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!

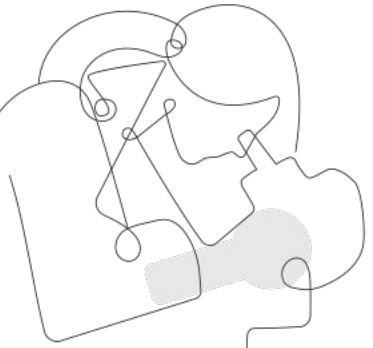
https://amplify.com/lausd-science/

Do Now: *Use the link in the chat to share how getting started with Amplify Science is going.*

Amplify Science

Unit Internalization & Guided Planning

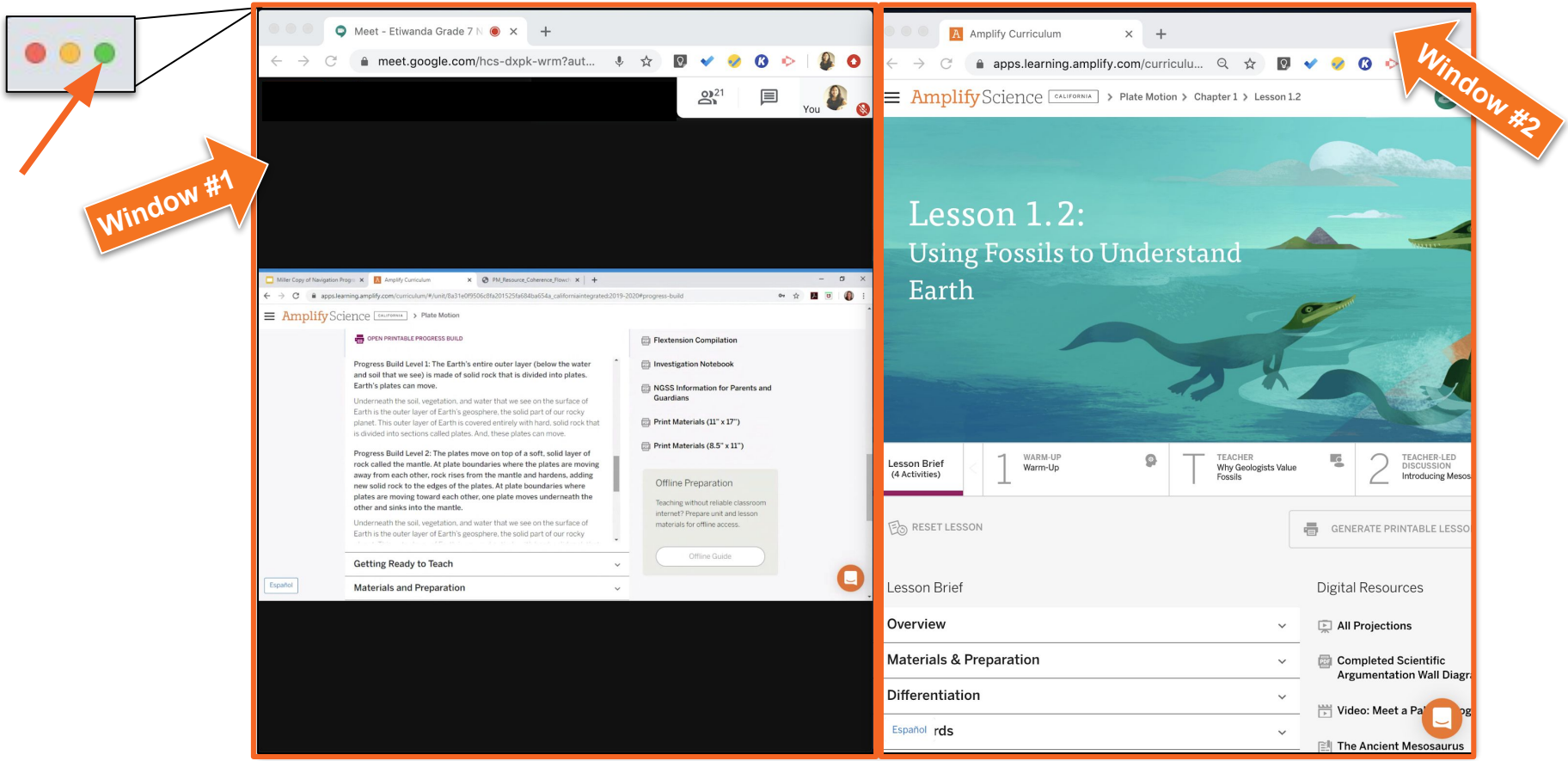
Deep-dive and strengthening workshop
Grade 7, Rock Transformations



