

**Do Now:** Please use the chat to self-reflect on your ability to navigate the Amplify Science curriculum (1= very uncomfortable to 5 = very comfortable).

# Amplify Science

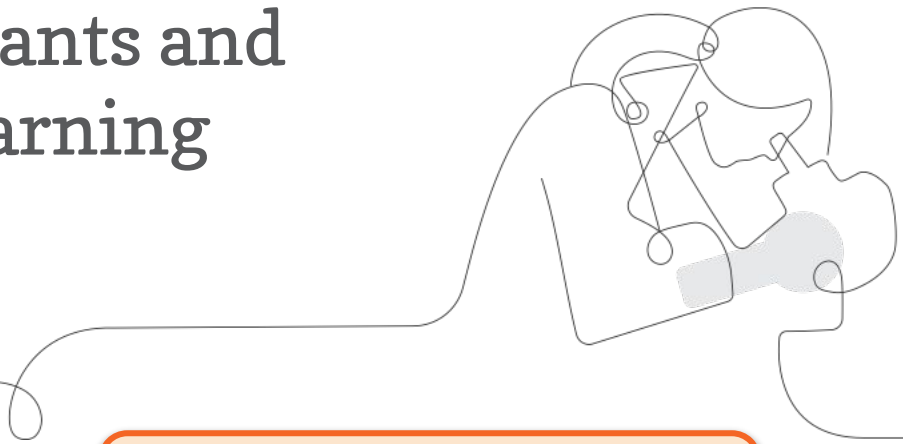
## Unit Internalization With @Home Resources

Deep-dive and strengthening workshop  
Inheritance and Traits, Grade 3

LAUSD

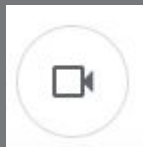
10/x/2020

Presented by Your Name



In a new tab, please log in to  
your Amplify Science account  
through Schoology.

# Norms: Establishing a Culture of Learners



- Please keep your camera on, if possible.
- Take some time to orient yourself to the platform
  - *“where’s the chat box? what are these squares at the top of my screen?, where’s the mute button?”*



- Mute your microphone to reduce background noise unless sharing with the group



- The chat box is available for posting questions or responses to during the training



- Make sure you have a note-catcher present

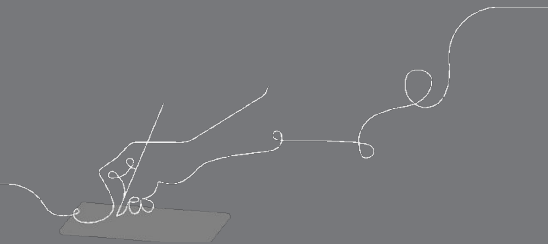


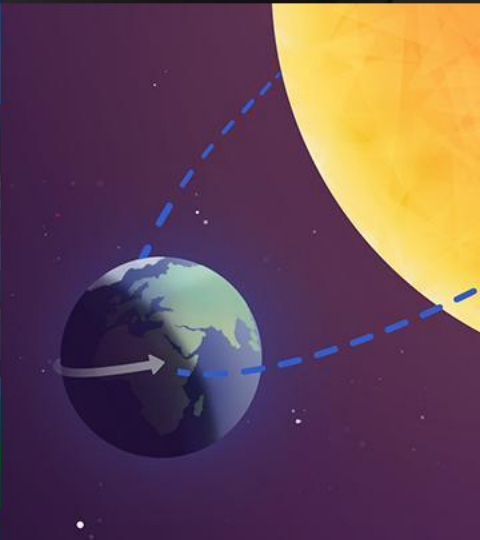
- Be an active participant - chat, ask questions, discuss, share!

# Workshop goals

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

- Leverage your understanding of your upcoming unit to make instructional decisions about remote learning using the Amplify Science@Home resources.
- Develop a multi-day plan for using @Home resources within your class schedule and instructional format.





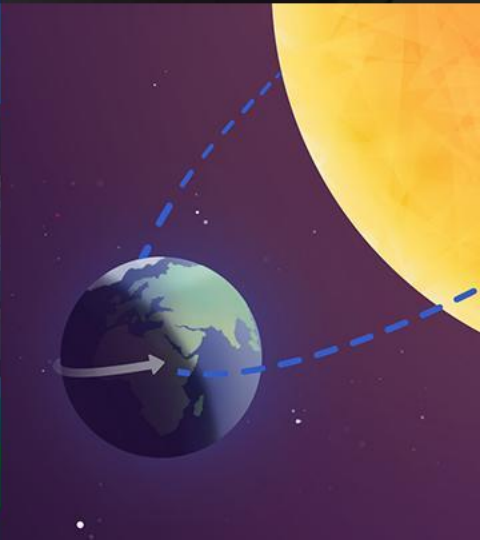
## Plan for the day

- Framing the day
- Amplify Science Instructional Materials
- Unit Internalization
- Planning to teach using @Home resources
- Reflection and closing





# Questions?



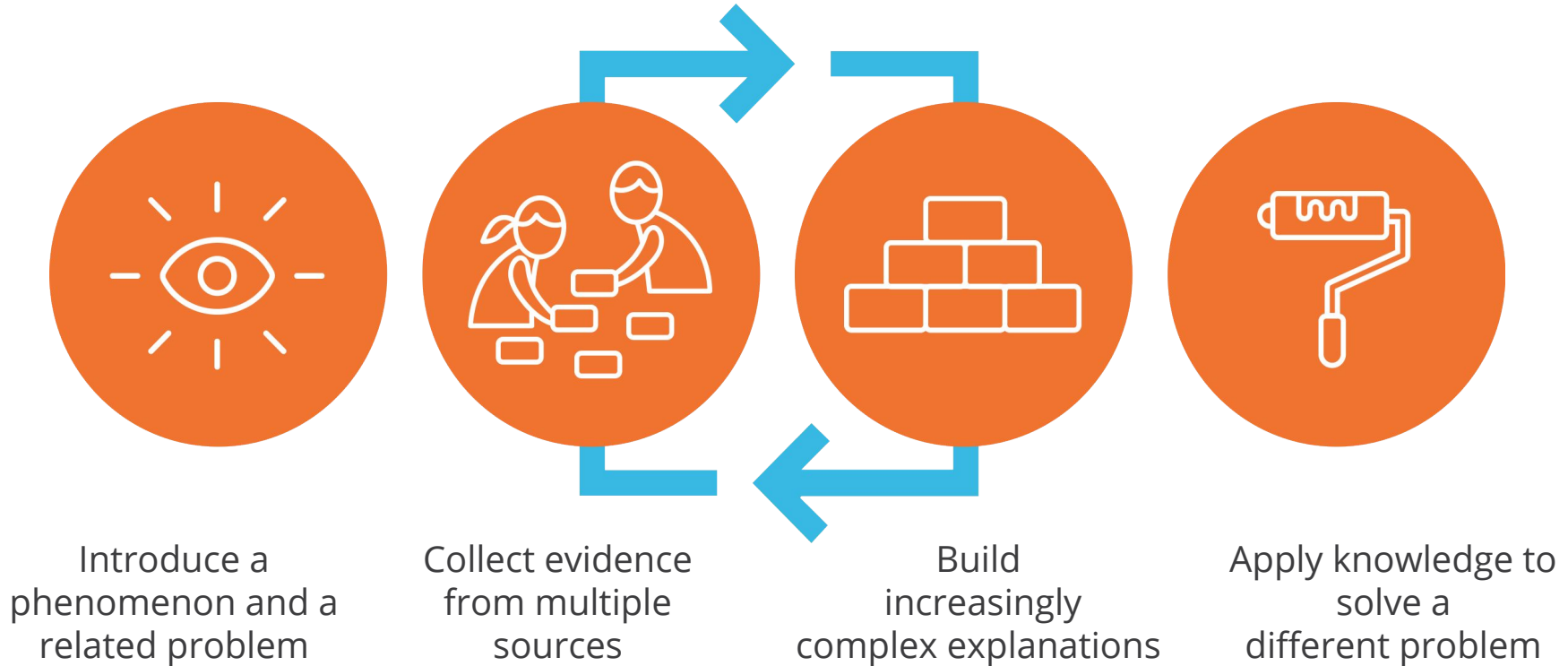
## Plan for the day

- **Framing the day**
- Amplify Science Instructional Materials
- Unit Internalization
- Planning to teach using @Home resources
- Reflection and closing



