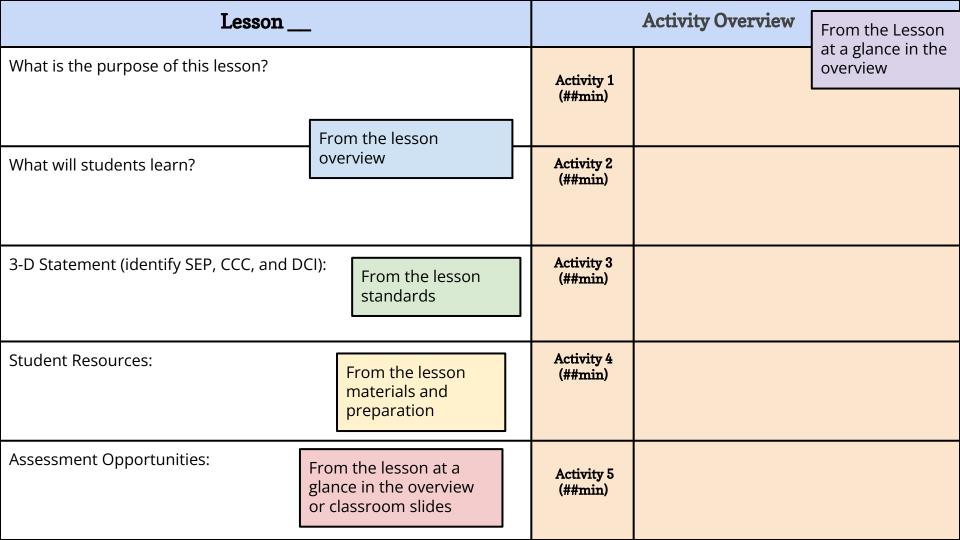
**Discourse routine.** Engaging in Think-Write-Pair-Share provides students with an opportunity to activate their prior knowledge and discuss science ideas. This routine is especially helpful for English learners: it allows time for students to organize their own ideas before discussing them with a partner, and it provides students the opportunity to rehearse language with a peer before sharing with the whole class.

# 4 Easy Steps to Teaching a lesson

#### **DIRECTIONS:**

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





## Directions for Planning Time

(Make your own copy first before planning)

- Make a copy of this planning slide.
- 2. Download the classroom slides for the lesson you would like to plan
- 3. Insert the planning slide at the front of the classroom slide deck
- 4. Navigate at the lesson level to answer the questions on this slide
- 5. Make edits directly on your side deck to meet the needs of your students



Lesson_1.2_	
What is the purpose of this lesson? This lesson reinforces the idea that Earth is a sphere, gives students a chance to consider how and when to use models, and introduces students to the Sim that	Activity 1 (20 min)

**Activity Overview** 

Activity 2

(20 min)

Activity 3

(10min)

Activity 4 (10

min)

**Activity 5** 

(##min)

Modeling the Shape of Earth

Sharing What We Discovered

Ideas About Where the Stars Are

Exploring a Simulation of Earth and Sky

Locasa 19

Earth is a sphere. Scientists use models to explore their ideas about the real world. Models need to be like the things they represent in some ways, but models are different from what they represent in other ways. Different models can be useful

Students explore physical and digital models to begin understanding the shape and scale (scale, proportion, and quantity) of objects in space and communicate their

1 digital device\*, optional: 1 copy of Chapter 1 Home Investigation: Observing the Stars student sheet, *Patterns of Earth and Sky* Investigation Notebook (pages 5–6,

they will be using throughout the unit.

3-D Statement (identify SEP, CCC, and DCI):

initial ideas about where the stars are in space.

What will students learn?

for different purposes.

Student Resources:

Assessment Opportunities:

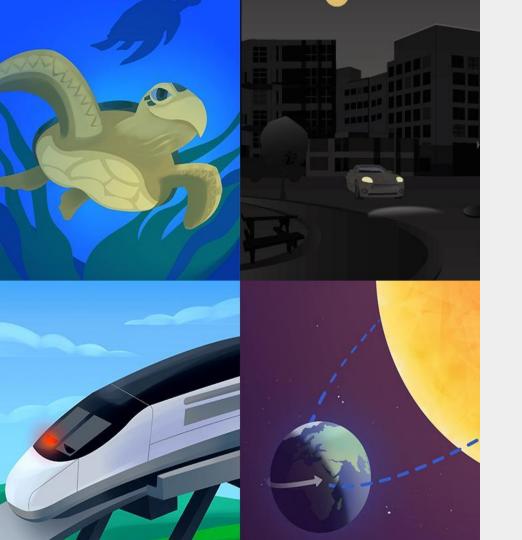
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optional: page 4)

Activity 1

# Questions?





# Plan for the day: Part 2

- Part 1 Review
- Teaching and Learning in an Amplify Science Lesson
- Instructional Approach
   Reflection
- Planning a Lesson
- Closing

## 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







### **Caregivers**

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

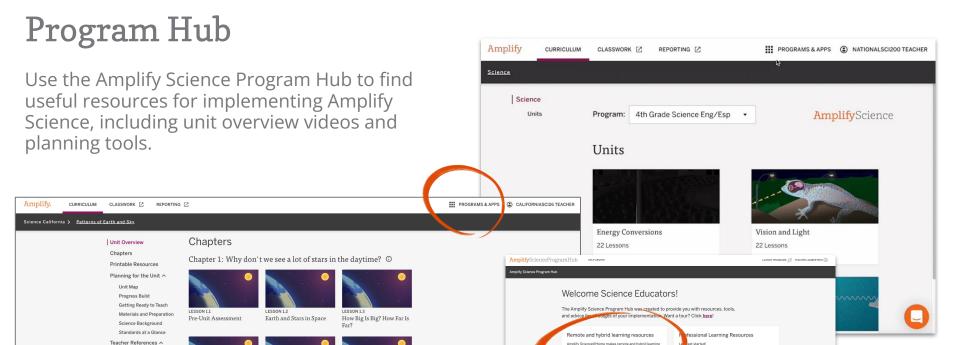


# Welcome to Amplify Science!

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

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

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



Additional Unit Materials

Additional resources to complement the units you're

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

Distances to the Stars

Explaining When We See

Investigating Size and

The Brightness of Starlight

# Overarching goals

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

- Describe what teaching and learning look like in Amplify Science.
- Prepare to teach using Amplify Science resources.

Jes ( )

# Closing reflection

Based on our work today in Part 2, share:

Head: something you'll keep in mind

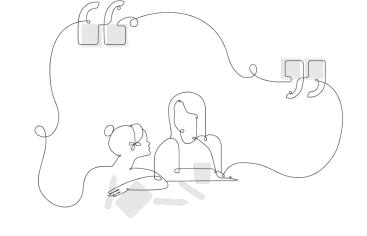
**Heart:** something you're feeling

Feet: something you're planning to do

Onsite Upcoming Professional Development!

# Part 3: Unit 1 - Supporting English Learners

- October 15th (Alta California ES, NW)
- October 29th (Ochoa Learning Center, East)



In this session, participants explore strategies to support English learners' ability to do, talk, read, write, visualize, and construct arguments like scientists. Participants will identify the supports and strategies embedded in Unit 1 by engaging in model activities followed by independent planning.

# 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 Internalization / Guided Planning

(Part 2)

### **Professional Learning Specialist name:**

Insert name

(insert email, if you would like)