LAUSD
2/6/2021
Presented by Your Name

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

Use two windows for today's webinar



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

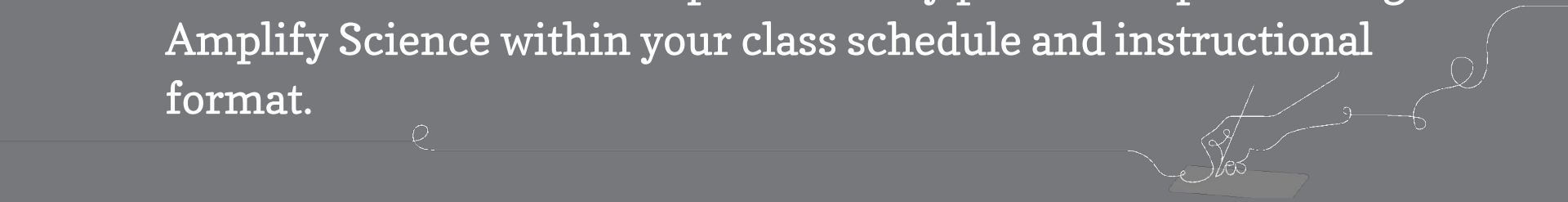
- Make sure you have a note-catcher present

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

Workshop goals

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

- Internalize your upcoming unit.
- Plan for collecting **evidence of student learning** in order to make instructional decisions to **support diverse learner needs**.
- Gather resources to develop a multi-day plan for implementing Amplify Science within your class schedule and instructional format.



Plan for the day

- Framing the day
  - Amplify Science Refresher
  - Instructional Materials
- Unit Internalization
- Planning to teach
  - Collecting evidence of student learning to meet diverse learner needs
- Reflection and closing

Plan for the day

- **Framing the day**
  - **Amplify Science Refresher**
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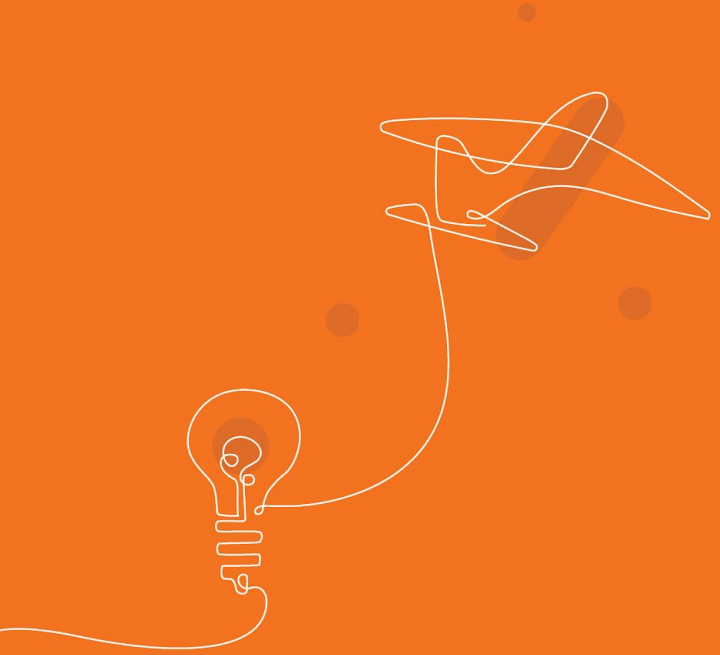