# Revisiting the Amplify Science approach

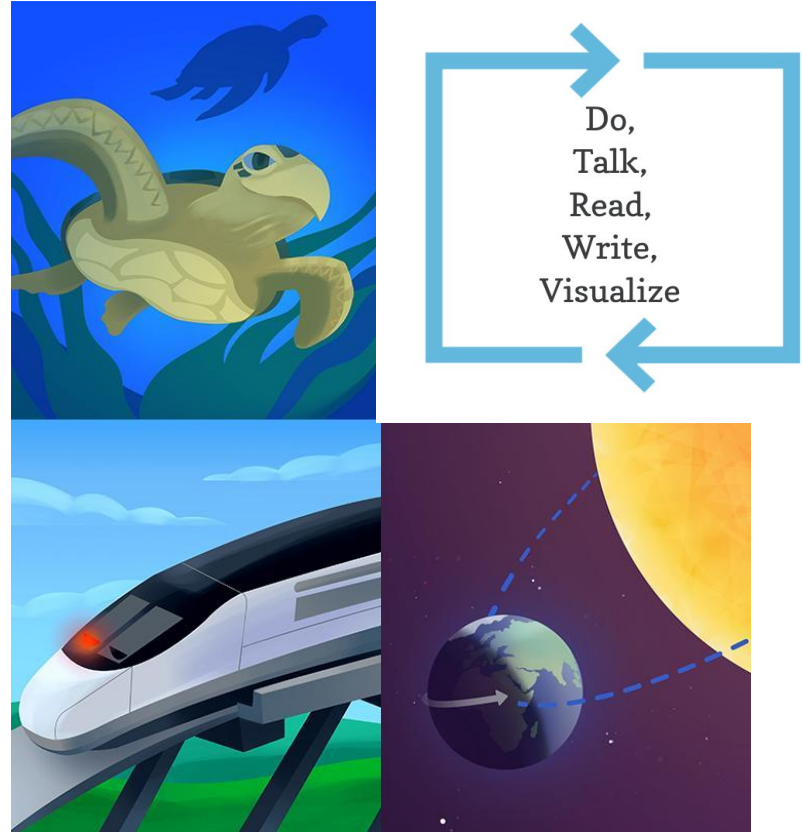
# Amplify Science Instructional Approach



# Multimodal, phenomenon-based learning

In each Amplify Science unit, students embody the role of a scientist or engineer to **figure out phenomena**.

They gather evidence from multiple sources, using multiple modalities.



# Elementary school 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

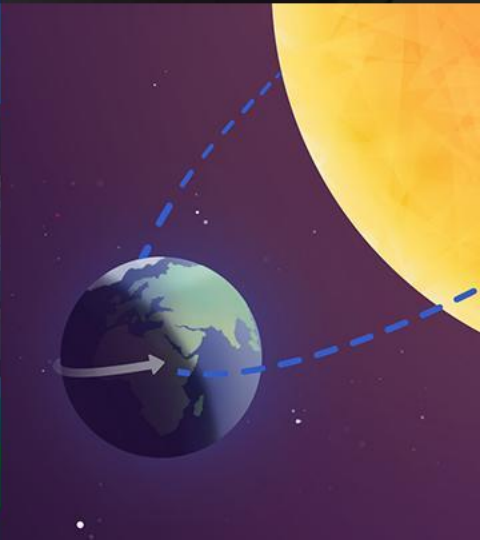
**Amplify** Science

authored by



THE LAWRENCE  
HALL OF SCIENCE  
UNIVERSITY OF CALIFORNIA

©2016 Amplify Education, Inc. All trademarks and copyrights are the property of Amplify or its licensors.



## Plan for the day

- Framing the day
- **Amplify Science Instructional Materials**
- Unit Internalization
- Planning to teach using @Home resources
- Reflection and closing

# Amplify Science @Home Curriculum



# AmplifyScience@Home

- Built for a variety of instructional formats
- Digital and print-based options
- No materials required
- Available in English and Spanish (student and family materials)
- Accessible on the Amplify Science Program Hub



# AmplifyScience@Home

Two different options:

## @Home Units

- Packet or slide deck versions of Amplify Science units condensed by about 50%

## @Home Videos

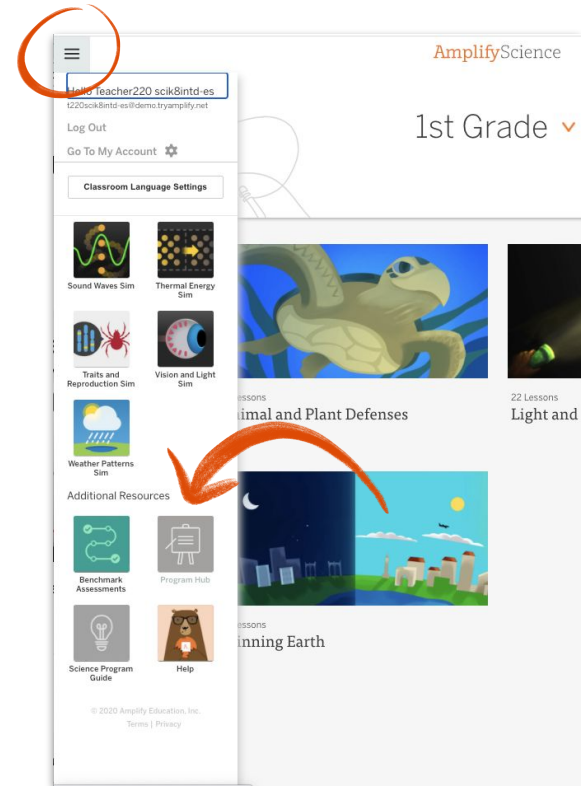
- Video playlists of Amplify Science lessons, taught by real Amplify Science teachers



# Accessing Amplify Science@Home

## Amplify Science Program Hub

- New site containing Amplify Science@Home and additional PL resources
- Accessible via the Global Navigation menu



# Standard Amplify Science Curriculum

22 Lessons

## Inheritance and Traits

✓ JUMP DOWN TO UNIT GUIDE

GENERATE PRINTABLE TEACHER'S GUIDE

## Standard Amplify Science Curriculum

The Vision and Light unit has **22 lessons** across 5 chapters. Each lesson is written to be **60 minutes** long.



Chapter 1: Why are wolves different even though they are all the same species?

7 Lessons



Chapter 2: Why is Wolf 44's color similar to one pack but different from...

6 Lessons



Chapter 3: Why isn't Wolf 44 like the Bison Valley Pack in hunting style and...

6 Lessons



Chapter 4: How can scientists investigate questions about traits?

3 Lessons

Skip slide if modeling live on the platform.

# Standard Amplify Science Curriculum

On the standard Amplify Science platform you will find all of your key documents for planning for the unit.

We will be using some of these in today's workshop.

Planning for the Unit

Unit Overview

Unit Map

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System


Embedded Formative Assessments


Articles in This Unit


Apps in This Unit


Flexensions in This Unit


Printable Resources


 Article Compilation


 Coherence Flowchart


 Copymaster Compilation

 Flexension Compilation

 Investigation Notebook

 NGSS Information for Parents and Guardians

 Print Materials (8.5" x 11")

 Print Materials (11" x 17")

Offline Preparation

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

Skip slide if modeling live on the platform.

# Standard Amplify Science Curriculum

On the standard Amplify Science platform you will find key lesson level information including:

- lesson overview,
- materials and prep,
- differentiation, and
- standards.

