Amplify.

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!

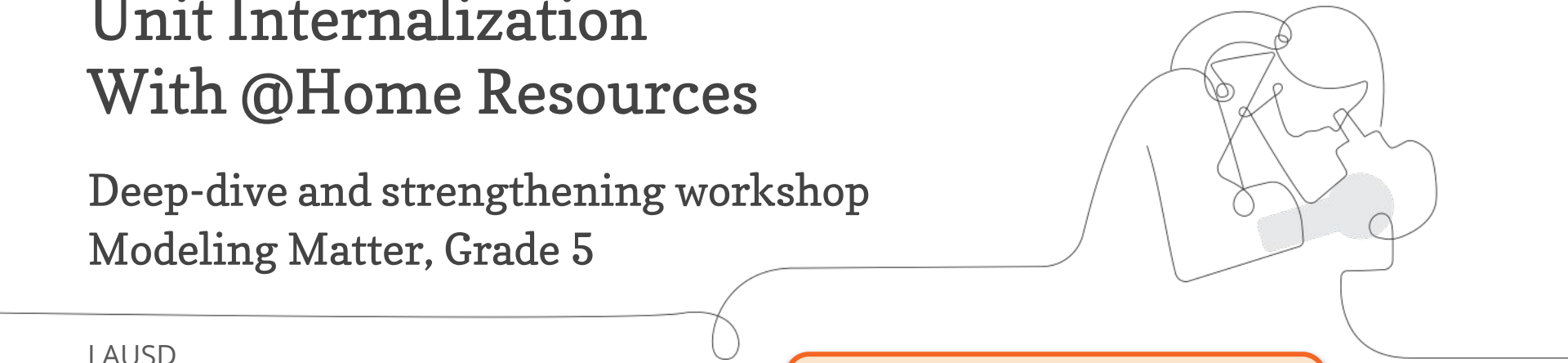
https://amplify.com/lausd-science/

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
Modeling Matter, Grade 5



LAUSD
11/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

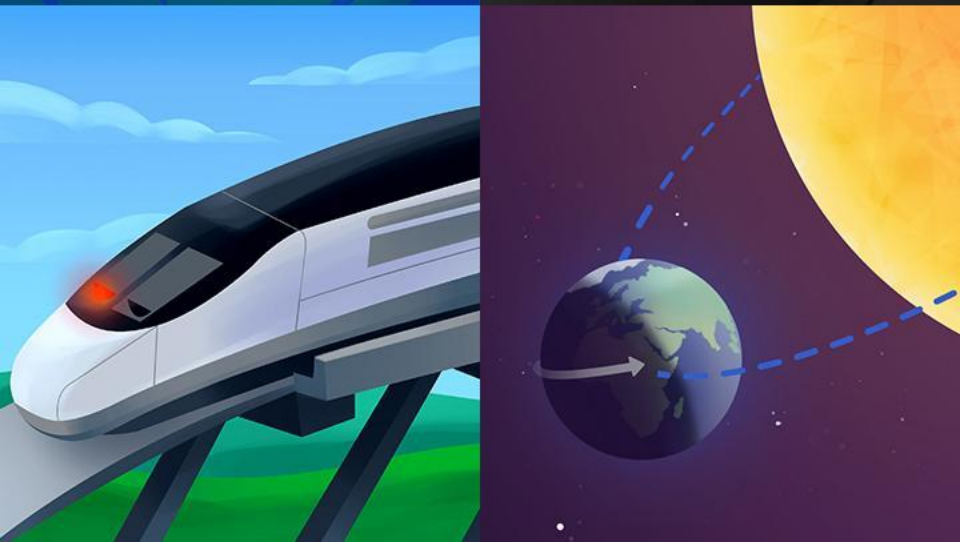
- Make sure you have a note-catcher present

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

Workshop goals

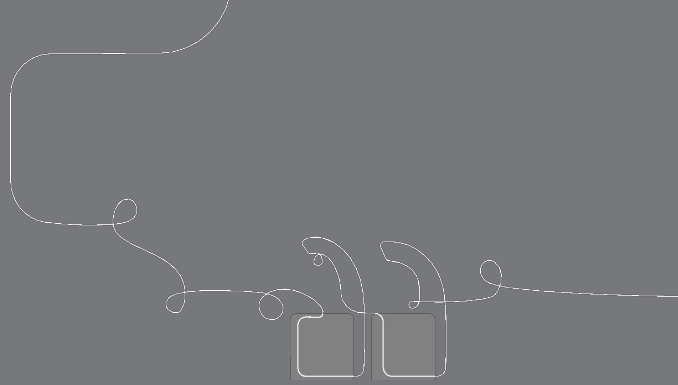
By the end of this workshop, you will be able to:

- 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.

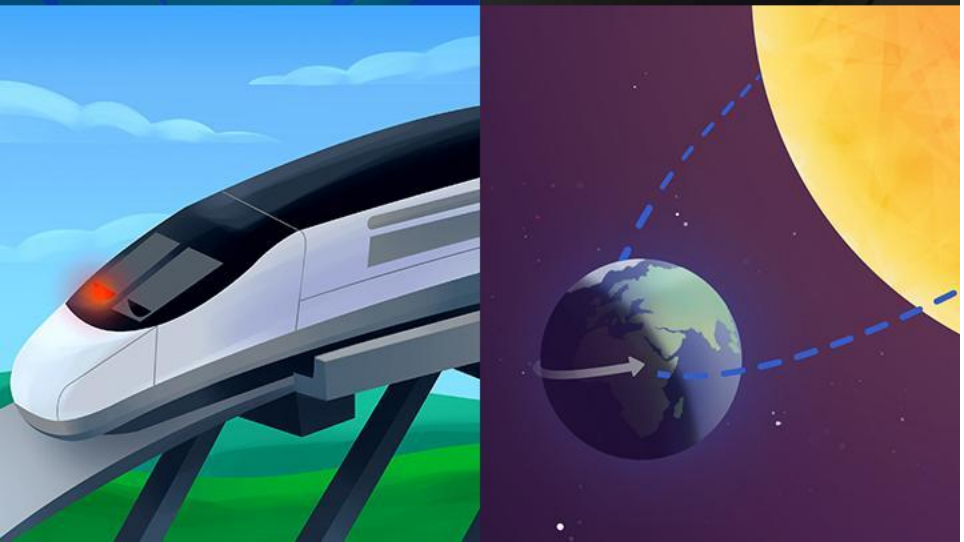


Plan for the day

- 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**
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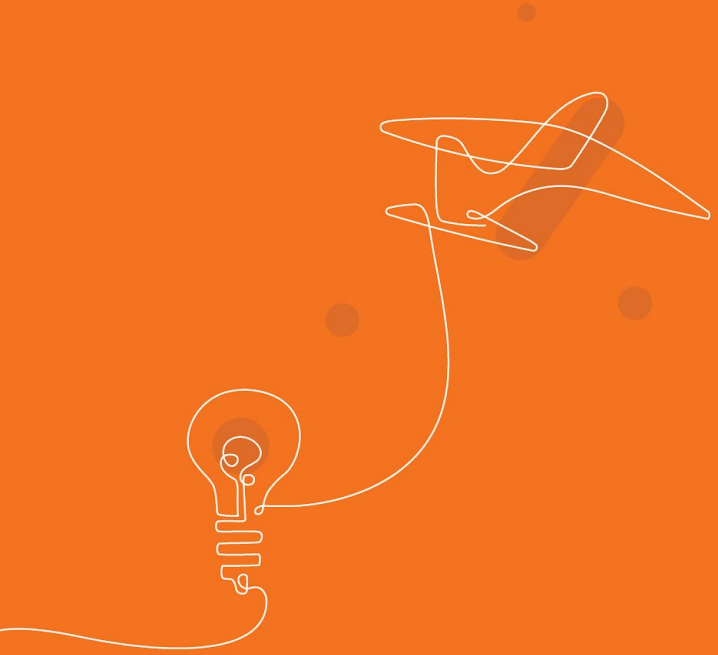
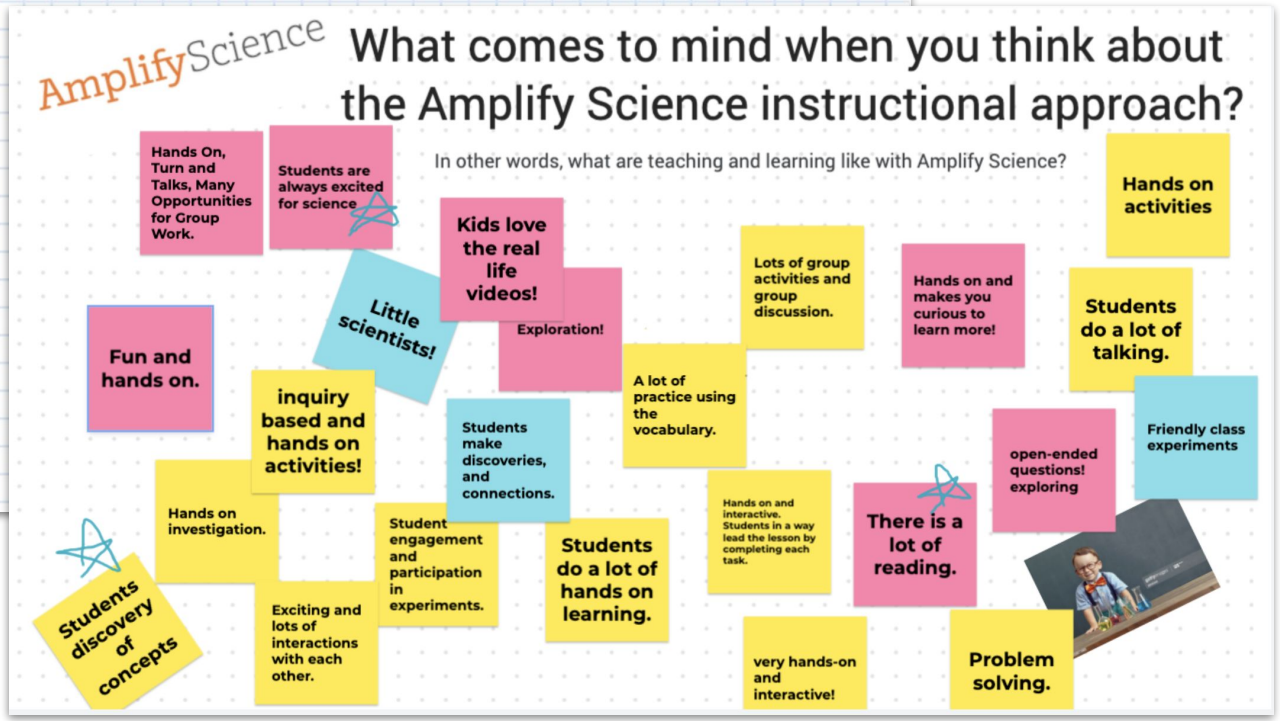


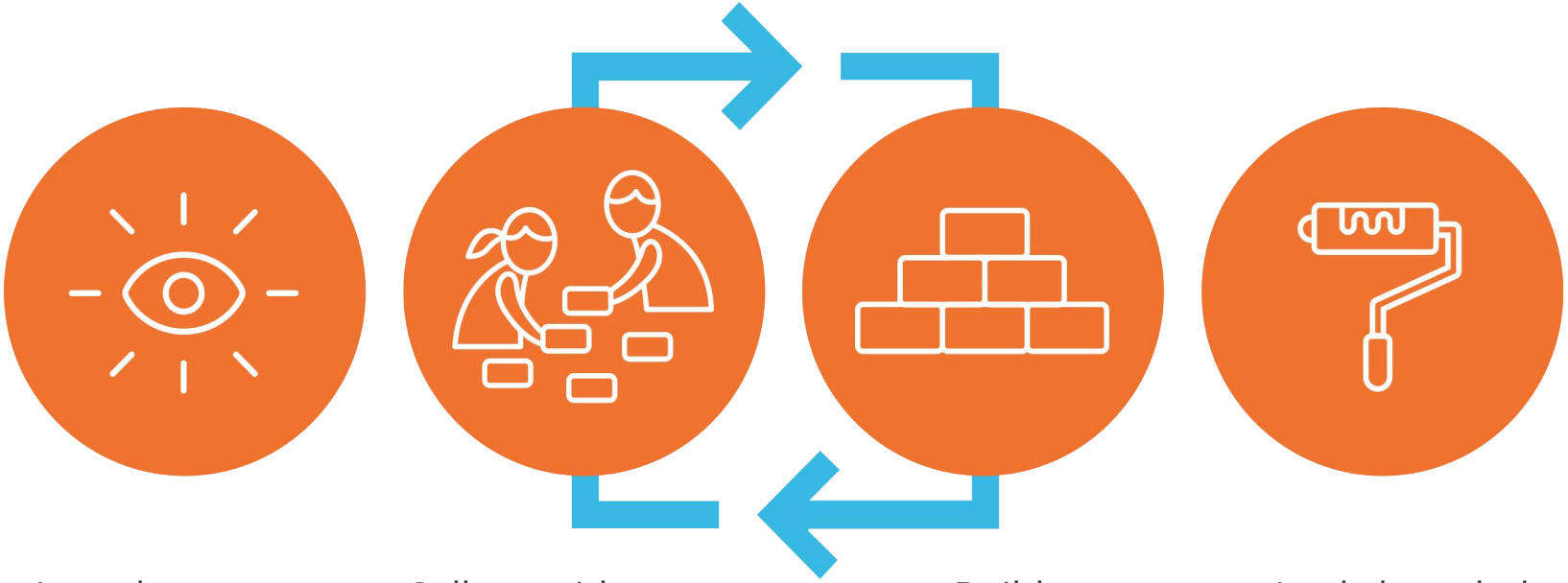
Revisiting the Amplify Science approach

What comes to mind when you think about the Amplify Science instructional approach?