Amplify Science Refresher

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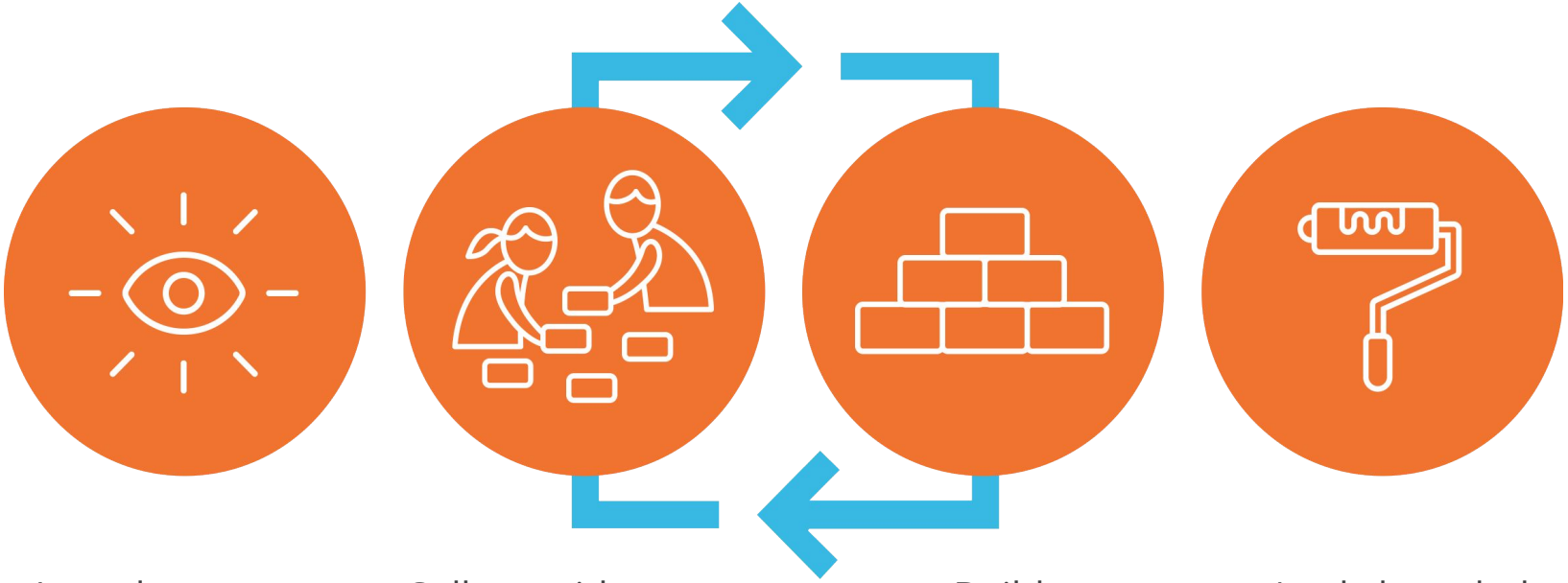
Amplify Science Instructional Approach