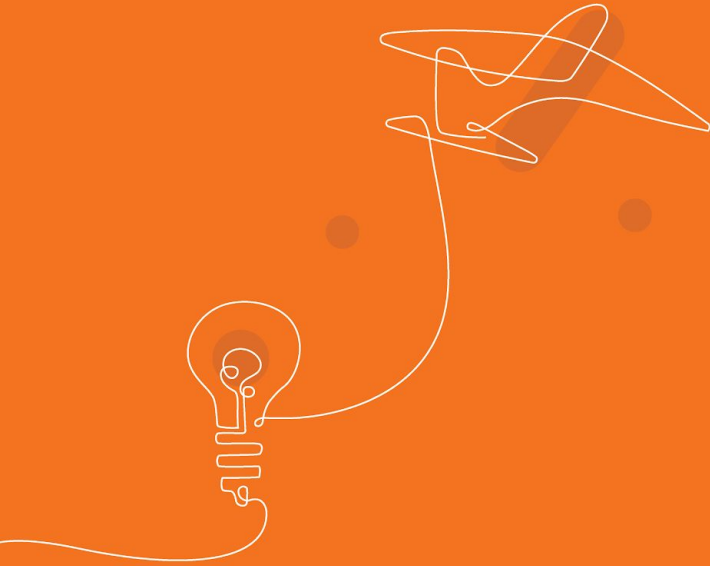
The screenshot shows the Amplify Science platform interface for Lesson 1.1: Pre-Unit Assessment. The top navigation bar includes the Amplify Science logo, "CALIFORNIA EDITION", and the path "Inheritance and Traits > Chapter 1 > Lesson 1.1". The main header area features a background image of two bears in a forest with the text "Lesson 1.1: Pre-Unit Assessment". Below this is a horizontal navigation bar with four tabs: "Lesson Brief (4 Activities)", "1 TEACHER-LED DISCUSSION Introducing the Unit", "2 WRITING Writing Initial Explanations", and "3 TEACHER-LED DISCUSSION Introducing the Investigation Notebook". The "Lesson Brief" tab is currently selected. The main content area is divided into three sections: "Overview" (with a sidebar menu for Overview, Materials & Preparation, Differentiation, Standards, Vocabulary, and Unplugged?), "Students' Initial Explanations" (containing a paragraph about the unit's core content and the crosscutting concept of Patterns), and "Digital Resources" (listing Classroom Slides 1.1 in PowerPoint and Google Slides, All Projections, and Partner Reading Guidelines). A "RESET LESSON" button is located in the top left of the main content area, and a "GENERATE PRINTABLE LESSON GUIDE" button is in the top right. A yellow callout box in the bottom right corner states: "Skip slide if modeling live on the platform."

# Resource Reflection

Which resources have you been using or do you plan to use?

- ☐ Standard Amplify Science Curriculum
- ☐ @Home Units
- ☐ @Home Videos

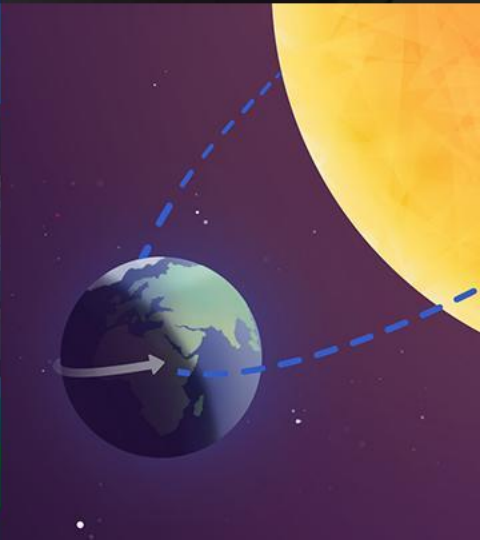
How do these resources meet your needs for remote teaching?







# Questions?



## Plan for the day

- Framing the day
- Amplify Science Instructional Materials
- **Unit Internalization**
- Planning to teach using @Home resources
- Reflection and closing

# Part 1: Unit-level Internalization

# Unit Guide Resources

Planning for the Unit

Unit Overview

Unit Map

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Articles in This Unit

Apps in This Unit

Flextensions in This Unit

Printable Resources

Article Compilation

Coherence Flowchart

Copymaster Compilation

Flextension Compilation

Investigation Notebook

NGSS Information for Parents and Guardians

Print Materials (8.5" x 11")

Print Materials (11" x 17")

Offline Preparation

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

Offline Guide

## Unit Guide resources

Once a unit is selected, select **JUMP DOWN TO UNIT GUIDE** in order to access all unit-level resources in an Amplify Science unit.

### Planning for the unit

Unit Overview	Describes what's in each unit, the rationale, and how students learn across chapters
Unit Map	Provides an overview of what students figure out in each chapter, and how they figure it out
Progress Build	Explains the learning progression of ideas students figure out in the unit
Getting Ready to Teach	Provides tips for effectively preparing to teach and teaching the unit in your classroom
Materials and Preparation	Lists materials included in the unit's kit, items to be provided by the teacher, and briefly outlines preparation requirements for each lesson
Science Background	Adult-level primer on the science content students figure out in the unit
Standards at a Glance	Lists Next Generation Science Standards (NGSS) (Performance Expectations, Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts), Common Core State Standards for English Language Arts, and Common Core State Standards for Mathematics

### Teacher references

Lesson Overview Compilation	Lesson Overview of each lesson in the unit, including lesson summary, activity purposes, and timing
Standards and Goals	Lists NGSS (Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts) and CCSS (English Language Arts and Mathematics) in the unit, explains how the standards are reached
3-D Statements	Describes 3-D learning across the unit, chapters, and in individual lessons
Assessment System	Describes components of the Amplify Science Assessment System, identifies each 3-D assessment opportunity in the unit
Embedded Formative Assessments	Includes full text of formative assessments in the unit
Books in This Unit	Summarizes each unit text and explains how the text supports instruction
Apps in This Unit	Outlines functionality of digital tools and how students use them (in grades 2-5)

### Printable resources

Copymaster Compilation	Compilation of all copymasters for the teacher to print and copy throughout the unit
Investigation Notebook	Digital version of the Investigation Notebook, for copying and projecting
Multi-Language Glossary	Glossary of unit vocabulary in multiple languages
Print Materials (8.5" x 11")	Digital compilation of printed cards (i.e. vocabulary cards, student card sets) provided in the kit
Print Materials (11" x 17")	Digital compilation of printed Unit Question, Chapter Questions, and Key Concepts provided in the kit



# Unit Map

Pages 2-3

Planning for the Unit

Unit Overview

**Unit Map**

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Articles in This Unit

Apps in This Unit

Flextensions in This Unit

Printable Resources

Article Compilation

Flextension Compilation

Investigation Notebook

NGSS Information for Parents and Guardians

Print Materials (8.5" x 11")

Print Materials (11" x 17")

Offline Preparation

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

Offline Guide

Inheritance and Traits

Planning for the Unit

Unit Map

## Unit Map

### What is the origin of the traits of Wolf 44—a wolf that appears to be different from the rest of its pack?

Students play the role of wildlife biologists working in Graysstone National Park. They study two wolf packs and are challenged to figure out why Wolf 44, an adopted wolf, has certain traits. Students observe variation between and within different species, investigate inherited traits and those that result from the environment, and explain how Wolf 44 acquired certain traits.

#### Chapter 1: Why are wolves different from each other even though they are all the same species?

**Students figure out:** Even though all wolves are the same species, some wolves are different from others due to variation of traits within a species. This means that even though wolves can have similarities in their traits, there can also be variations in each trait. For example, wolves have different colors of fur: some wolves have a trait for gray fur, others have a trait for black fur.

**How they figure it out:** Students investigate similarities and differences between a broad array of organisms, including plants and animals. They focus on exploring patterns of similarities and differences of traits between animals, and finally narrow in on similarities and differences in organisms of the same species. By chapter's end, the class constructs an explanation about why wolves are different even though they are all the same species.

#### Chapter 2: Why is Wolf 44's color similar to one pack but different from the other?

**Students figure out:** Wolf 44's color is similar to the wolves in the Bison Valley Pack because its parents are in the Bison Valley Pack. Offspring inherit instructions for each trait from both parents. This means that the trait of fur color comes from Wolf 44's parents. This is why Wolf 44 has light-colored fur, similar to its parents.

**How they figure it out:** Students search for patterns in traits of parents and their offspring in wolf packs and fruit flies. They use a digital modeling tool to make sense of these relationships. They explore why offspring have similar traits to their parents, but not always to their siblings, as they read *The Code*. A lively classroom activity helps students apply the idea that parents pass instructions for traits. Students receive more information about the two wolf packs and then write a scientific explanation about Wolf 44's fur color.