(In other words, what are teaching and leanring like with Amplify Science?)



Amplify Science Instructional Approach



Introduce a phenomenon and a related problem

Collect evidence from multiple sources

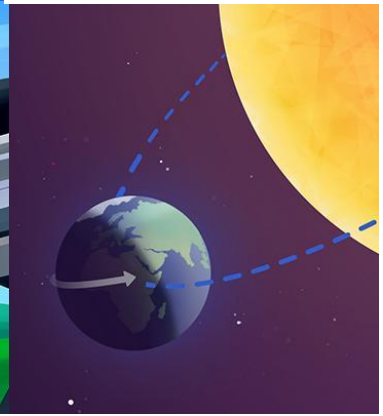
Build increasingly complex explanations

Apply knowledge to solve a different problem

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

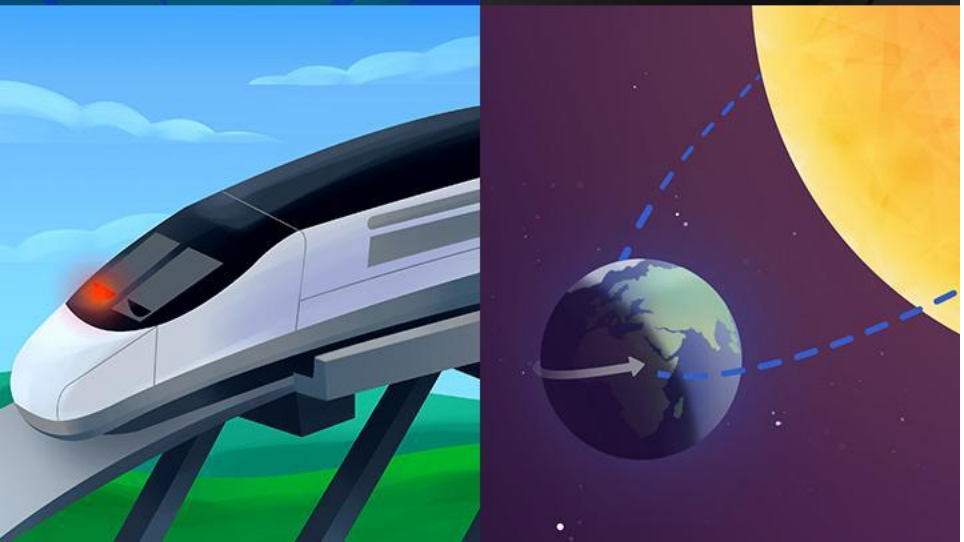
- Energy Conversions
- Vision and Light
- Earth's Features
- Waves, Energy, and Information

Grade 5

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

Amplify Science

authored by THE LAWRENCE HALL OF SCIENCE



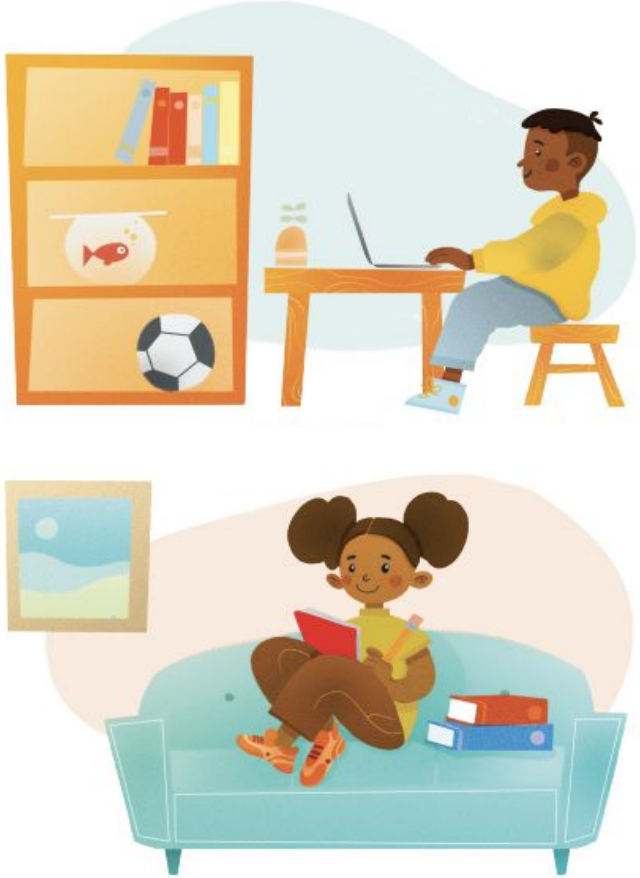
Plan for the day

- 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

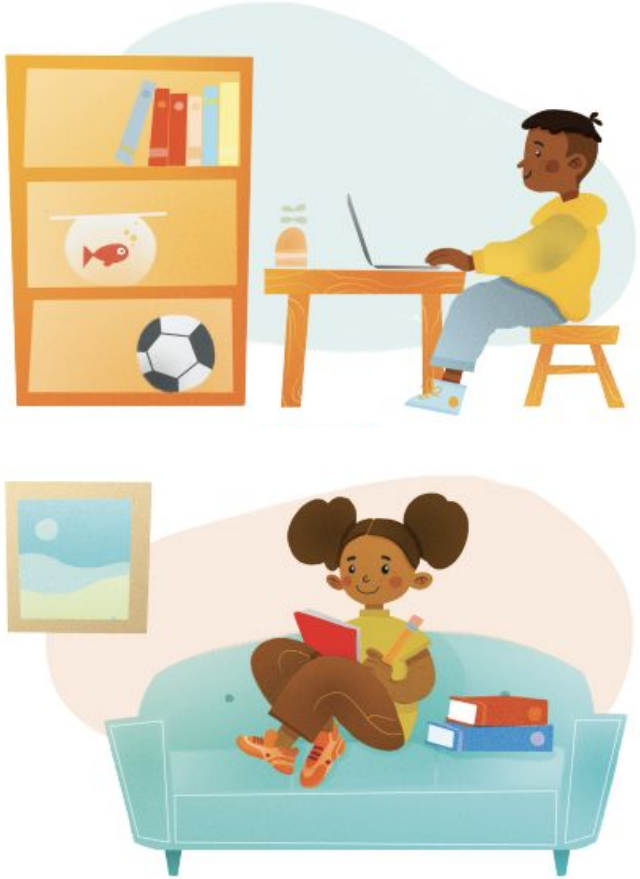
Two different options:

@Home Units

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

@Home Videos

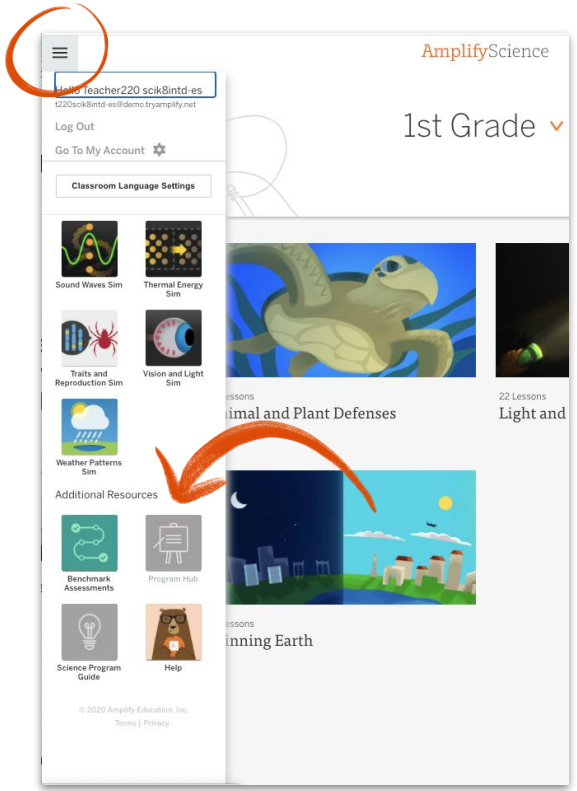
- Video playlists of Amplify Science lessons, taught by real Amplify Science teachers



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

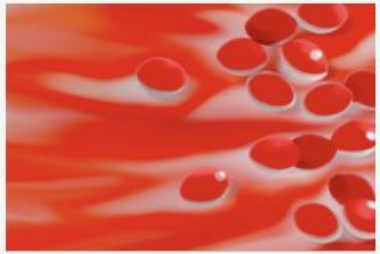
Modeling Matter

Standard Amplify Science Curriculum

The Modeling Matter unit has **22 lessons** across 3 chapters. Each lesson is written to be **60 minutes** long.

JUMP DOWN TO UNIT GUIDE

GENERATE PRINTABLE TEACHER'S GUIDE



Chapter 1: Why did the food coloring separate into different dyes?

10 Lessons

Chapter 2: Why do some salad dressings have sediments, and others do not?

5 Lessons

C
sa
in
ag

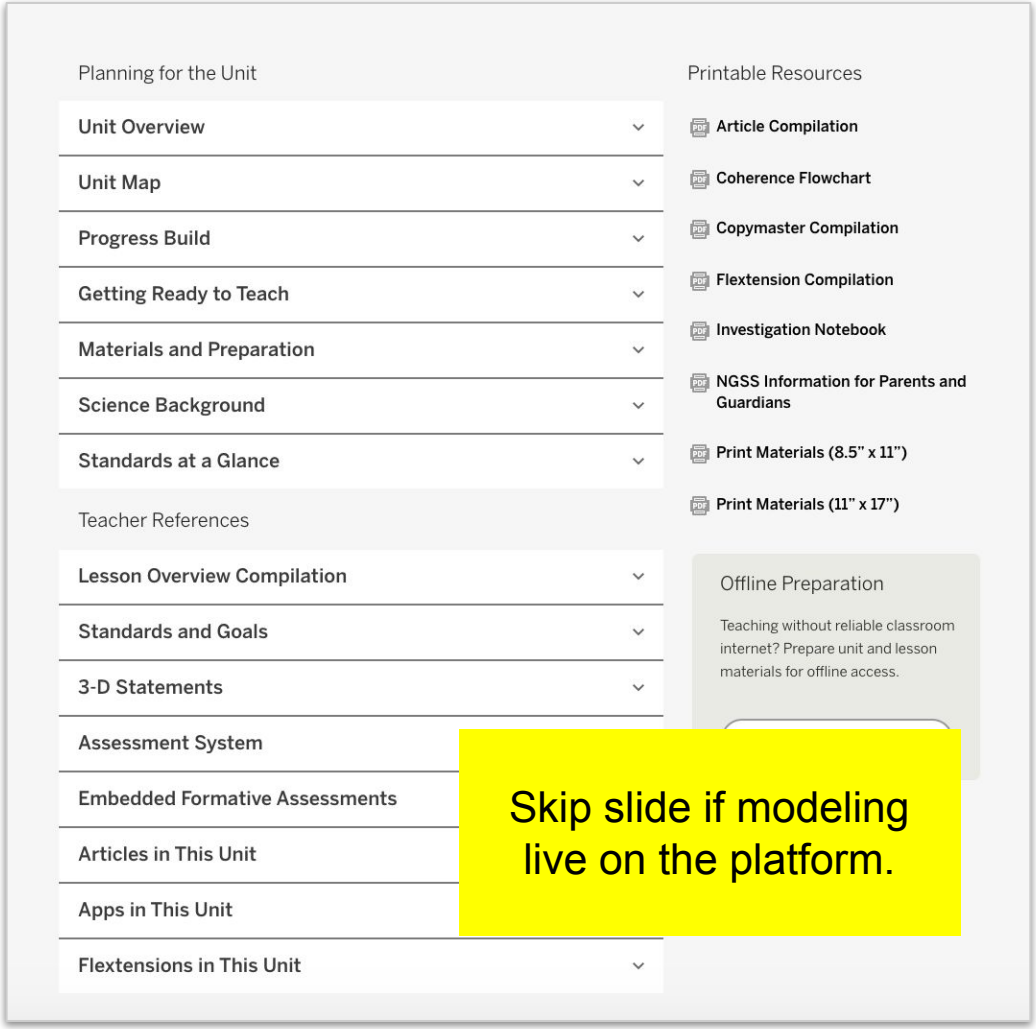
7 Lessons

Skip slide if modeling live on the platform.