Introduce a phenomenon and a related problem

Collect evidence from multiple sources

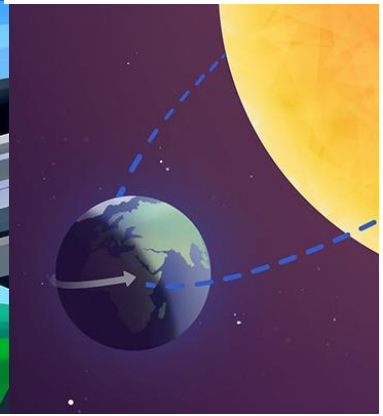
Build increasingly complex explanations

Apply knowledge to solve a different problem

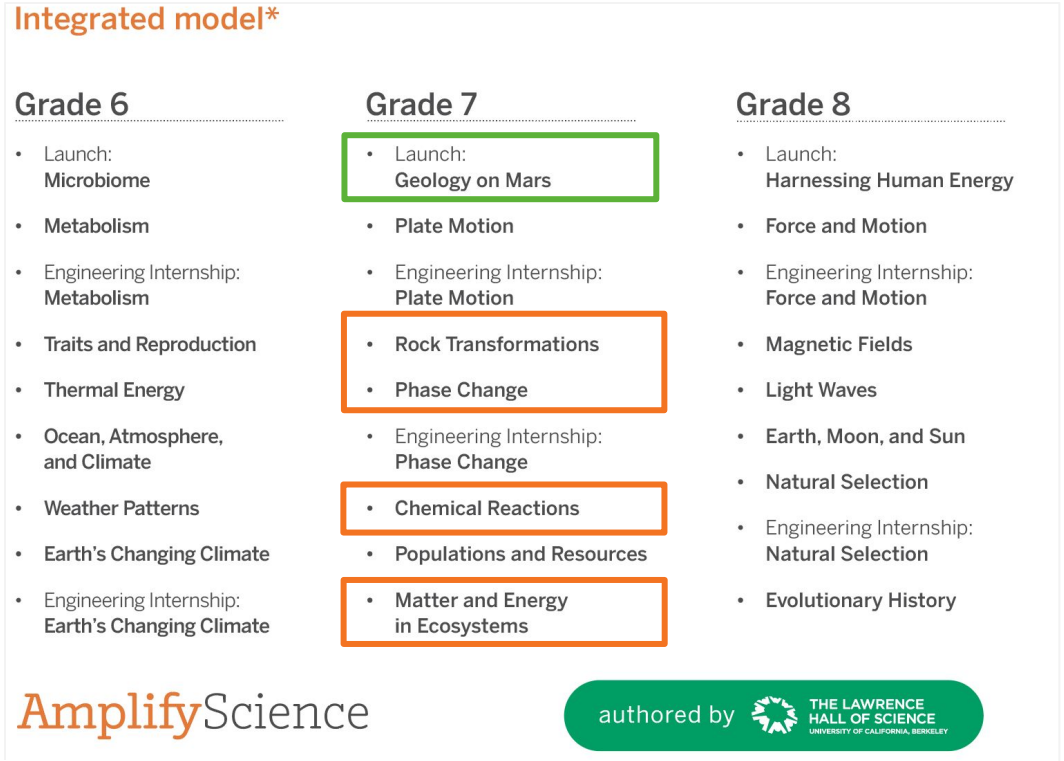
Multimodal, phenomenon-based learning

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.



Middle school course curriculum structure



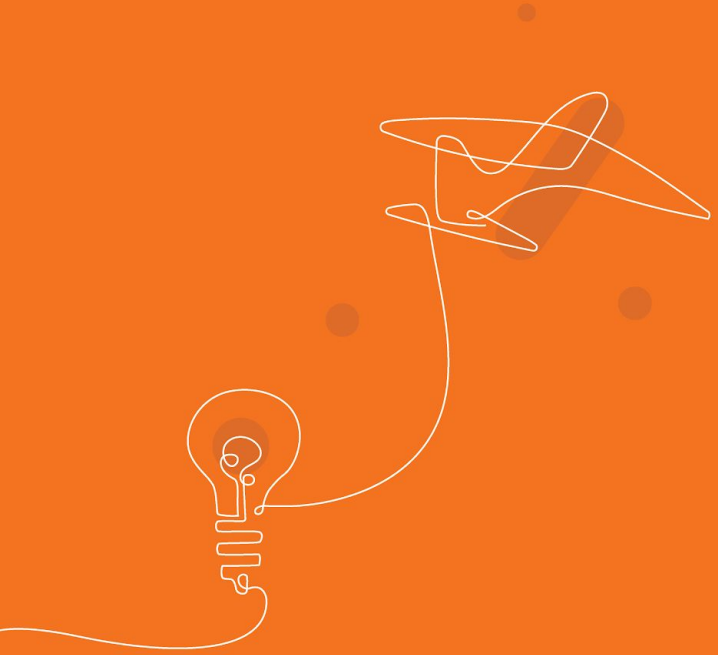
These are the prioritized units for 7th grade.

Launch units

- First unit
- 11 lessons

Core units

- Majority of units
- 19 lessons



Instructional Materials

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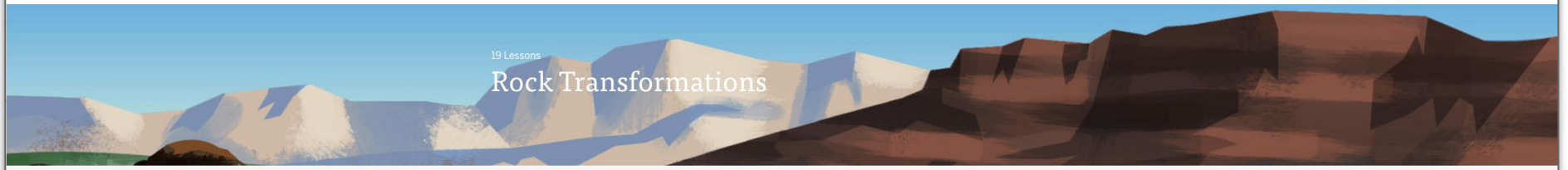
Standard Amplify Science Curriculum