#### Chapter 3: Why isn't Wolf 44 like the Bison Valley Pack in hunting style and size?

**Students figure out:** Wolf 44 doesn't hunt like the Bison Valley Pack because it learned to hunt from the wolves in the Elk Mountain Pack. Learning to hunt is a trait that is determined by a wolf's environment. Wolf 44 is medium sized because of inherited instructions and the environment it lives in. Its parents passed on instructions for being smaller in size, but Wolf 44 lives with the Elk Mountain Pack, which has access to a rich diet. This means that Wolf 44 can grow bigger than its parents, but it can't grow as big as the wolves in the Elk Mountain Pack.

**How they figure it out:** Students get new evidence, ask questions, and investigate with a digital app to figure out that some traits result from interaction with the environment, including learning and diet. Students write an explanation of Wolf 44's traits and whether they were inherited from its parents or acquired from the environment.

1

© The Regents of the University of California

Inheritance and Traits

Planning for the Unit

### Investigate questions about traits?

Investigate questions by looking for patterns in data. Students investigate about why Wolf 44 has black stripes, so the offspring will probably have black stripes. The offspring will have the sparrow's song will be the same as other birds around. Offspring may also be bigger than its parents because of the environment.

Students are presented with a prediction about the possible offspring of a family of white-throated sparrows in Graysstone National Park. Students ask their own questions and predictions, the traits of sparrow parents, and patterns and variations in a family of sparrow families and discuss what they predict the offspring will look like, and what it will do.

2

© The Regents of the University of California

# Guided Unit Internalization

## Part 1: Unit-level internalization

**Unit title:** Inheritance and Traits

**What is the phenomenon students are investigating in your unit?**

Students study 2 wolf packs and are challenged to figure out why wolf 44, an adopted wolf, has acquired certain traits.

**Unit Question:**

**Student role:**

wildlife biologists

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

**What science ideas do students need to figure out in order to explain the phenomenon?**



# Guided Unit Internalization

## Part 1: Unit-level internalization

Unit title: Inheritance and Traits

What is the phenomenon students are investigating in your unit?

Students study 2 wolf packs and are challenged to figure out why wolf 44, an adopted wolf, has acquired certain traits.

Unit Question:

Student role:

wildlife biologists

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

What science ideas do students need to figure out in order to explain the phenomenon?



# Lesson Overview Compilation

Pages 4-5

Planning for the Unit

- Unit Overview
- Unit Map
- Progress Build
- Getting Ready to Teach
- Materials and Preparation
- Science Background
- Standards at a Glance

Teacher References

- Lesson Overview Compilation**
- Standards and Goals
- 3-D Statements
- Assessment System
- Embedded Formative Assessments
- Articles in This Unit
- Apps in This Unit
- Flextensions in This Unit

Printable Resources

- Article Compilation
- Coherence Flowchart
- Copymaster Compilation
- Flextension Compilation
- Investigation Notebook
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")
- Print Materials (11" x 17")

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

Offline Guide

Lesson Overview Compilation

Inheritance and Traits  
Teacher References

Chapters at a Glance

Unit Question

How do organisms get their traits?

Chapter 1: Why are wolves different even though they are all the same species?

Chapter Question

Why are wolves different even though they are all the same species?

Investigation Questions

- What are some ways that organisms can be similar or different? (1.1, 1.2, 1.3, 1.4)
- How can we describe the traits of organisms in a species? (1.5, 1.6)

Key Concepts

- Organisms have observable traits. (1.3)
- Organisms in a species have many similar traits, but for each trait there can be variation. (1.6)

Chapter 2: Why is Wolf 44's color similar to one pack but different from the other?

Chapter Question

Why is Wolf 44's color similar to one pack but different from the other?

Investigation Questions

- Why do only some organisms of the same species have similar traits? (2.1, 2.2)
- Why do offspring have similar traits to their parents but not always to each other? (2.3, 2.4, 2.5)

Key Concepts

- Scientists ask questions they can investigate by making observations. (2.1)
- Organisms can have traits that are similar to their parents' traits. (2.2)
- Offspring inherit instructions for each trait from both their parents. (2.5)
- Offspring can inherit different instructions from their parents, so offspring may have different traits. (2.5)

2

© The Regents of the University of California

Lesson Overview Compilation

Valley Pack in hunting style and size

and size?

5)

et their needs. The number of organisms in a group varies.

n with the environment. (3.4)

questions about traits?

ms in data. (4.1)

3

© The Regents of the University of California



## Guided Unit Internalization

## Part 1: Unit-level internalization

Unit title: Inheritance and Traits

What is the phenomenon students are investigating in your unit?

Students study 2 wolf packs and are challenged to figure out why wolf 44, an adopted wolf, has acquired certain traits.

Unit Question:

How do organisms get their traits?

Student role:

wildlife biologists

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

What science ideas do students need to figure out in order to explain the phenomenon?



# Unit Map

Pages 2-3

Planning for the Unit

Unit Overview

**Unit Map**

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Articles in This Unit

Apps in This Unit

Flextensions in This Unit

Printable Resources

Article Compilation

Flextension Compilation

Investigation Notebook

NGSS Information for Parents and Guardians

Print Materials (8.5" x 11")

Print Materials (11" x 17")

Offline Preparation

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

Offline Guide

Inheritance and Traits

Planning for the Unit

Unit Map

### What is the origin of the traits of Wolf 44—a wolf that appears to be different from the rest of its pack?

Students play the role of wildlife biologists working in Graysstone National Park. They study two wolf packs and are challenged to figure out why Wolf 44, an adopted wolf, has certain traits. Students observe variation between and within different species, investigate inherited traits and those that result from the environment, and explain how Wolf 44 acquired certain traits.

#### Chapter 1: Why are wolves different from each other even though they are all the same species?

**Students figure out:** Even though all wolves are the same species, some wolves are different from others due to variation of traits within a species. This means that even though wolves can have similarities in their traits, there can also be variations in each trait. For example, wolves have different colors of fur: some wolves have a trait for gray fur, others have a trait for black fur.

**How they figure it out:** Students investigate similarities and differences between a broad array of organisms, including plants and animals. They focus on exploring patterns of similarities and differences of traits between animals, and finally narrow in on similarities and differences in organisms of the same species. By chapter's end, the class constructs an explanation about why wolves are different even though they are all the same species.

#### Chapter 2: Why is Wolf 44's color similar to one pack but different from the other?

**Students figure out:** Wolf 44's color is similar to the wolves in the Bison Valley Pack because its parents are in the Bison Valley Pack. Offspring inherit instructions for each trait from both parents. This means that the trait of fur color comes from Wolf 44's parents. This is why Wolf 44 has light-colored fur, similar to

**How they figure it out:** Students search for patterns in traits of parents and their offspring. They use a digital modeling tool to make sense of these relationships. They explore the traits of their parents, but not always to their siblings, as they read *The Code*. A lively class discussion explores the idea that parents pass instructions for traits. Students receive more information about the traits of Wolf 44's parents and write a scientific explanation about Wolf 44's fur color.

#### Chapter 3: Why isn't Wolf 44 like the Bison Valley Pack in hunting style?

**Students figure out:** Wolf 44 doesn't hunt like the Bison Valley Pack because it is a different species. Learning to hunt is a trait that is determined by a wolf's environment. Wolf 44 lives with the Elk Mountain Pack, which has access to a rich diet of elk. Wolf 44's parents, which live in the Bison Valley Pack, have access to a rich diet of bison. Wolf 44's parents are bigger than its parents, but it can't grow as big as the wolves in the Elk Mountain Pack.

**How they figure it out:** Students get new evidence, ask questions, and investigate some traits result from interaction with the environment, including learning and development. Students investigate whether Wolf 44's traits and whether they were inherited from its parents or acquired from the environment.

In 10 words or less, what do students figure out by the end of the unit?

## Guided Unit Internalization

## Part 1: Unit-level internalization

**Unit title:** Inheritance and Traits

**What is the phenomenon students are investigating in your unit?**

Students study 2 wolf packs and are challenged to figure out why wolf 44, an adopted wolf, has acquired certain traits.

**Unit Question:**

How do organisms get their traits?