Standard Amplify Science Curriculum

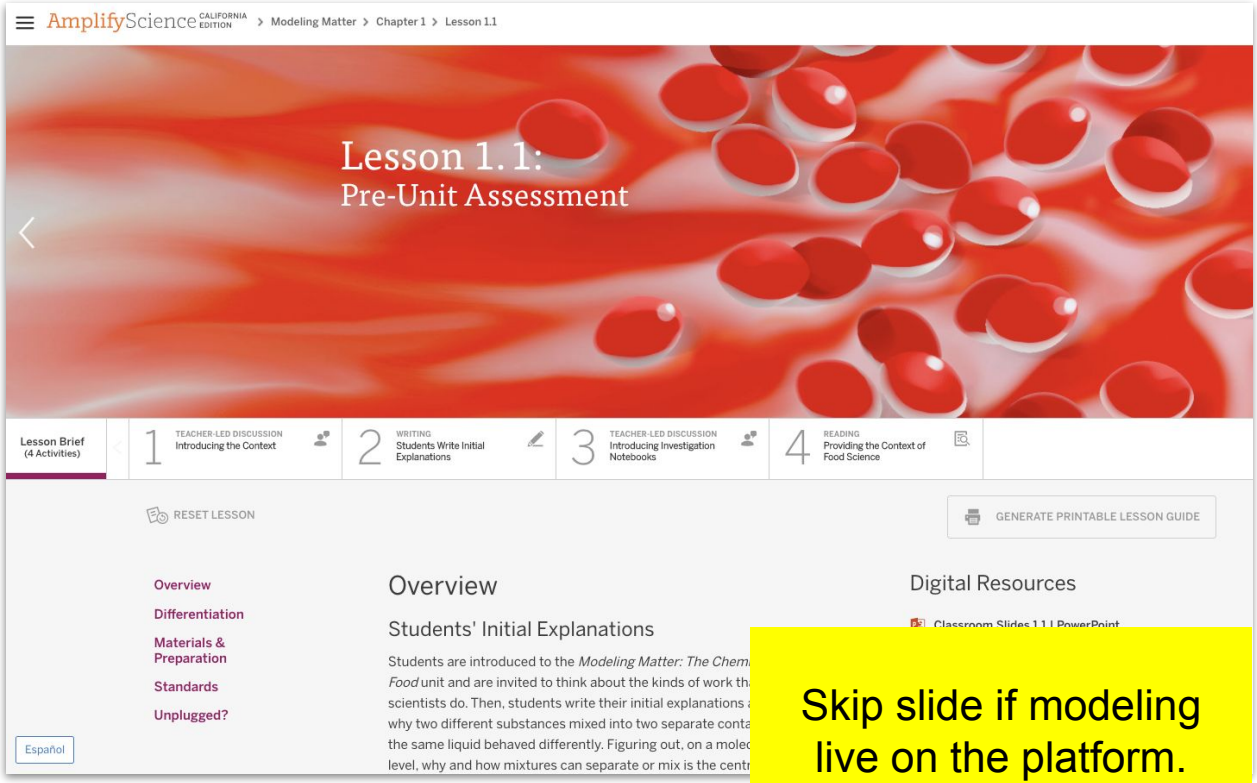
On the standard Amplify Science platform you will find all of your key documents for planning for the unit.

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



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.



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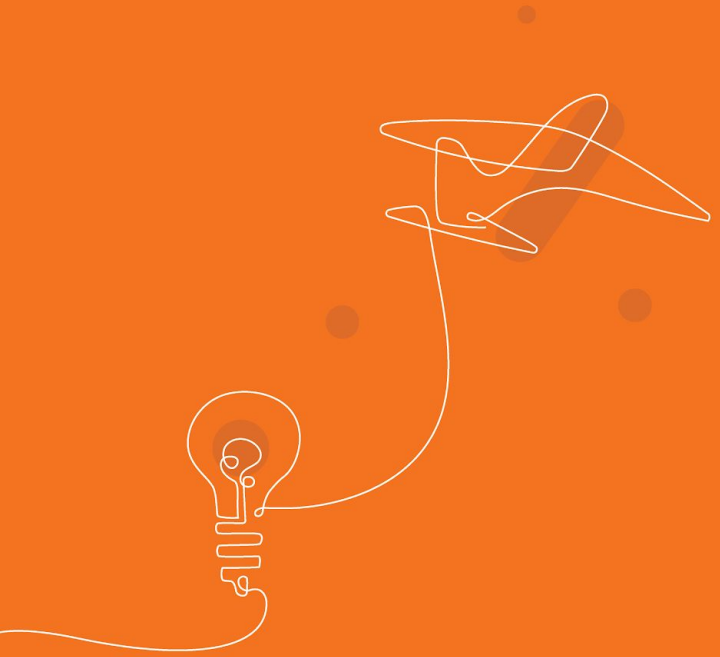


Resource Reflection

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

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

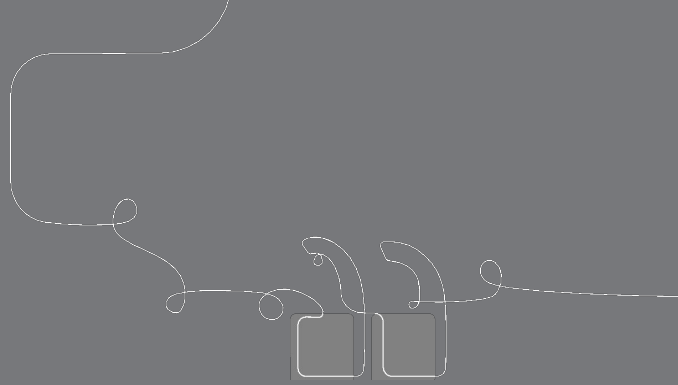
How do these resources meet your needs for remote teaching?

How does this resource meet the needs of your students in remote learning?

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

How is instruction going with this resource?

AmplifyScience



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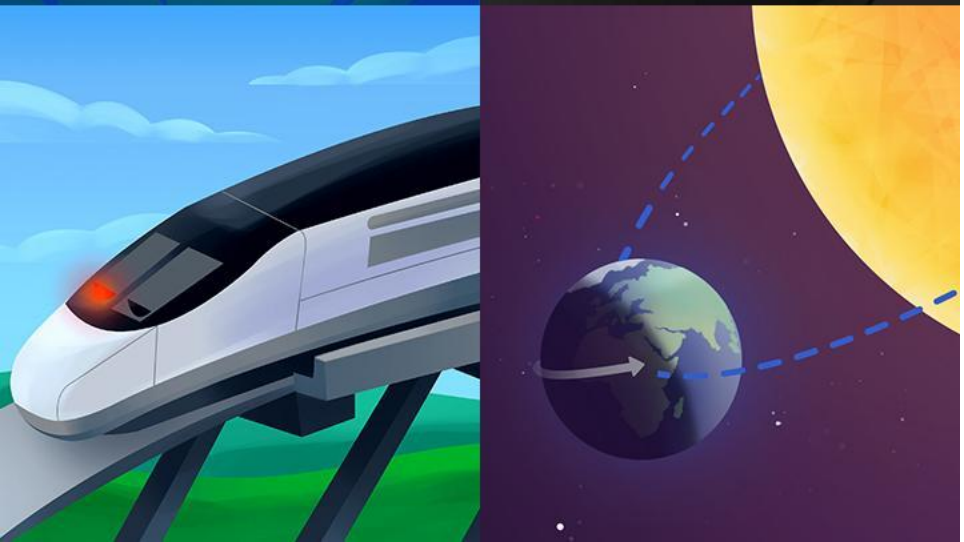

Plan for the day

- Framing the day
- Amplify Science Instructional Materials
- **Unit Internalization**
- Planning to teach using @Home resources
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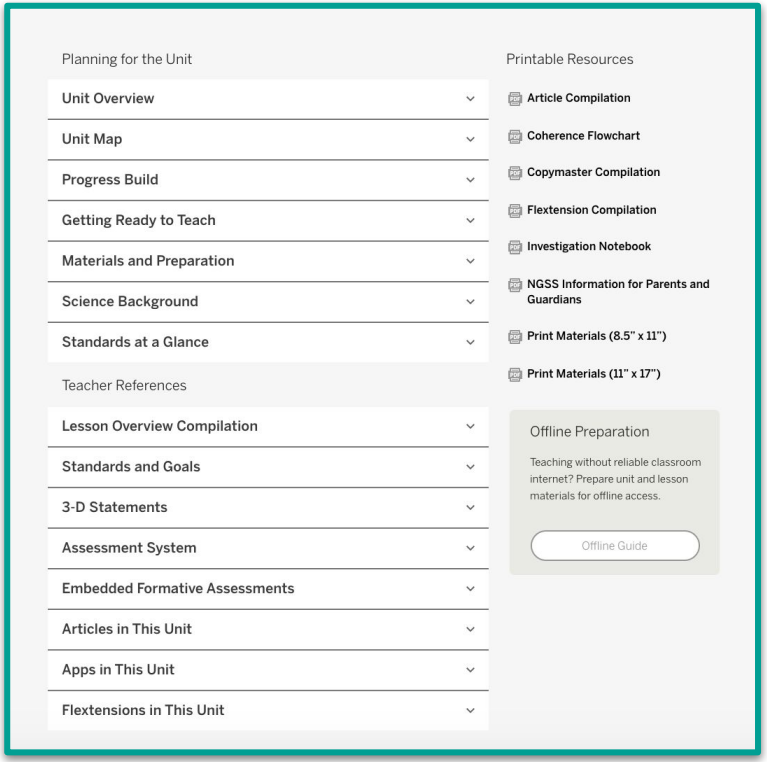
Part 1: Unit-level Internalization

Unit Guide Resources



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

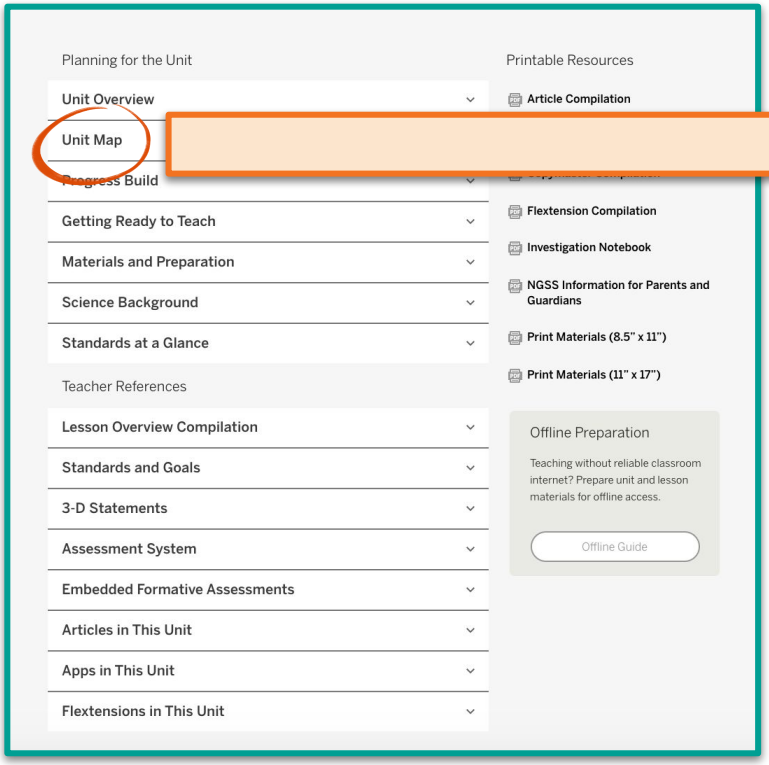
Teacher references

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)

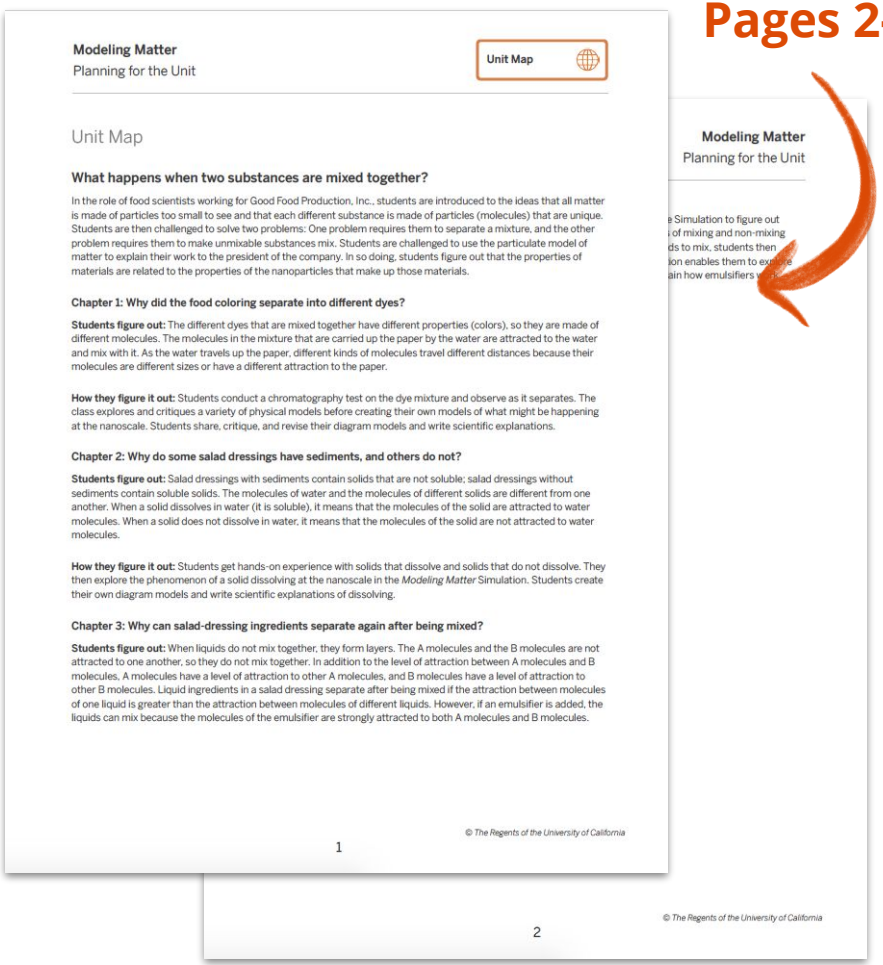
Printable resources

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



Modeling Matter
Planning for the Unit

Unit Map

Unit Map

What happens when two substances are mixed together?