JUMP DOWN TO UNIT GUIDE

GENERATE PRINTABLE TEACHER'S GUIDE

Standard Amplify Science Curriculum

The Rock Transformations unit has **19 lessons** across 4 chapters. Each lesson is written to be **45 minutes** long.

Chapter 1: Rock Formations

5 Lessons

Chapter 2: Sediment and Magma

6 Lessons

Chapter 3: Movement of Rock Formations

4 Lessons

Chapter 4: Rock Transformations on Venus

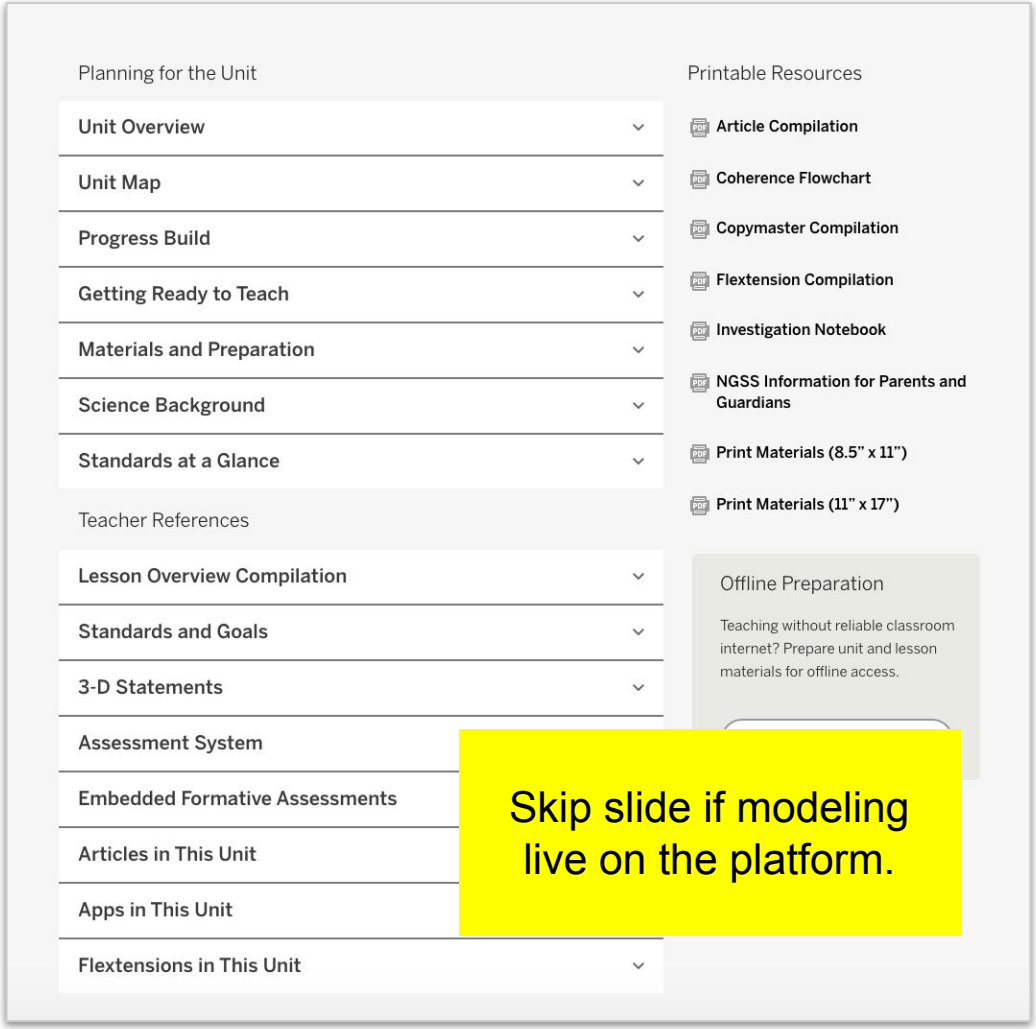
4 Lessons

Skip slide if modeling live on the platform.