**Student role:**

wildlife biologists

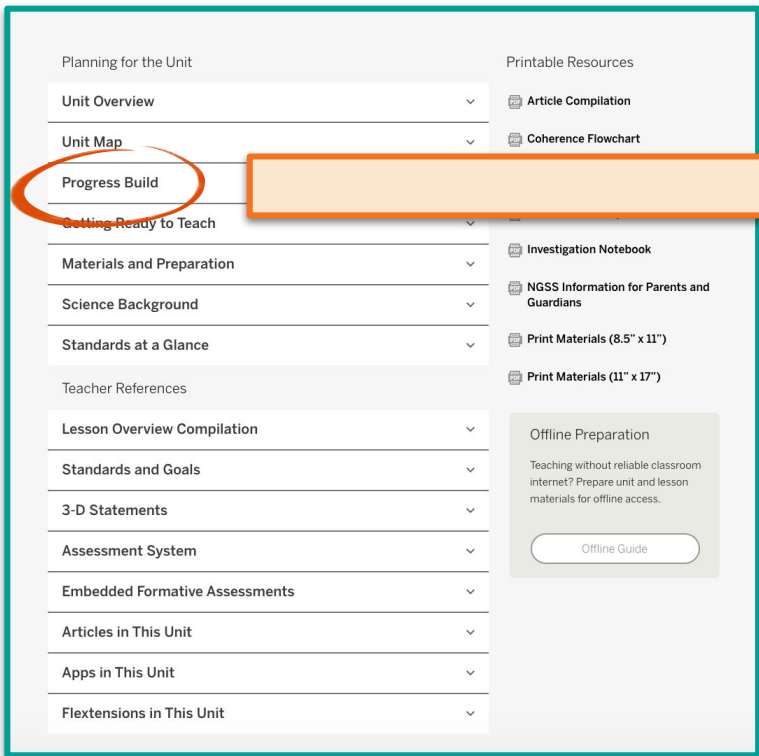
**By the end of the unit, students figure out ...**

Some traits are inherited and others are environmental.

**What science ideas do students need to figure out in order to explain the phenomenon?**



# Progress Build



Planning for the Unit

- Unit Overview
- Unit Map
- Progress Build**
- Getting Ready to Teach
- Materials and Preparation
- Science Background
- Standards at a Glance
- Teacher References
- Lesson Overview Compilation
- Standards and Goals
- 3-D Statements
- Assessment System
- Embedded Formative Assessments
- Articles in This Unit
- Apps in This Unit
- Flextensions in This Unit

Printable Resources

- Article Compilation
- Coherence Flowchart
- Investigation Notebook
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")
- Print Materials (11" x 17")

Offline Preparation

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

Offline Guide

Inheritance and Traits  
Planning for the Unit

Progress Build

## Progress Build

A Progress Build describes the way in which students' explanations of the central phenomenon should develop and deepen over the course of a unit. It is an important tool in understanding the design of the unit and in supporting students' learning. A Progress Build organizes the sequence of instruction, defines the focus of the assessments, and grounds inferences about students' understanding of the content, specifically at each of the Critical Juncture Assessments found throughout the unit. A Critical Juncture Assessment guides the instruction designed to address specific gaps in students' understanding. This document will serve as an overview of the *Inheritance and Traits* 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 *Inheritance and Traits* unit, students will learn to construct scientific explanations about why Wolf 44 has some traits that are more similar to the Bison Valley Pack (its birth pack) and some traits that are more similar to the Elk Mountain Pack (its adopted pack).

**Prior knowledge (preconceptions):** Students are expected to have had many everyday experiences thinking about the traits and characteristics of organisms. Students are likely to understand (and to have experienced) that individuals in a family tend to share similarities, although it is not expected that students have formal ideas about inheritance. While these ideas are not necessary for students to participate fully in the unit, having exposure to these ideas will prepare students well for what they will be learning.

**Progress Build Level 1: Traits vary within a species.**

There is a lot of variation in traits. Organisms in a species have many similar traits, but the traits they have vary within the species.

**Progress Build Level 2: Organisms get instructions for traits from their parents.**

There is a lot of variation in traits. Organisms in a species have many similar traits, but the traits they have vary within the species. **Organisms get instructions for traits from their two parents. This is why organisms have similar traits to their parents.**

**Progress Build Level 3: Traits can be determined by inheritance, the environment, or both.**

There is a lot of variation in traits. Organisms in a species have many similar traits, but the traits they have vary within the species. Organisms get instructions for traits from their two parents. This is why organisms have similar traits to their parents. **Traits can also be determined by the environment, and sometimes traits can be determined by both the environment and inheritance.**

1

© The Regents of the University of California

## Guided Unit Internalization

### Part 1: Unit-level internalization

**Unit title:** Inheritance and Traits

**What is the phenomenon students are investigating in your unit?**

Students study 2 wolf packs and are challenged to figure out why wolf 44, an adopted wolf, has acquired certain traits.

**Unit Question:**

How do organisms get their traits?

**Student role:**

wildlife biologists

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

Some traits are inherited and others are environmental.

**What science ideas do students need to figure out in order to explain the phenomenon?**

Traits vary within a species. Organisms get instructions for traits from their parents. Traits can be determined by inheritance, the environment or both.

# Unit Level

## *Think - Type - Discuss*

Share something you're excited about in teaching this unit to your students.





# Questions?

## Part 2: Chapter-level Internalization



## Part 2: Chapter-level internalization

**Directions:** Complete the table below. If you plan to teach using the @Home Units, use the Teacher Overview. If you plan to teach using the @Home Videos, navigate to the Coherence Flowcharts in the Unit Guide.

Chapter Question:	
What key concepts do students construct in this chapter?	How do students apply the key concepts to answer the Chapter Question? To solve the phenomenon?

# Unit Level Documents

Planning for the Unit

Unit Overview

**Unit Map**

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

**Lesson Overview Compilation**

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Articles in This Unit

Apps in This Unit

Flextensions in This Unit

Printable Resources

Article Compilation

Copymaster Compilation

Flextension Compilation

Investigation Notebook

NGSS Information for Parents and Guardians

Print Materials (8.5" x 11")

Print Materials (11" x 17")

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

Offline Guide

Inheritance and Traits

Planning for the Unit

Unit Map

Unit Map

What is the origin of the traits of Wolf 44—a wolf that appears to be different from the rest of its pack?

Students play the role of wildlife biologists working in Graystone National Park. They study two wolf packs and are challenged to figure out why Wolf 44, an adopted wolf, has certain traits. Students observe variation between and within different species, investigate inherited traits and those that result from the environment, and explain how Wolf 44 acquired certain traits.

Chapter 1: Why are wolves different from each other even though they are all the same species?

Students figure out: Even though all wolves are the same species, some wolves are different from others due to variation of traits within a species. This means that even though wolves can have similarities in their traits, there can also be variations in each trait. For example, wolves have different colors of fur: some wolves have a trait for gray fur, others have a trait for black fur.

How they figure it out: Students investigate similarities and differences between a broad array of organisms, including plants and animals. They focus on exploring patterns of similarities and differences of traits between animals, and narrow in on similarities and differences in organisms of the same species. By chapter's end, the class constructs an explanation about why wolves are different even though they are all the same species.

Chapter 2: Why is Wolf 44's color similar to one pack but different from the other?

Students figure out: Wolf 44's color is similar to the wolves in the Bison Valley Pack because its parents are in the Bison Valley Pack. Offspring inherit instructions for each trait from both parents. This means that the trait of fur color comes from Wolf 44's parents. This is why Wolf 44 has light-colored fur, similar to its parents.

How they figure it out: Students search for patterns in traits of parents and their offspring in wolf packs and fruit flies. They use a digital modeling tool to make sense of these relationships. They explore why offspring have similar traits to their parents. A group activity helps students apply their understanding about the two wolf packs and then

Lesson Overview Compilation

Inheritance and Traits

Teacher References

Chapters at a Glance

Unit Question

How do organisms get their traits?

Chapter 1: Why are wolves different even though they are all the same species?

Chapter Question

Why are wolves different even though they are all the same species?

Investigation Questions

- What are some ways that organisms can be similar or different? (1.1, 1.2, 1.3, 1.4)
- How can we describe the traits of organisms in a species? (1.5, 1.6)

Key Concepts

- Organisms have observable traits. (1.3)
- Organisms in a species have many similar traits, but for each trait there can be variation. (1.6)

Chapter 2: Why is Wolf 44's color similar to one pack but different from the other?