In the role of food scientists working for Good Food Production, Inc., students are introduced to the ideas that all matter is made of particles too small to see and that each different substance is made of particles (molecules) that are unique. Students are then challenged to solve two problems: One problem requires them to separate a mixture, and the other problem requires them to make unmixable substances mix. Students are challenged to use the particulate model of matter to explain their work to the president of the company. In so doing, students figure out that the properties of materials are related to the properties of the nanoparticles that make up those materials.

Chapter 1: Why did the food coloring separate into different dyes?

Students figure out: The different dyes that are mixed together have different properties (colors), so they are made of different molecules. The molecules in the mixture that are carried up the paper by the water are attracted to the water and mix with it. As the water travels up the paper, different kinds of molecules travel different distances because their molecules are different sizes or have a different attraction to the paper.

How they figure it out: Students conduct a chromatography test on the dye mixture and observe as it separates. The class explores and critiques a variety of physical models before creating their own models of what might be happening at the nanoscale. Students share, critique, and revise their diagram models and write scientific explanations.

Chapter 2: Why do some salad dressings have sediments, and others do not?

Students figure out: Salad dressings with sediments contain solids that are not soluble; salad dressings without sediments contain soluble solids. The molecules of water and the molecules of different solids are different from one another. When a solid dissolves in water (it is soluble), it means that the molecules of the solid are attracted to water molecules. When a solid does not dissolve in water, it means that the molecules of the solid are not attracted to water molecules.

How they figure it out: Students get hands-on experience with solids that dissolve and solids that do not dissolve. They then explore the phenomenon of a solid dissolving at the nanoscale in the *Modeling Matter* Simulation. Students create their own diagram models and write scientific explanations of dissolving.

Chapter 3: Why can salad-dressing ingredients separate again after being mixed?

Students figure out: When liquids do not mix together, they form layers. The A molecules and the B molecules are not attracted to one another, so they do not mix together. In addition to the level of attraction between A molecules and B molecules, A molecules have a level of attraction to other A molecules, and B molecules have a level of attraction to other B molecules. Liquid ingredients in a salad dressing separate after being mixed if the attraction between molecules of one liquid is greater than the attraction between molecules of different liquids. However, if an emulsifier is added, the liquids can mix because the molecules of the emulsifier are strongly attracted to both A molecules and B molecules.

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Guided Unit Internalization

Part 1: Unit-level internalization

Unit title: Modeling Matter

What is the phenomenon students are investigating in your unit?

How can we make a mixture separate? How can we make unmixable substances mix instead of separating into layers in a salad dressing?

Unit Question:

Student role:

Food scientists

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

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

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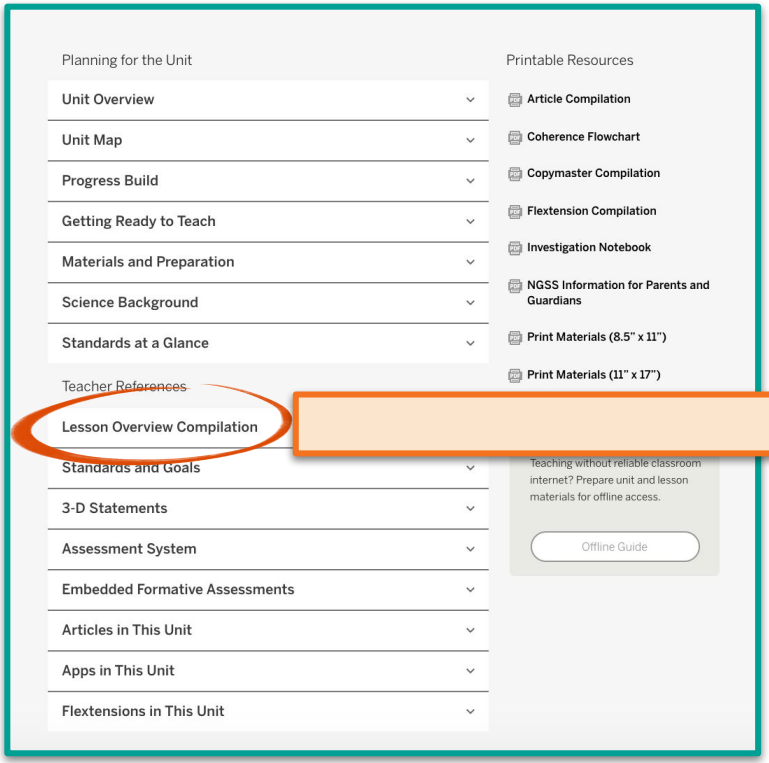
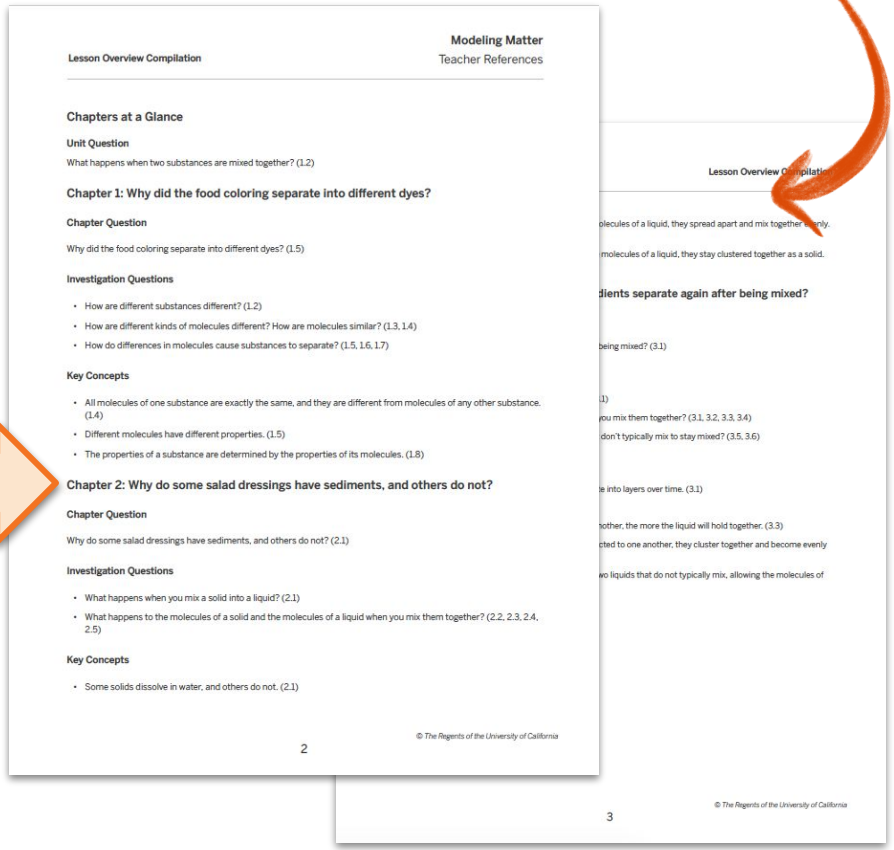
Lesson Overview Compilation

Pages 4-5





Lesson Overview Compilation

Modeling Matter
Teacher References

Chapters at a Glance

Unit Question

What happens when two substances are mixed together? (1.2)

Chapter 1: Why did the food coloring separate into different dyes?

Chapter Question

Why did the food coloring separate into different dyes? (1.5)

Investigation Questions

- How are different substances different? (1.2)
- How are different kinds of molecules different? How are molecules similar? (1.3, 1.4)
- How do differences in molecules cause substances to separate? (1.5, 1.6, 1.7)

Key Concepts

- All molecules of one substance are exactly the same, and they are different from molecules of any other substance. (1.4)
- Different molecules have different properties. (1.5)
- The properties of a substance are determined by the properties of its molecules. (1.8)

Chapter 2: Why do some salad dressings have sediments, and others do not?

Chapter Question

Why do some salad dressings have sediments, and others do not? (2.1)

Investigation Questions

- What happens when you mix a solid into a liquid? (2.1)
- What happens to the molecules of a solid and the molecules of a liquid when you mix them together? (2.2, 2.3, 2.4, 2.5)

Key Concepts

- Some solids dissolve in water, and others do not. (2.1)

Guided Unit Internalization

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What happens when two substances are mixed together?

Student role:
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By the end of the unit, students figure out ...

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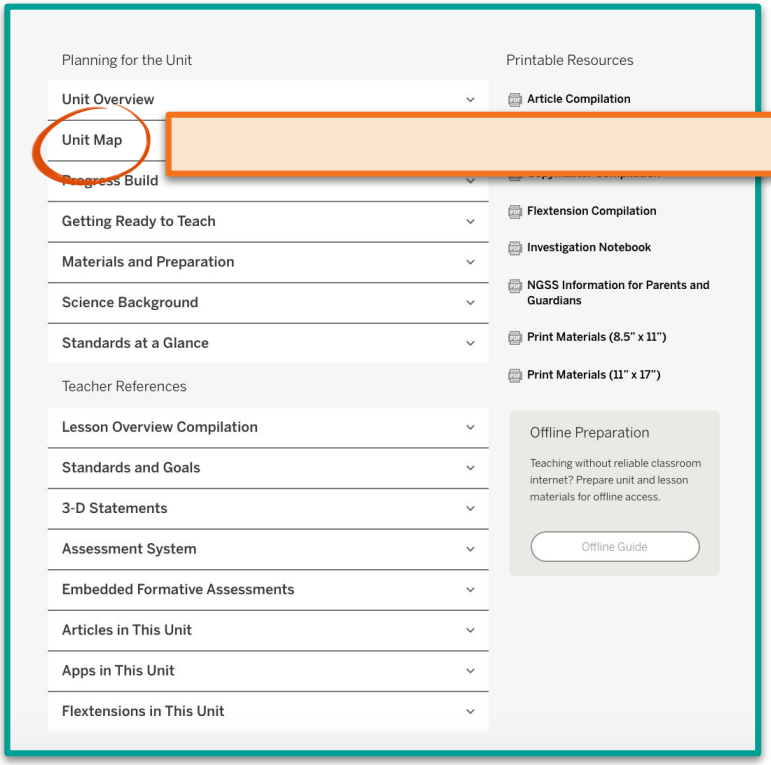
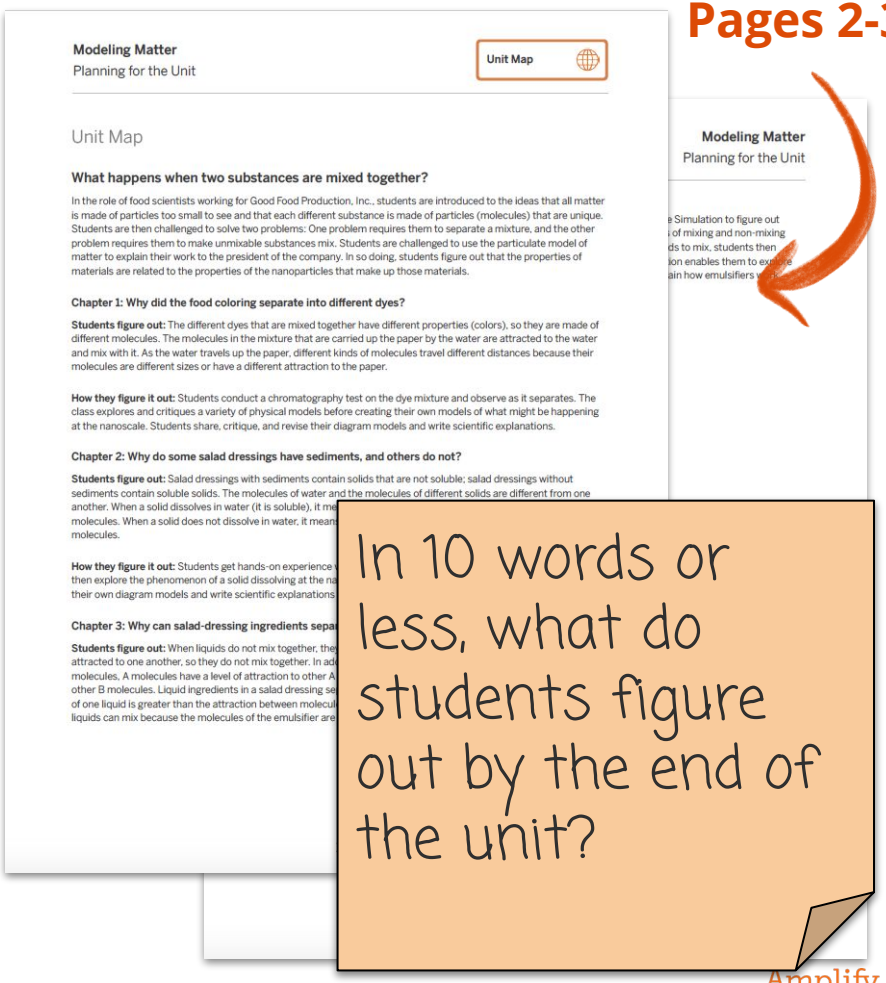
Unit Map



Pages 2-3



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: Modeling Matter

What is the phenomenon students are investigating in your unit?

How can we make a mixture separate? How can we make unmixable substances mix instead of separating into layers in a salad dressing?

Unit Question:
What happens when two substances are mixed together?

Student role:
Food scientists

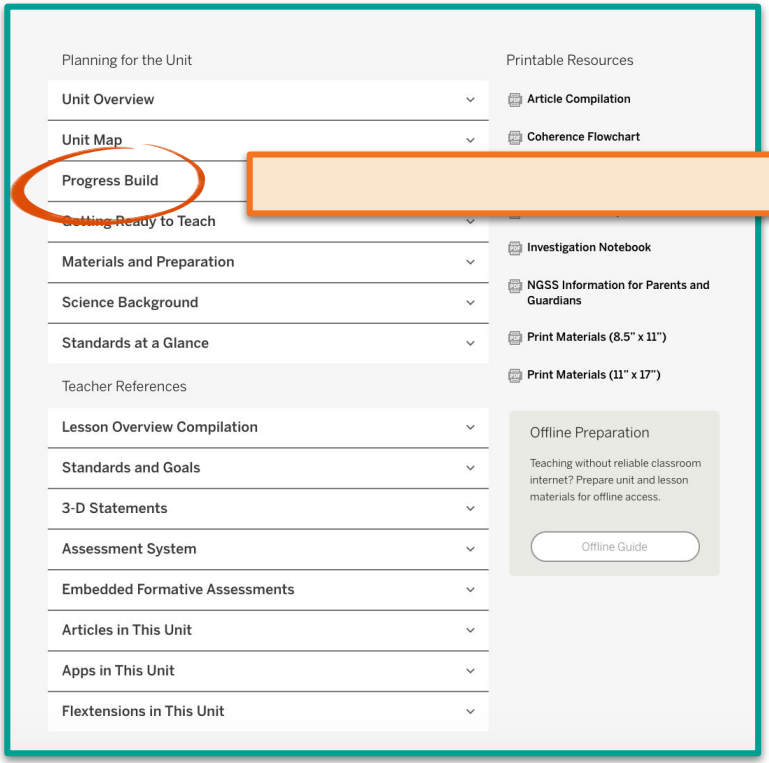
By the end of the unit, students figure out ...

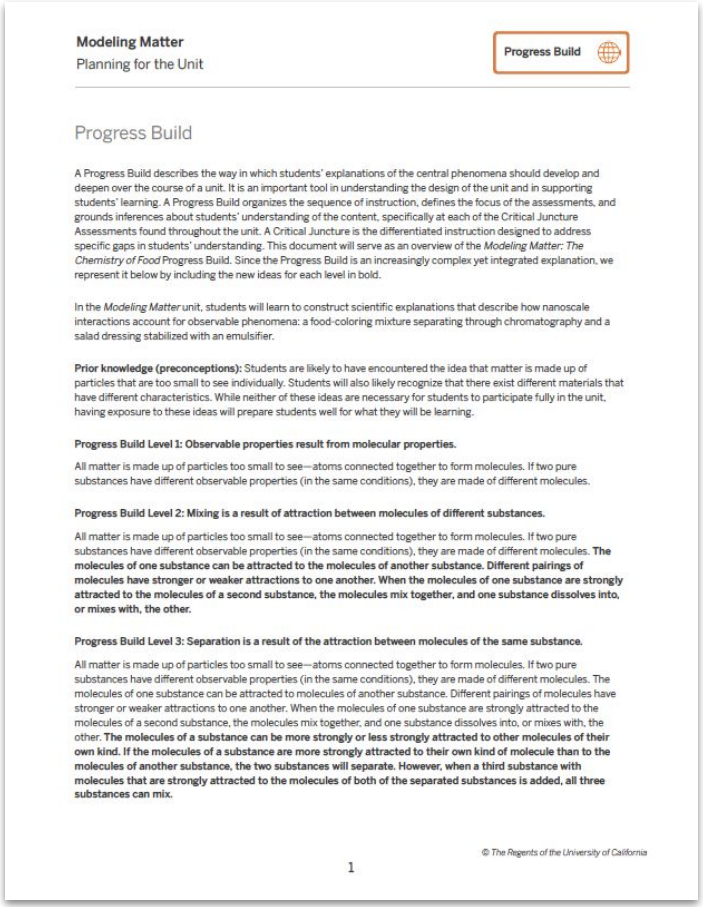
Molecular properties can explain mixing and separating in salad dressing.

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

Progress Build

Page 6





Modeling Matter
Planning for the Unit

Progress Build

Progress Build

A Progress Build describes the way in which students' explanations of the central phenomena should develop and deepen over the course of a unit. It is an important tool in understanding the design of the unit and in supporting students' learning. A Progress Build organizes the sequence of instruction, defines the focus of the assessments, and grounds inferences about students' understanding of the content, specifically at each of the Critical Juncture Assessments found throughout the unit. A Critical Juncture is the differentiated instruction designed to address specific gaps in students' understanding. This document will serve as an overview of the *Modeling Matter; The Chemistry of Food* 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 *Modeling Matter* unit, students will learn to construct scientific explanations that describe how nanoscale interactions account for observable phenomena: a food-coloring mixture separating through chromatography and a salad dressing stabilized with an emulsifier.

Prior knowledge (preconceptions): Students are likely to have encountered the idea that matter is made up of particles that are too small to see individually. Students will also likely recognize that there exist different materials that have different characteristics. While neither of these ideas are 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: Observable properties result from molecular properties.

All matter is made up of particles too small to see—atoms connected together to form molecules. If two pure substances have different observable properties (in the same conditions), they are made of different molecules.

Progress Build Level 2: Mixing is a result of attraction between molecules of different substances.

All matter is made up of particles too small to see—atoms connected together to form molecules. If two pure substances have different observable properties (in the same conditions), they are made of different molecules. **The molecules of one substance can be attracted to the molecules of another substance. Different pairings of molecules have stronger or weaker attractions to one another. When the molecules of one substance are strongly attracted to the molecules of a second substance, the molecules mix together, and one substance dissolves into, or mixes with, the other.**

Progress Build Level 3: Separation is a result of the attraction between molecules of the same substance.

All matter is made up of particles too small to see—atoms connected together to form molecules. If two pure substances have different observable properties (in the same conditions), they are made of different molecules. The molecules of one substance can be attracted to molecules of another substance. Different pairings of molecules have stronger or weaker attractions to one another. When the molecules of one substance are strongly attracted to the molecules of a second substance, the molecules mix together, and one substance dissolves into, or mixes with, the other. **The molecules of a substance can be more strongly or less strongly attracted to other molecules of their own kind. If the molecules of a substance are more strongly attracted to their own kind of molecule than to the molecules of another substance, the two substances will separate. However, when a third substance with molecules that are strongly attracted to the molecules of both of the separated substances is added, all three substances can mix.**

Amplify.

Guided Unit Internalization

Part 1: Unit-level internalization

Unit title: Modeling Matter

What is the phenomenon students are investigating in your unit?

How can we make a mixture separate? How can we make unmixable substances mix instead of separating into layers in a salad dressing?

Unit Question:
What happens when two substances are mixed together?

Student role:
Food scientists

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

Molecular properties can explain mixing and separating in salad dressing.

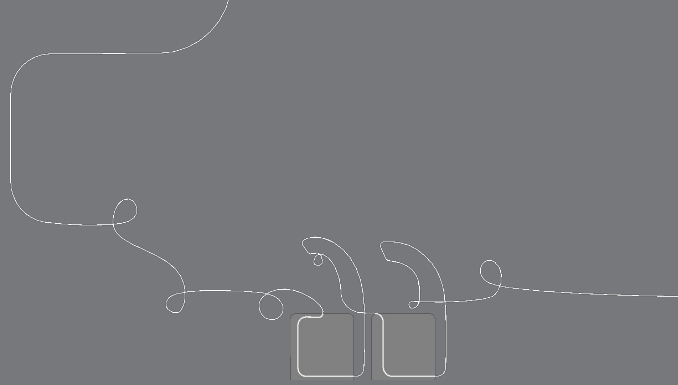
What science ideas do students need to figure out in order to explain the phenomenon?

Observable properties result from molecular properties. Mixing is a result of attraction between molecules of different substances. Separation is a result of the attraction between molecules of the same substance.

Unit Level

Think - Type - Discuss

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



Questions?

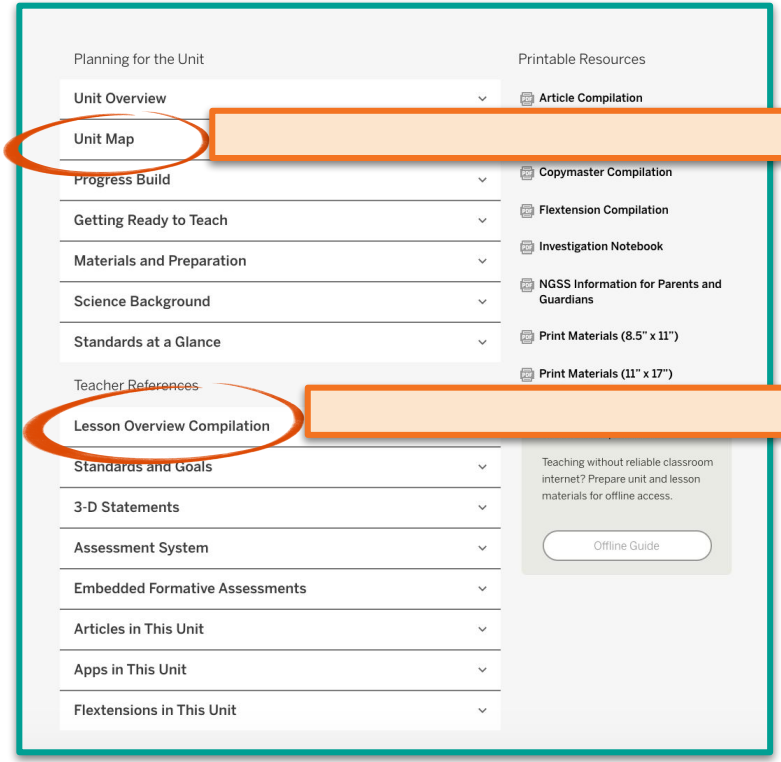
Part 2: Chapter-level Internalization

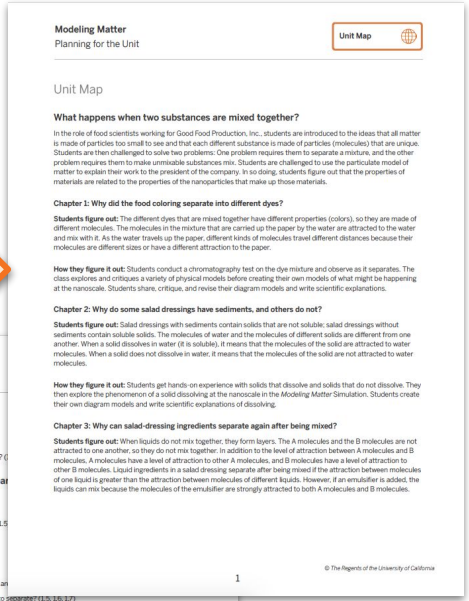
Part 2: Chapter-level internalization

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




Modeling Matter
Planning for the Unit
Unit Map

Unit Map

What happens when two substances are mixed together?

In the role of food scientists working for Good Food Production, Inc., students are introduced to the ideas that all matter is made of particles too small to see and that each different substance is made of particles (molecules) that are unique. Students are then challenged to solve two problems: One problem requires them to separate a mixture, and the other problem requires them to make unmixable substances mix. Students are challenged to use the particulate model of matter to explain their work to the president of the company. In so doing, students figure out that the properties of materials are related to the properties of the nanoparticles that make up those materials.

Chapter 1: Why did the food coloring separate into different dyes?

Students figure out: The different dyes that are mixed together have different properties (colors), so they are made of different molecules. The molecules in the mixture that are carried up the paper by the water are attracted to the water and mix with it. As the water travels up the paper, different kinds of molecules travel different distances because their molecules are different sizes or have a different attraction to the paper.

How they figure it out: Students conduct a chromatography test on the dye mixture and observe as it separates. The class explores and critiques a variety of physical models before creating their own models of what might be happening at the nanoscale. Students share, critique, and revise their diagram models and write scientific explanations.

Chapter 2: Why do some salad dressings have sediments, and others do not?

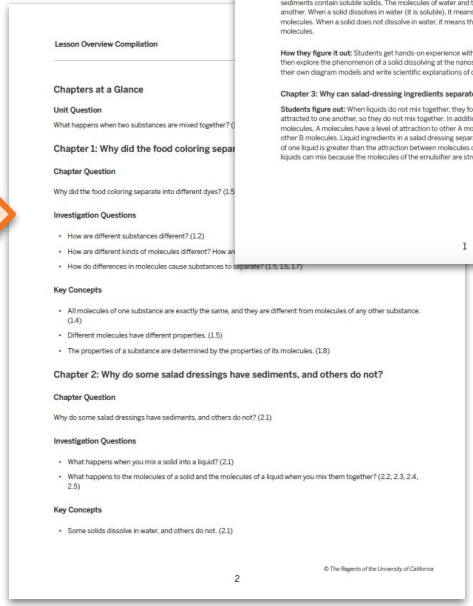
Students figure out: Salad dressings with sediments contain solids that are not soluble; salad dressings without sediments contain soluble solids. The molecules of water and the molecules of different solids are different from one another. When a solid dissolves in water (it is soluble), it means that the molecules of the solid are attracted to water molecules. When a solid does not dissolve in water, it means that the molecules of the solid are not attracted to water molecules.