Chapter Question

Why is Wolf 44's color similar to one pack but different from the other?

Investigation Questions

- Why do only some organisms of the same species have similar traits? (2.1, 2.2)
- Why do offspring have similar traits to their parents but not always to each other? (2.3, 2.4, 2.5)

Key Concepts

- Scientists ask questions they can investigate by making observations. (2.1)
- Organisms can have traits that are similar to their parents' traits. (2.2)
- Offspring inherit instructions for each trait from both their parents. (2.5)
- Offspring can inherit different instructions from their parents, so offspring may have different traits. (2.5)

Pages 2-3

Pages 4-5

## Part 2: Chapter-level internalization

**Directions:** Complete the table below. If you plan to teach using the @Home Units, use the Teacher Overview. If you plan to teach using the @Home Videos, navigate to the Coherence Flowcharts in the Unit Guide.

<b>Chapter Question:</b> Why are wolves different even though they are all the same species?	
<b>What key concepts do students construct in this chapter?</b>  Organisms have observable traits. (1.3) Organisms in a species have many similar traits, but for each trait there can be variation. (1.6)	<b>How do students apply the key concepts to answer the Chapter Question? To solve the phenomenon?</b> Even though all wolves are the same species, some wolves are different from others due to variation of traits within a species. This means that even though wolves can have similarities in their traits, there can also be variations in each trait. For example, wolves have different colors of fur: some wolves have a trait for gray fur, others have a trait for black fur.

# Chapter Level

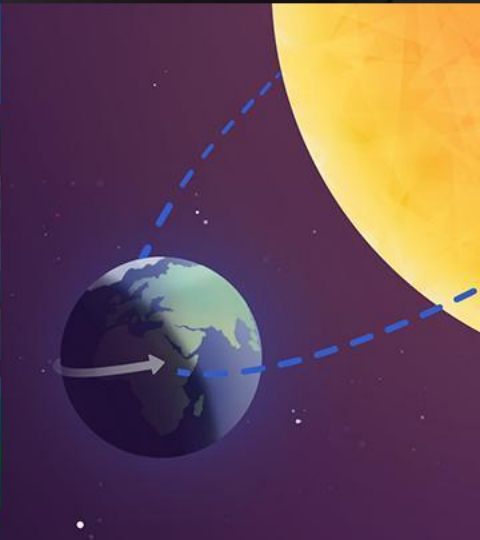
## *Think - Type - Discuss*

What new scientific understandings do your students need to construct in the chapter to support them in figuring out the unit phenomenon?





# Questions?



## Plan for the day

- Framing the day
- Amplify Science Instructional Materials
- Unit Internalization
- **Planning to teach using @Home resources**
- Reflection and closing

## Part 3: Lesson-level Internalization

### Key Activities

- **Introducing the Wolves in Graystone National Park:** Students are introduced to the unit problem and their role as wildlife biologists.
- **Write:** Students complete a pre-unit writing activity about their initial understanding of inheritance and traits.

### Ideas for synchronous or in-person instruction

While meeting, introduce the students' role as wildlife biologists and lead a discussion about what wildlife biologists study and how they work. Assign students to complete the pre-unit writing after the class meeting.





Inheritance and Traits

# @Home Lesson 1



We're about to begin a new science unit.

You will take on the role of **wildlife biologists**. You will investigate many of the things that scientists like wildlife biologists do.



Take a moment to look at these pictures of wildlife biologists.



What do you think  
**wildlife biologists** study?



Let's look at more pictures of wildlife biologists.



Where do you think  
**wildlife biologists** work?







As wildlife biologists, you will study **wolves** in Graystone National Park.

There is a mystery about one particular wolf that you will work to solve.



Wolves live in a **pack**, or group of many wolves.

Being part of a group often helps animals survive.

## @Home Lesson 1

Adapted from: Amplify Science *Inheritance and Traits* Lesson 1.1

### Key Activities

- **Introducing the Wolves in Graystone National Park:** Students are introduced to the unit problem and their role as wildlife biologists.
- **Write:** Students complete a pre-unit writing activity about their initial understanding of inheritance and traits.

### Ideas for synchronous or in-person instruction

While meeting, introduce the students' role as wildlife biologists and lead a discussion about what wildlife biologists study and how they work. Assign students to complete the pre-unit writing after the class meeting.

Name: \_\_\_\_\_ Date: \_\_\_\_\_



**Pre-Unit Writing:**

**Explaining Similarities and Differences Between Fish**

**Directions:**

Look at the images in Part 1 and Part 2 and answer the questions. Be sure to answer the questions in both parts as best as you can.

**Part 1**



Is it possible that these are both the same type of fish? Explain your answer.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Inheritance and Traits @Home Lesson 1

© 2020 The Regents of the University of California. All rights reserved.

Inheritance and Traits @Home Lesson 1

© 2020 The Regents of the University of California. All rights reserved.

Inheritance and Traits @Home Lesson 1

© 2020 The Regents of the University of California. All rights reserved.

You are going to **write**  
your very first ideas  
about how living things  
become the way they are.



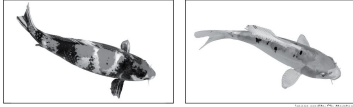
Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Pre-Unit Writing:**  
**Explaining Similarities and Differences Between Fish**

**Directions:**

Look at the images in Part 1 and Part 2 and answer the questions. Be sure to answer the questions in both parts as best as you can.

**Part 1**



Is it possible that these are both the same type of fish? Explain your answer.

---

---

---

---

Find and complete the **Pre-unit writing: Explaining Similarities and Differences Between Fish** pages.



**Write your ideas about similarities and differences between the fish.**

# End of @Home Lesson



THE LAWRENCE  
HALL OF SCIENCE  
UNIVERSITY OF CALIFORNIA, BERKELEY

Amplify.

Published and Distributed by Amplify. [www.amplify.com](http://www.amplify.com)

## @Home Lesson 1

Adapted from: Amplify Science *Inheritance and Traits* Lesson 1.1

### Key Activities

- **Introducing the Wolves in Graystone National Park:** Students are introduced to the unit problem and their role as wildlife biologists.
- **Write:** Students complete a pre-unit writing activity about their initial understanding of inheritance and traits.

### Ideas for synchronous or in-person instruction

While meeting, introduce the students' role as wildlife biologists and lead a discussion about what wildlife biologists study and how they work. Assign students to complete the pre-unit writing after the class meeting.

# Suggestions for Online Synchronous Time



## Online synchronous time

**Online discussions:** It's worthwhile to establish norms and routines for online discussions in science to ensure equity of voice, turn-taking, etc.

**Digital tool demonstrations:** You can share your screen and demonstrate, or invite your students to share their screen and think-aloud as they use a Simulation or other digital tool.

**Interactive read-alouds:** Screen share a digital book or article, and pause to ask questions and invite discussion as you would in the classroom.

**Shared Writing:** This is a great opportunity for a collaborative document that all your students can contribute to.

**Co-constructed class charts:** You can create digital charts, or create physical charts in your home with student input.



Day 1: @Home Lesson 1

Minutes for science: 30 min

Instructional format:

- ☐ Asynchronous  
☒ Synchronous

Lesson or part of lesson:

@Home Lesson 1, Intro (slides 1-6)

Mode of instruction:

- ☐ Preview  
☐ Review  
☐ Teach full lesson live  
☒ Teach using synchronous suggestions  
☐ Students work independently using:  
☐ @Home Packet  
☒ @Home Slides and @Home Student Sheets  
☐ @Home Videos

Students will...

be introduced to their role as wildlife biologists as well as the unit problem they will have an opportunity to share their initial ideas about both.

Teacher will...

walk through slides 1-6 to introduce the unit problem and facilitate a conversation around the student role/unit problem.

Minutes for science: \_\_\_\_\_

Instructional format:

- ☒ Asynchronous  
☐ Synchronous

Lesson or part of lesson:

Mode of instruction:

- ☐ Preview  
☐ Review  
☐ Teach full lesson live  
☐ Teach using synchronous suggestions  
☐ Students work independently using:  
☐ @Home Packet  
☐ @Home Slides and @Home Student Sheets  
☐ @Home Videos

Students will...

Teacher will...

# Sample teacher-created slides

Inheritance and Traits: @Home Lesson 1



© The Regents of the University of California. All rights reserved.

Inheritance and Traits: @Home Lesson 1



© The Regents of the University of California. All rights reserved.

Inheritance and Traits: @Home Lesson 1

Wolves live in a **pack**, or group of many wolves.

Being part of a group often helps animals survive.

- How could being a part of a group, help animals survive?
- Jot your answer down in your science notebook.
- Come off mute to share with the class.

es of wildlife

ink  
ts work?

down in  
ebook.

o share

Day 1: @Home Lesson 1			
Minutes for science: 30 min		Minutes for science: 25 min	
<b>Instructional format:</b> <input type="checkbox"/> Asynchronous <input checked="" type="checkbox"/> Synchronous		<b>Instructional format:</b> <input checked="" type="checkbox"/> Asynchronous <input type="checkbox"/> Synchronous	
<b>Lesson or part of lesson:</b> @Home Lesson 1, video (slides 1-25)		<b>Lesson or part of lesson:</b> @Home Lesson 1, pre-unit assessment (student sheets)	
<b>Mode of instruction:</b> <input type="checkbox"/> Preview <input type="checkbox"/> Review <input type="checkbox"/> Teach full lesson live <input checked="" type="checkbox"/> Teach using synchronous suggestions <input type="checkbox"/> Students work independently using: <input type="checkbox"/> @Home Packet <input checked="" type="checkbox"/> @Home Slides and @Home Student Sheets <input type="checkbox"/> @Home Videos		<b>Mode of instruction:</b> <input type="checkbox"/> Preview <input type="checkbox"/> Review <input type="checkbox"/> Teach full lesson live <input type="checkbox"/> Teach using synchronous suggestions <input type="checkbox"/> Students work independently using: <input type="checkbox"/> @Home Packet <input checked="" type="checkbox"/> @Home Slides and @Home Student Sheets <input type="checkbox"/> @Home Videos	
<b>Students will...</b> be introduced to the unit problem and brainstorm/discuss their ideas about what animals need to survive.	<b>Teacher will...</b> walk through slides 1-25 to introduce the unit problem and facilitate a conversation around what animals need to survive in their environment.	<b>Students will...</b> complete the pre-unit assessment.	<b>Teacher will...</b> assign the pre-unit assessment (@Home Lesson 1 student sheets) and review student responses using the Assessment Guide.



Look at the *Students will* columns. What are students working in the lesson(s) that you could collect, review, or provide feedback on?

See Some Types of Written Work in Amplify Science to the right for guidance.

If there isn't a work product listed above, do you want to add one? Make notes below.

Asynchronous: pre-unit assessment

Synchronous: give students an opportunity to stop and jot their ideas before sharing out with the group.

How will students submit this work product to you?

See the Completing and Submitting Written Work tables to the right for guidance on how students can complete and submit work.

Asynchronous: students will submit their completed pre-unit assessment through Schoology.

Synchronous: students will not submit this work. Instead they will hold on to it to track their thinking across the unit.

### Some Types of Written Work in Amplify Science

- Daily written reflections
- Homework tasks
- Investigation notebook pages
- Written explanations (typically at the end of Chapter)
- Diagrams
- Recording pages for Sim uses, investigations, etc

### Completing Written Work

- Plain paper and pencil (videos include prompts for setup)
- (6-8) Student platform
- Investigation Notebook
- Record video or audio file describing work/answering prompt
- Teacher-created digital format (Google Classroom, etc)

### Submitting Written Work

- Take a picture with a smartphone and email or text to teacher
- Through teacher-created digital format
- During in-school time (hybrid model) or lunch/materials pick-up times
- (6-8) Hand-in button on student platform

How will you differentiate this lesson for diverse learners? (Navigate to the lesson level on the standard Amplify Science platform and click on differentiation in the left menu.)



Look at the *Students will* columns. What are students working in the lesson(s) that you could collect, review, or provide feedback on?  
See Some Types of Written Work in Amplify Science to the right for guidance.

If there isn't a work product listed above, do you want to add one? Make notes below.

Asynchronous: pre-unit assessment

Synchronous: give students an opportunity to stop and jot their ideas before sharing out with the group.

How will students submit this work product to you?

See the Completing and Submitting Written Work tables to the right for guidance on how students can complete and submit work.

Asynchronous: students will submit their completed pre-unit assessment through Schoology.

Synchronous: students will not submit this work, instead they will hold on to it to track their thinking across the unit.

### Some Types of Written Work in Amplify Science

- Daily written reflections
- Homework tasks
- Investigation notebook pages
- Written explanations (typically at the end of Chapter)
- Diagrams
- Recording pages for Sim uses, investigations, etc

### Completing Written Work

- Plain paper and pencil (videos include prompts for setup)
- (6-8) Student platform
- Investigation Notebook
- Record video or audio file describing work/answering prompt
- Teacher-created digital format (Google Classroom, etc)

### Submitting Written Work

- Take a picture with a smartphone and email or text to teacher
- Through teacher-created digital format
- During in-school time (hybrid model) or lunch/materials pick-up times
- (6-8) Hand-in button on student platform

How will you differentiate this lesson for diverse learners? (Navigate to the lesson level on the standard Amplify Science platform and click on differentiation in the left menu.)

#### Supports:

- Allow multiple means of expression on the pre-unit assessment (verbal, diagram, writing)
- Leverage primary languages during discussion/writing
- Make available the @Home Classroom Wall found in the @Home Student Packets to support discussions and writing. Students can add pictures to go with the vocabulary/key concepts to help them make meaning.

#### Extension:

- Add diagrams with explanations to pre-unit assessment answers

# Planning Time

pages 9-12



## Multi-day planning, including planning for differentiation and evidence of student work

Day 1: \_\_\_\_\_

Minutes for science: \_\_\_\_\_

Instructional format:

- ☐ Asynchronous  
☐ Synchronous

Lesson or part of lesson:

Mode of instruction:

- ☐ Preview  
☐ Review  
☐ Teach full lesson live  
☐ Teach using synchronous suggestions  
☐ Students work independently using:  
    ☐ @Home Packet  
    ☐ @Home Slides and @Home Student Sheets  
    ☐ @Home Videos

Students will...

Teacher will...

Minutes for science: \_\_\_\_\_

Instructional format:

- ☐ Asynchronous  
☐ Synchronous

Lesson or part of lesson:

Mode of instruction:

- ☐ Preview  
☐ Review  
☐ Teach full lesson live  
☐ Teach using synchronous suggestions  
☐ Students work independently using:  
    ☐ @Home Packet  
    ☐ @Home Slides and @Home Student Sheets  
    ☐ @Home Videos

Students will...

Teacher will...

## Submitting Written Work in Amplify Science

Reflections  
Sketches  
Notebook pages  
Presentations (typically at the end of Chapter)  
Simulations for Sim uses, investigations, etc

### Submitting Written Work

### Submitting Written Work

Pencil prompts

Platform notebook

Audio file

Prompt

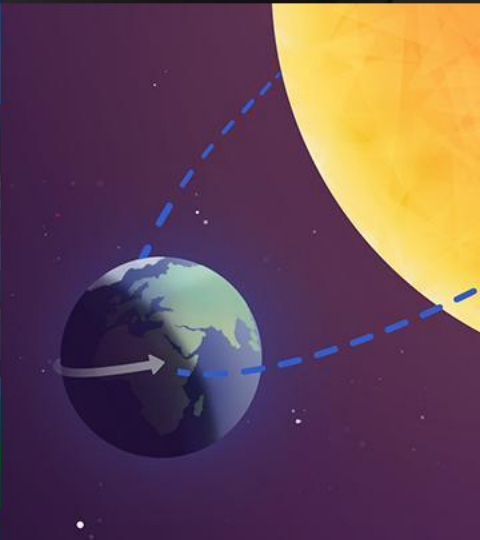
Digital

- Take a picture with a smartphone and email or text to teacher
- Through teacher-created digital format
- During in-school time (hybrid model) or lunch/materials pick-up times
- (6-8) Hand-in button on student platform

platform and click on differentiation in the left menu.)