How they figure it out: Students get hands-on experience with solids that dissolve and solids that do not dissolve. They then explore the phenomenon of a solid dissolving at the nanoscale in the *Modeling Matter* Simulation. Students create their own diagram models and write scientific explanations of dissolving.

Chapter 3: Why can salad-dressing ingredients separate again after being mixed?

Students figure out: When liquids do not mix together, they form layers. The A molecules and the B molecules are not attracted to one another, so they do not mix together. In addition to the level of attraction between A molecules and B molecules, A molecules have a level of attraction to other A molecules, and B molecules have a level of attraction to other B molecules. Liquid ingredients in a salad dressing separate after being mixed if the attraction between molecules of one liquid is greater than the attraction between molecules of different liquids. However, if an emulsifier is added, the liquids can mix because the molecules of the emulsifier are strongly attracted to both A molecules and B molecules.

1


Lesson Overview Compilation

Chapters at a Glance

Unit Question

What happens when two substances are mixed together? (

Chapter 1: Why did the food coloring separ

Chapter Question

Why did the food coloring separate into different dyes? (1.5

Investigation Questions

- How are different substances different? (1.2)
- How are different kinds of molecules different? How ar
- How do differences in molecules cause substances to separate? (1.5, 1.6, 1.7)

Key Concepts

- All molecules of one substance are exactly the same, and they are different from molecules of any other substance. (1.4)
- Different molecules have different properties. (1.5)
- The properties of a substance are determined by the properties of its molecules. (1.8)

Chapter 2: Why do some salad dressings have sediments, and others do not?

Chapter Question

Why do some salad dressings have sediments, and others do not? (2.1)

Investigation Questions

- What happens when you mix a solid into a liquid? (2.1)
- What happens to the molecules of a solid and the molecules of a liquid when you mix them together? (2.2, 2.3, 2.4, 2.5)

Key Concepts

- Some solids dissolve in water, and others do not. (2.1)

2

Pages 2-3

Pages 4-5

Amplify.

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:

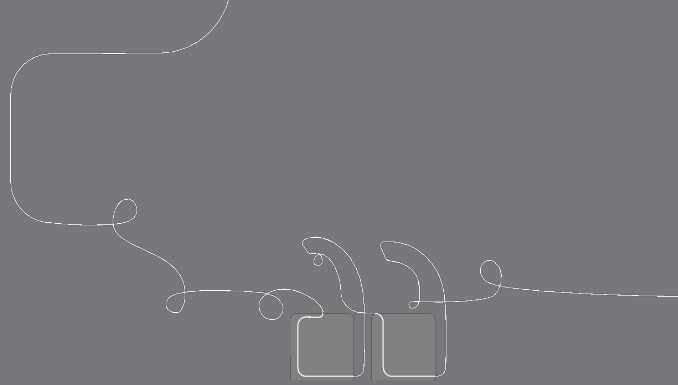
Why did the food coloring separate into different dyes?

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?
• All molecules of one substance are exactly the same, and they are different from molecules of any other substance. (1.4) • Different molecules have different properties. (1.5) • The properties of a substance are determined by the properties of its molecules. (1.8)	The different dyes that are mixed together have different properties (colors), so they are made of different molecules. The molecules in the mixture that are carried up the paper by the water are attracted to the water and mix with it. Different kinds of molecules travel different distances because their molecules are different sizes or have a different attraction to the paper.

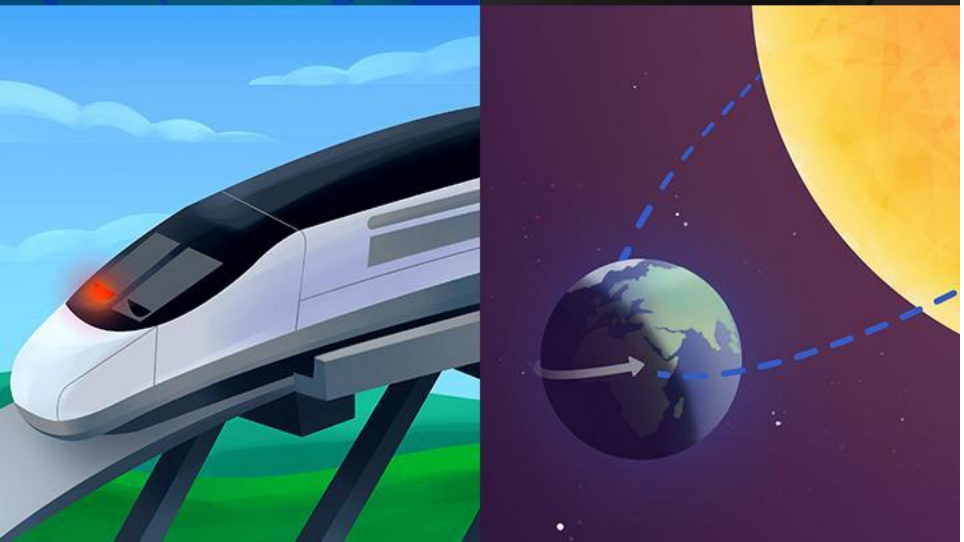
Chapter Level

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 Good Food Production, Inc.:** Students are introduced to the unit context and to their role as food scientists.
- **Write:** Students complete a pre-unit writing activity to record their initial thoughts about unit content.
- **Read:** Students read the introduction of the unit reference book, *Food Scientist's Handbook*, to learn more about the role of a food scientist.

Ideas for synchronous or in-person instruction

While meeting, introduce the unit context by showing images of food scientists. Invite students to share their ideas about where food scientists work and what they study. Then, have students complete the pre-unit writing and reference book reading after meeting.

Modeling Matter

@Home Lesson 1

AmplifyScience

We are starting a unit called *Modeling Matter: The Chemistry of Food*.

This unit is about **matter**, which is the stuff that everything around us is made of, including food!

We will take a **close look at food**, not just as something tasty to eat, but also as something interesting to study.

Let’s think about what **food scientists** do.

Take a moment to look at these pictures of food scientists.

Where do you think a food scientist **works**?

Take a moment to look at these pictures.

What do you think food scientists **want to find out** about the food they study?

Good Food Production, Inc.

For the next few weeks, we are going to take on the role of **food scientists** for a company called Good Food Production, Inc.

Adapted from: Amplify Science *Modeling Matter* Lesson 1.1

Key Activities

- **Introducing Good Food Production, Inc.:** Students are introduced to the unit context and to their role as food scientists.
- **Write:** Students complete a pre-unit writing activity to record their initial thoughts about unit content.
- **Read:** Students read the introduction of the unit reference book, *Food Scientist's Handbook*, to learn more about the role of a food scientist.

Ideas for synchronous or in-person instruction

While meeting, introduce the unit context by showing images of food scientists. Invite students to share their ideas about where food scientists work and what they study. Then, have students complete the pre-unit writing and reference book reading after meeting.

Before we start, you will **write your ideas** about a food scientist testing new ingredients in her lab by mixing them together.

She tests three **substances**.

Substance A

Substance C

Substance B

Substance A is a white powder.

Substance B is a different white powder.

Substance C is a clear liquid.

Substance A

Substance C

She adds a spoonful of Substance A to a cup of Substance C. She stirs them for 30 seconds.

Substance A settles to the bottom of the container.

Substance B

Substance C

She adds a spoonful of Substance B to a new cup of Substance C. She stirs them for 30 seconds.

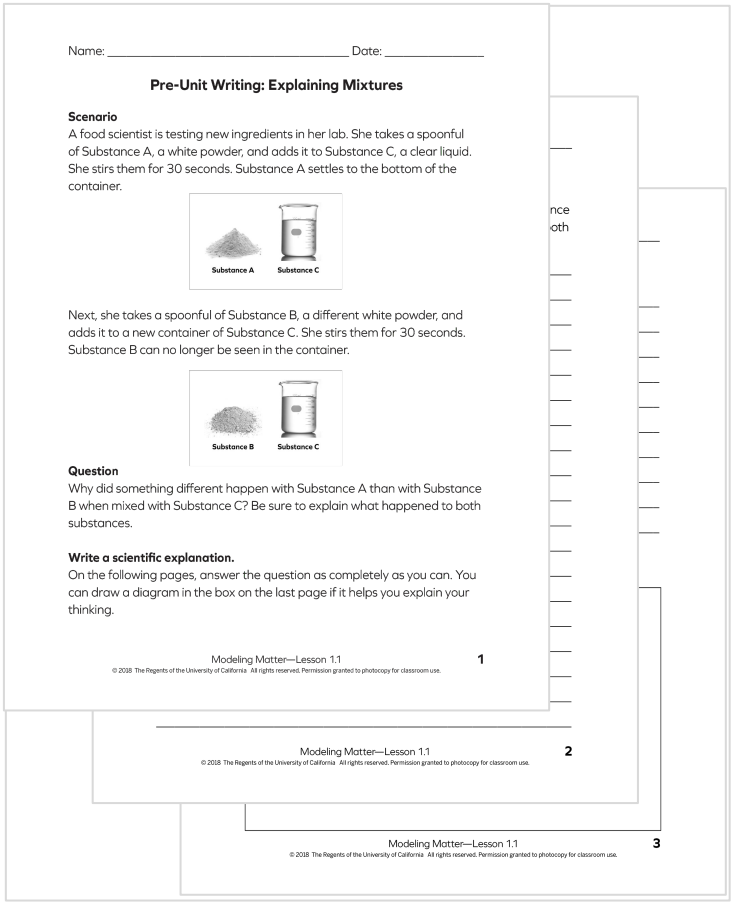
Substance B can no longer be seen.

Substance A

Substance C

Substance B

You are going to write your **first ideas** about why something different happened with Substance A than with Substance B when mixed with Substance C.



Name: _____ Date: _____

Pre-Unit Writing: Explaining Mixtures

Scenario
A food scientist is testing new ingredients in her lab. She takes a spoonful of Substance A, a white powder, and adds it to Substance C, a clear liquid. She stirs them for 30 seconds. Substance A settles to the bottom of the container.

Next, she takes a spoonful of Substance B, a different white powder, and adds it to a new container of Substance C. She stirs them for 30 seconds. Substance B can no longer be seen in the container.

Question
Why did something different happen with Substance A than with Substance B when mixed with Substance C? Be sure to explain what happened to both substances.

Write a scientific explanation.
On the following pages, answer the question as completely as you can. You can draw a diagram in the box on the last page if it helps you explain your thinking.

Modeling Matter—Lesson 1.1 1

Modeling Matter—Lesson 1.1 2

Modeling Matter—Lesson 1.1 3

Find the **Pre-Unit Writing: Explaining Mixtures** pages.

Read the directions.

Then, **record your ideas** about the mixtures.

Adapted from: Amplify Science *Modeling Matter* Lesson 1.1

Key Activities

- **Introducing Good Food Production, Inc.:** Students are introduced to the unit context and to their role as food scientists.
- **Write:** Students complete a pre-unit writing activity to record their initial thoughts about unit content.
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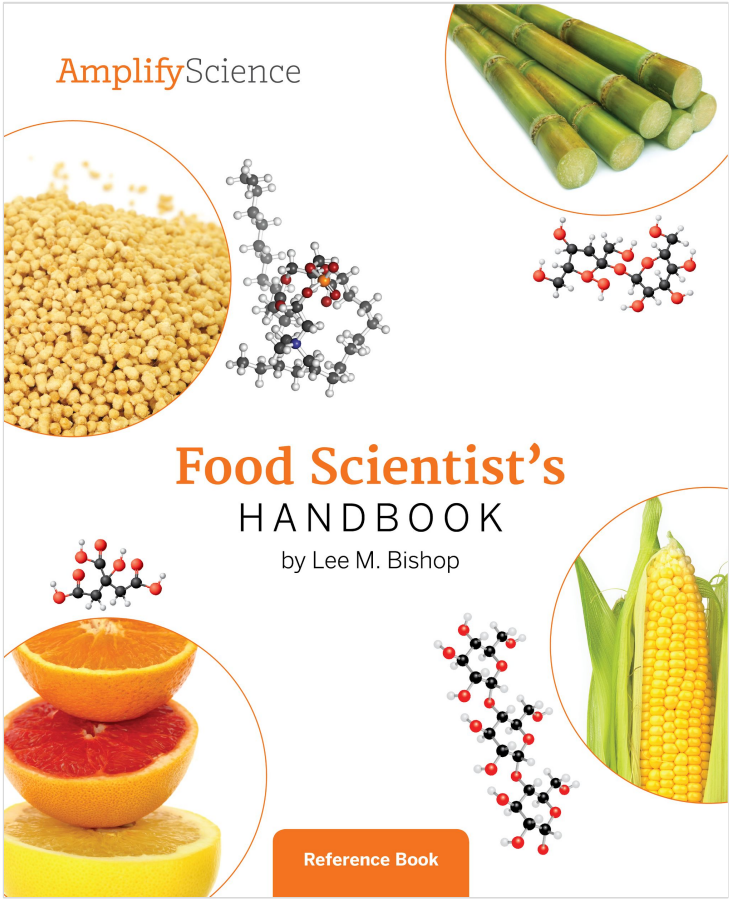
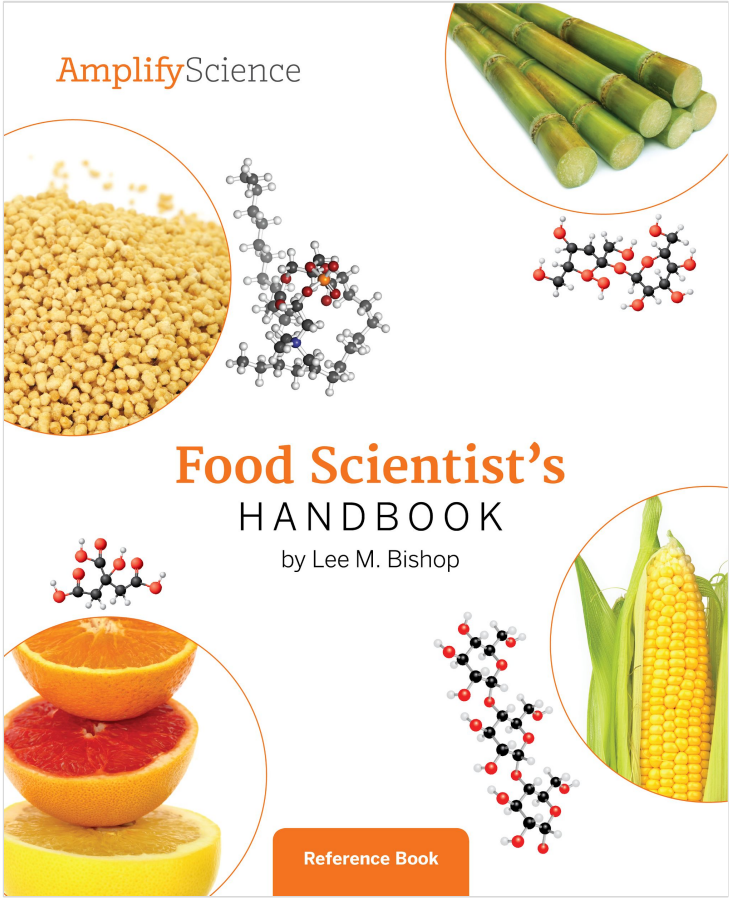
While meeting, introduce the unit context by showing images of food scientists. Invite students to share their ideas about where food scientists work and what they study. Then, have students complete the pre-unit writing and reference book reading after meeting.



This is a reference book for food scientists. A reference book is read differently from some other informational books.

Instead of reading reference books cover to cover, we use them to **locate information about topics** we wonder about.

Check with your teacher about how you will access books in this @Home Unit.



You will have many chances to find useful information in this book as you do your food science investigations.

Today we will read the introduction to learn more about the role of a **food scientist**.

You can access a digital version of the book here, or watch a video read-aloud at [link]

Accessing digital books

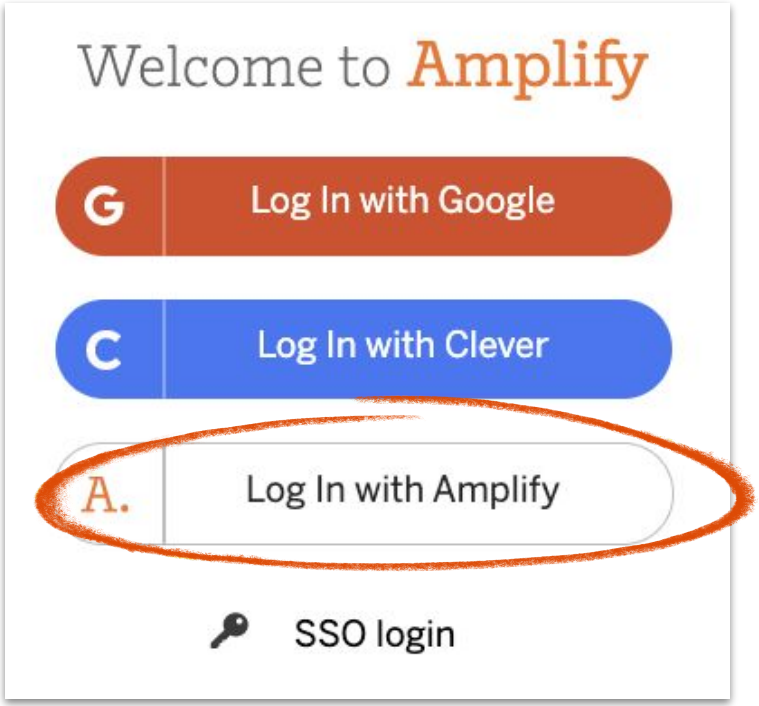
Click: Log in with Amplify

English

username: ampsci123
Password: ampsci123

Spanish

username: ampsci123sp
Password: ampsci123sp



These are food scientists.

Introduction to Food Science

Food science is all about applying scientific thinking to the way food is prepared. It is not just about making flavorful new creations that nobody has ever seen before. It is also about understanding the science behind why things happen the way they do when food is prepared.

Food scientists are scientists who perform careful experiments with food. Food scientists work in labs and out in the field just like other scientists. Some food scientists study and design better ways to grow safe and healthy plants and animals. Other food scientists research ways to take those plants and animals and make new foods in new ways. Another important job of food scientists is to measure what **substances** are in foods, so they can make sure those foods are safe and healthy.

Food scientists are learning more every day about what makes up the ingredients people use in the kitchen. This helps them figure out how to use new ingredients and how to use old ingredients in better ways. Food scientists are always learning more about the **molecules** that make up the ingredients they work with, because knowing more about the molecules helps them think up new and better ways to use those ingredients. Food scientists also think carefully about what happens to ingredients when they put them through processes like mixing, heating, or cooling.

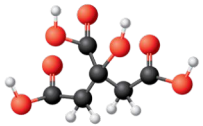
Some food scientists study new ways to make food from plants.

Read pages 4-5.

Food scientists need to know what is happening to ingredients on a very small scale—the **nanoscale**. Understanding what happens to ingredients on the nanoscale when they are mixed, heated, or cooled can help food scientists figure out what processes they should use to make new kinds of food.

To become a food scientist it is important to learn about how all of science works. Food scientists go to special schools to study food science, but they begin by learning things like math, physics, biology, and chemistry.

Food scientists think about what is happening at the nanoscale in foods: for example, the way citric acid molecules make oranges taste sour.



This is a model of a citric acid molecule.

Read **page 6**.

Now that we've read about food scientists, let's return to these pictures.

Do you remember the kinds of places **where a food scientist works**?

Scientists who **work in labs** might use special technologies to study foods up close. Scientists who **work in the field** might visit places where animals or plants are—where foods are raised or grown.

What might scientists **want to find out** about the foods they study?

People’s needs and wants for new or safer foods change over time.

By studying foods, food scientists can make **flavorful new creations** and **safer food products** to address these changing needs and wants.

Throughout this unit, we will continue to learn about **what food scientists do**.

End of Lesson

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

Amplify.

Published and Distributed by Amplify. www.amplify.com

Adapted from: Amplify Science *Modeling Matter* Lesson 1.1

Key Activities

- **Introducing Good Food Production, Inc.:** Students are introduced to the unit context and to their role as food scientists.
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Ideas for synchronous or in-person instruction

While meeting, introduce the unit context by showing images of food scientists. Invite students to share their ideas about where food scientists work and what they study. Then, have students complete the pre-unit writing and reference book reading after 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.

page 13

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

Day 1: @Home Lesson 1

Minutes for science: 30 min

Instructional format:
- [ ] Asynchronous
- [x] Synchronous

Lesson or part of lesson:

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

Mode of instruction:
- ❑ Preview
- ❑ Review
- ❑ Teach full lesson live
- [x] Teach using synchronous suggestions
- ❑ Students work independently using:
  - ❑ @Home Packet
  - [x] @Home Slides and @Home Student Sheets
  - ❑ @Home Videos

Students will...	Teacher will...
be introduced to the unit problem and brainstorm/discuss their ideas about food scientists. They will practice online discussion.	walk through slides 1-6 to introduce the unit problem. Slides 4-5, lead discussions to replace think prompt. Model and set expectations for online class discussion.

Minutes for science: _____

Instructional format:
- [x] Asynchronous
- [ ] Synchronous

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Students will...	Teacher will...
be introduced to the unit problem and brainstorm/discuss their ideas about food scientists. They will practice online discussion.	walk through slides 1-6 to introduce the unit problem. Slides 4-5, lead discussions to replace think prompt. Model and set expectations for online class discussion.

Minutes for science: 30-40 min

Instructional format:
- [x] Asynchronous
- [ ] Synchronous

Lesson or part of lesson:
@Home Lesson 1, slides 7-22: pre-unit writing and browsing reference book

Mode of instruction:
- ❑ Preview
- ❑ Review
- ❑ Teach full lesson live
- ❑ Teach using synchronous suggestions
- ❑ Students work independently using:
  - ❑ @Home Packet
  - [x] @Home Slides and @Home Student Sheets
  - ❑ @Home Videos

Students will...	Teacher will...
Complete pre-unit writing (slides 7-12) on student sheets. Then browse reference book (slides 13-22) to learn more about food science	Assign the pre-unit writing (@Home Lesson 1 student sheets) and review student responses using the Assessment Guide. Communicate expectations about how to access texts.

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 writing

Synchronous: on slides 4 and 5 (orange question slides) give students an opportunity to stop and jot their ideas before sharing out with the group.

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

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.

Completing Written Work	Submitting 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)	• 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 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 be

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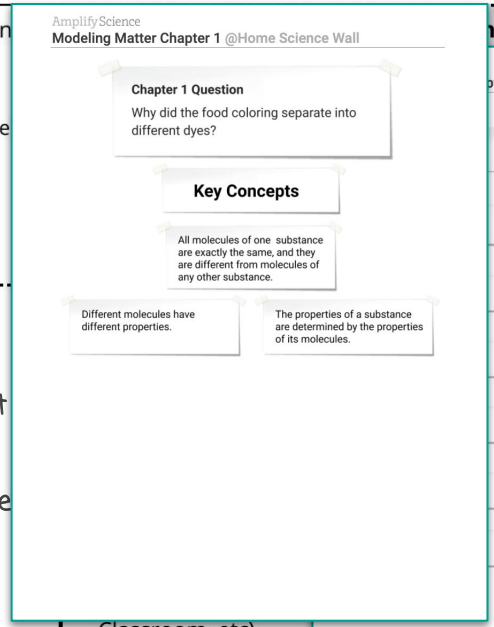
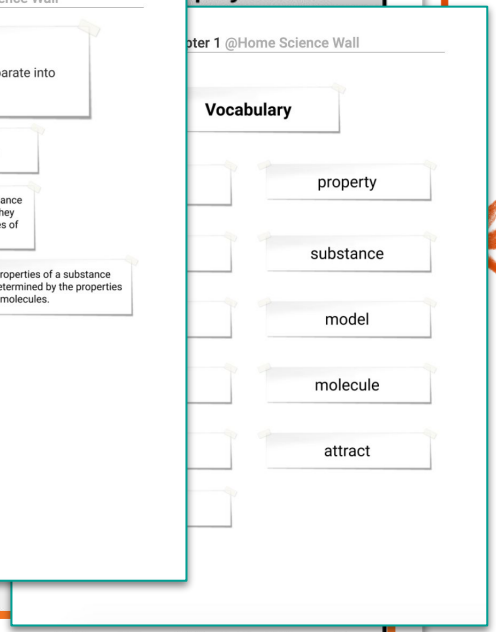




Classroom, etc)