# Questions?



## Plan for the day

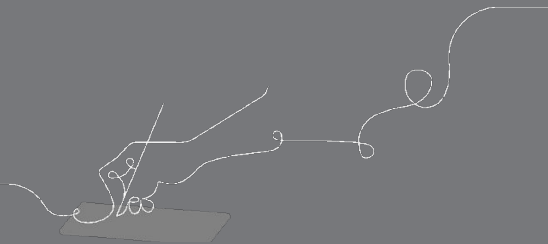
- Framing the day
- Amplify Science Instructional Materials
- Unit Internalization
- Planning to teach using @Home resources
- **Reflection and closing**

# Reflecting on our goals

Are you able to:

- Leverage your understanding of your upcoming unit to make instructional decisions about remote learning using the Amplify Science@Home resources?
- Develop a multi-day plan for using @Home resources within your class schedule and instructional format?

e



# Welcome to Amplify Science!

---

This site contains supporting resources designed for the Los Angeles Unified School District Amplify Science adoption for grades TK–8.

All LAUSD schools have access to Amplify Science resources at this time.

Click here for [Remote Learning Resources for Amplify Science](#)

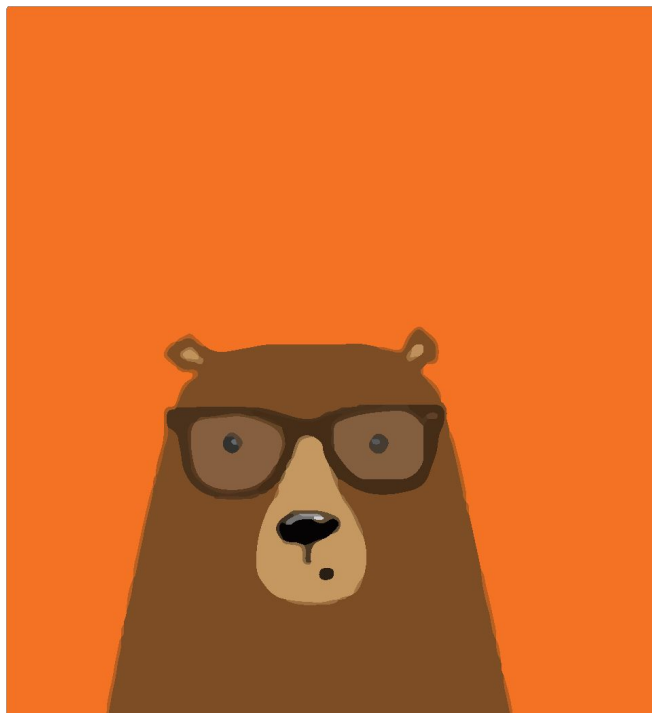
[Click here](#) to go back to the LAUSD homepage.

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



<https://amplify.com/lausd-science/>

# Additional Amplify resources



## **Program Guide**

Glean additional insight into the program's structure, intent, philosophies, supports, and flexibility.

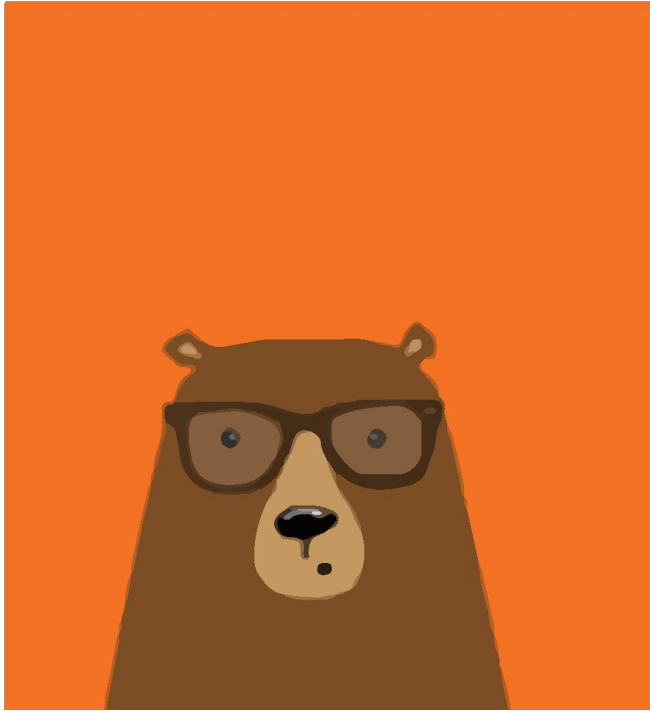
**<http://amplify.com/science/california/review>**

## **Amplify Help**

Find lots of advice and answers from the Amplify team.

**[my.amplify.com/help](http://my.amplify.com/help)**

# Additional Amplify resources



## Caregivers site

Provide your students' families information about Amplify Science and what students are learning

**[amplify.com/amplify-science-family-resource-intro/](https://amplify.com/amplify-science-family-resource-intro/)**



# Additional Amplify Support

## Customer Care

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



scihelp@amplify.com



800-823-1969



Amplify Chat

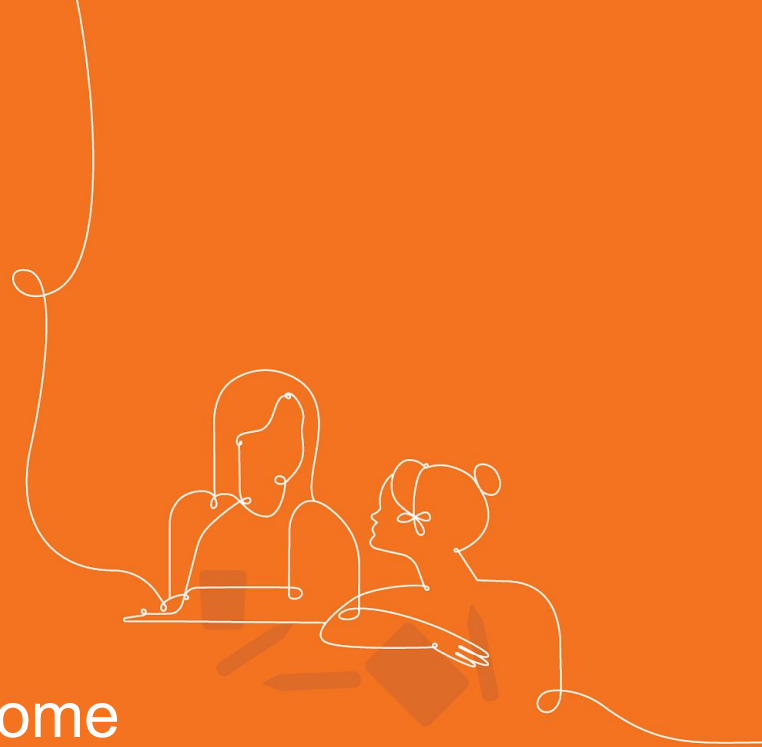
## When contacting the customer care team:

- Identify yourself as an Amplify Science user.
- Note the unit you are teaching.
- Note the type of device you are using (Chromebook, iPad, Windows, laptop).
- Note the web browser you are using (Chrome or Safari).
- Include a screenshot of the problem, if possible.
- Copy your district or site IT contact on emails.

# Thank you for your feedback!

**Session:** Unit Internalization with @Home Resources

**Presenter:** xx



# Creating Assignments in Schoology

- Click Add Materials.
- Select Add Assignment.
- Fill out the Create Assignment form.
- Options. Use Options to turn on/off the following features: Use Individually Assign to only display the assignment to a specific member of the course or a grading group. ...
- Click Create to complete

# LAUSD Shared Logins

AmplifyScience

Go to: [my.amplify.com](https://my.amplify.com)

A.

Log In with Amplify

District Shared Logins		
Grade	Username	Password
Kindergarten	LAUSDscienceK	LAUSD1234
1	LAUSDscience1	LAUSD1234
2	LAUSDscience2	LAUSD1234
3	LAUSDscience3	LAUSD1234
4	LAUSDscience4	LAUSD1234
5	LAUSDscience5	LAUSD1234
6	LAUSDscience6	LAUSD1234
7	LAUSDscience7	LAUSD1234
8	LAUSDscience8	LAUSD1234

# Elementary Student Apps Shared Logins

## English

- Username: **ampsci123**
- Password: **ampsci123**

## Spanish

- Username: **ampsci123sp**
- Password: **ampsci123sp**



**Elementary  
Student Apps**