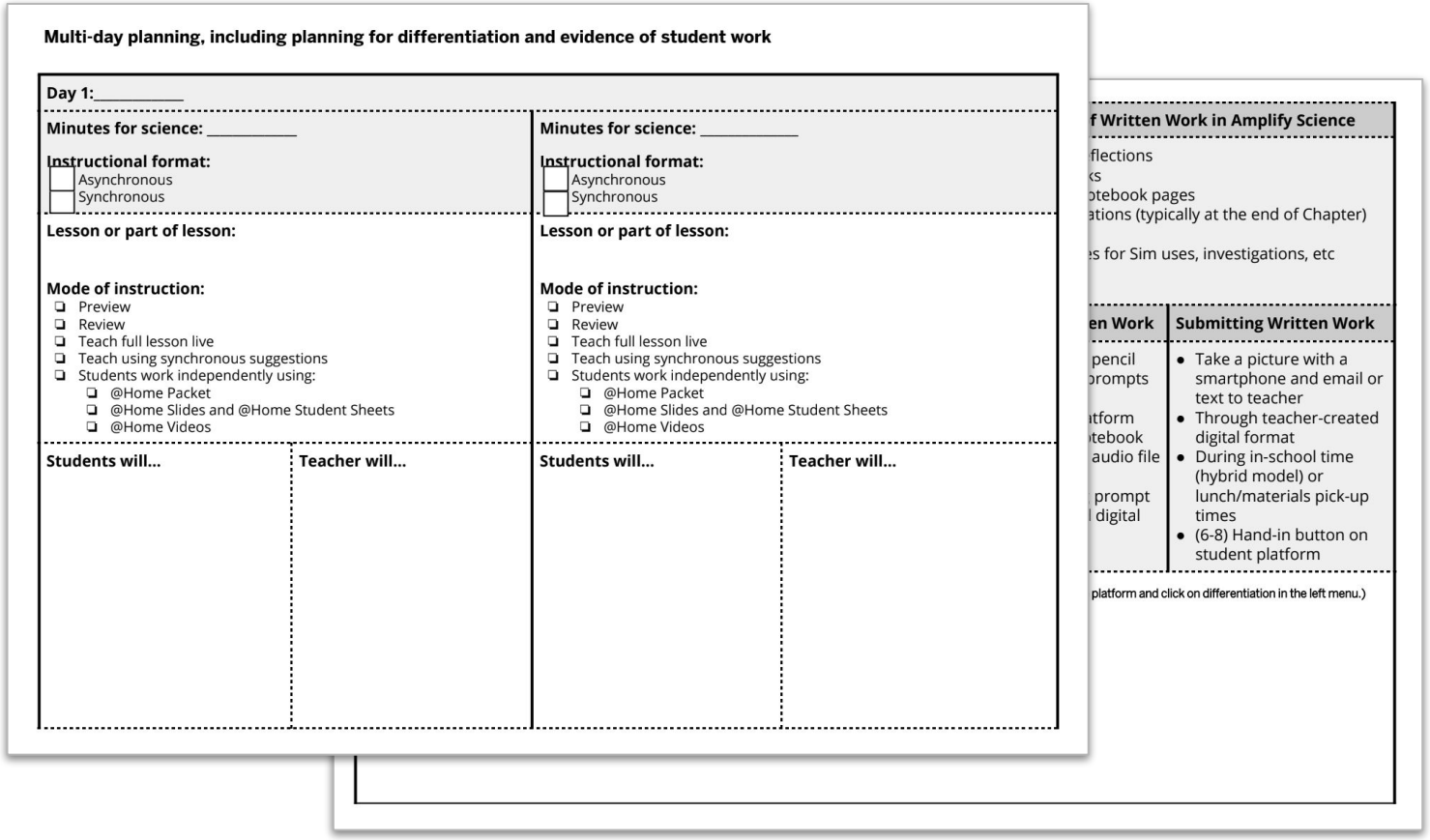
How will you differentiate this lesson for diverse learners? (Navigate to the lesson level on the standard Amplify Science platform and click on differentiation in the left menu.)

Supports:

- Allow multiple means of expression on the pre-unit assessment (verbal, diagram, writing)
- Leverage primary languages during discussion/writing
- Invite students to share their experiences with cooking and food during initial discussion
- Provide extra time or chunk out the pre-unit 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.

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	**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	**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...	Students will...	Teacher will...

f Written Work in Amplify Science

flections
ks
otebook pages
ations (typically at the end of Chapter)

s for Sim uses, investigations, etc

en Work	Submitting Written Work
pencil prompts tform tebook 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.)

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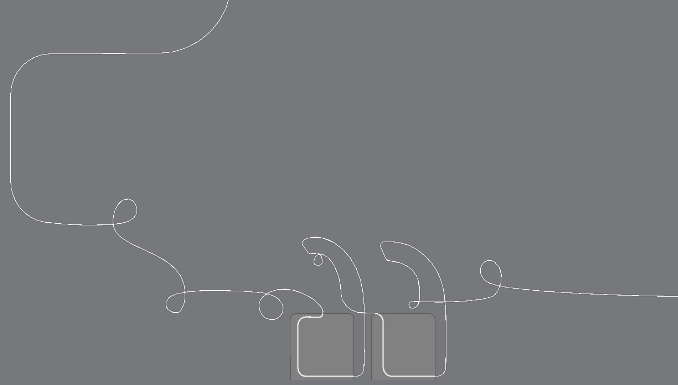
Preparing to Teach Tips & Tricks

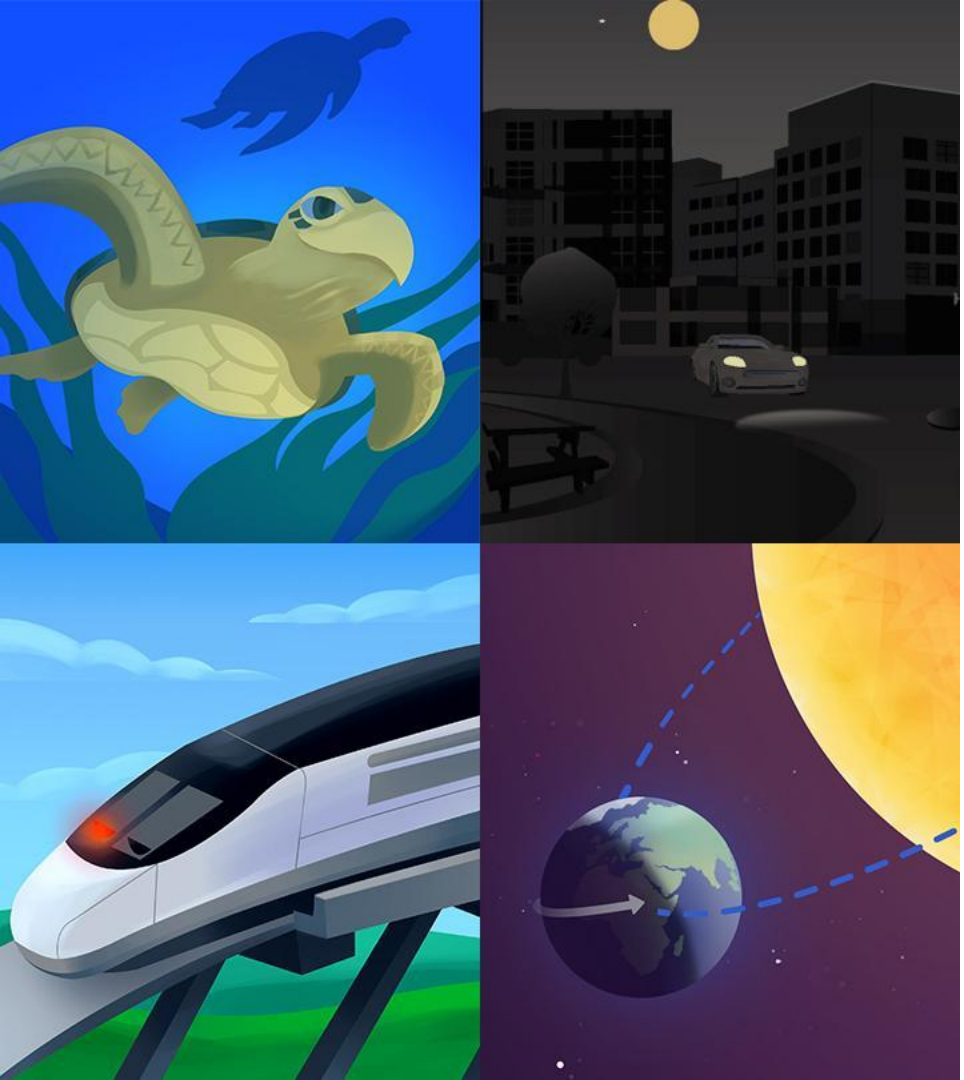
Use the standard Amplify Science TG alongside the @Home Resources to meet the needs of diverse learners.

Make sure you understand the big picture of the unit before diving into the lessons.

Be creative when it comes to student work.



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?

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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.

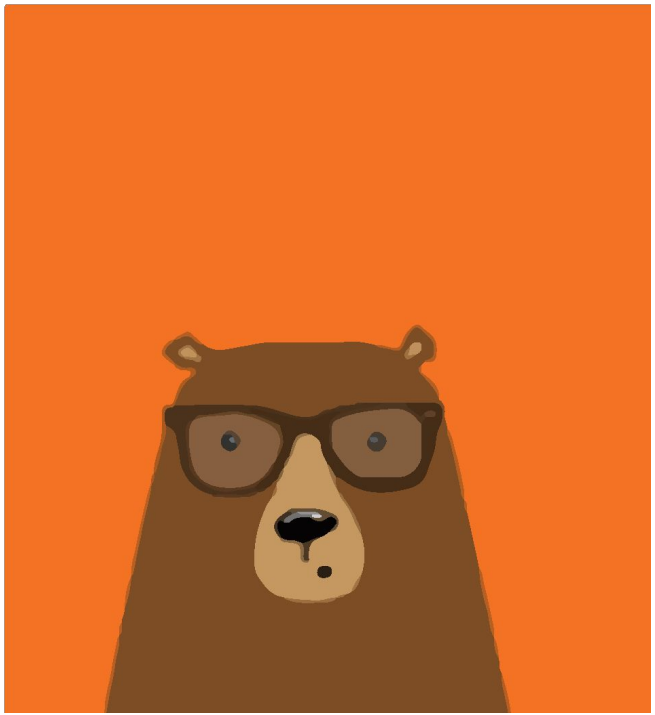
Click here for Remote Learning Resources for Amplify Science

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.

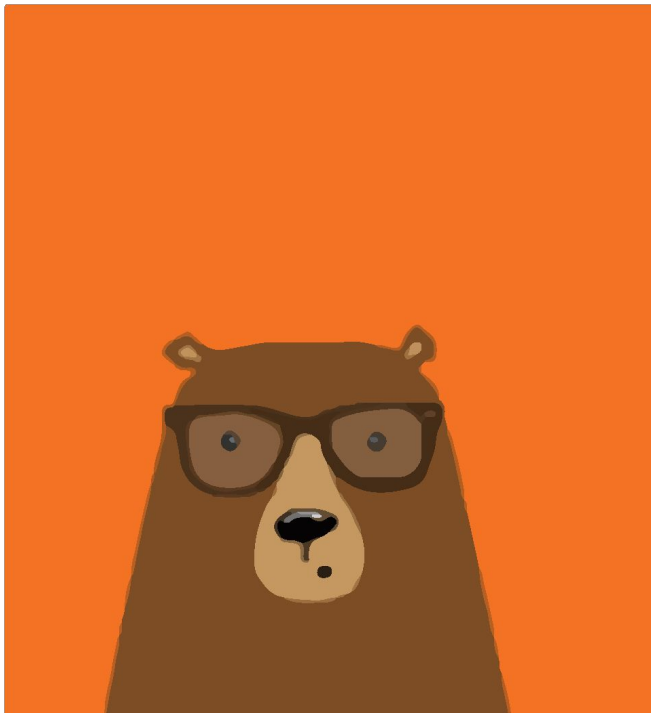
http://amplify.com/science/california/review

Amplify Help

Find lots of advice and answers from the Amplify team.

my.amplify.com/help

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/

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

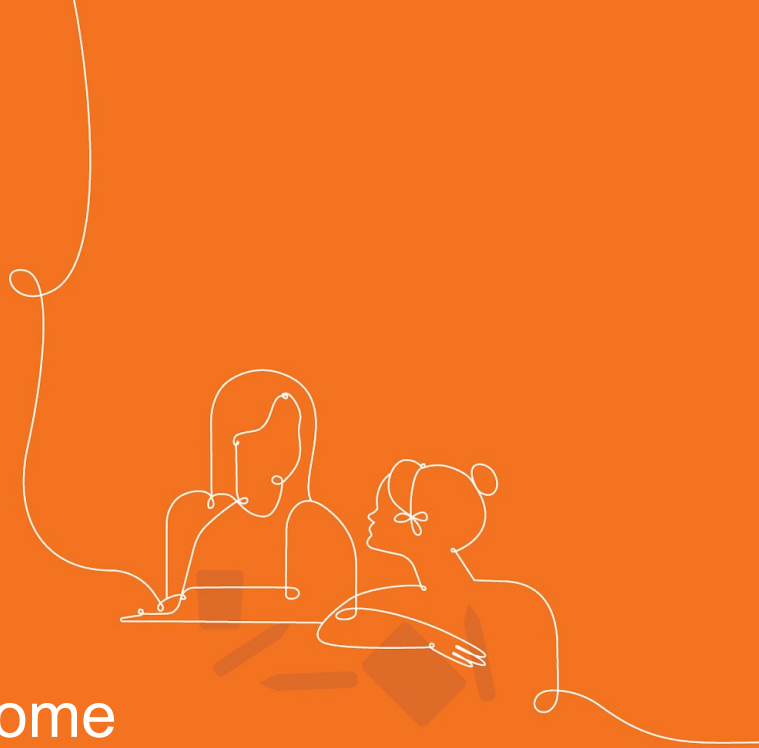
800-823-1969

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

Amplify.

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

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

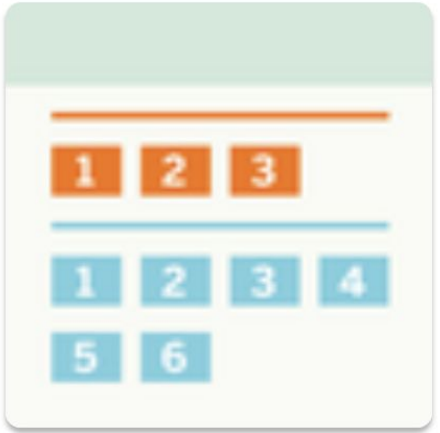
Elementary Student Apps Shared Logins

English

- Username: ampsci123
- Password: ampsci123

Spanish

- Username: ampsci123sp
- Password: ampsci123sp



Elementary Student Apps