Standard Amplify Science Curriculum

Below the chapters you will find the unit guide. This includes all of your key documents for planning for the unit.

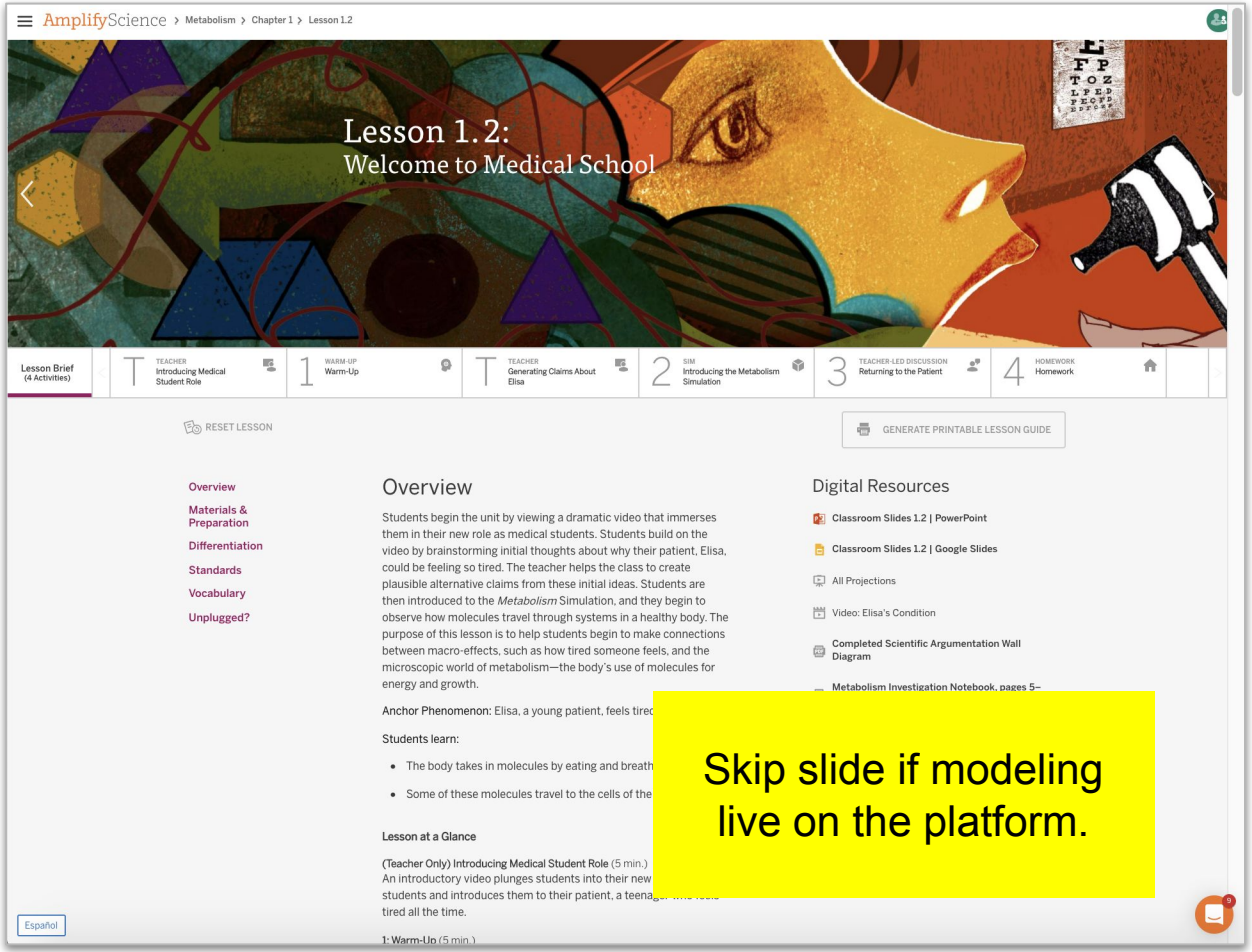
We will be using many of these in today's workshop.



Standard Amplify Science Curriculum

When you click into a lesson, you will find key lesson level information.

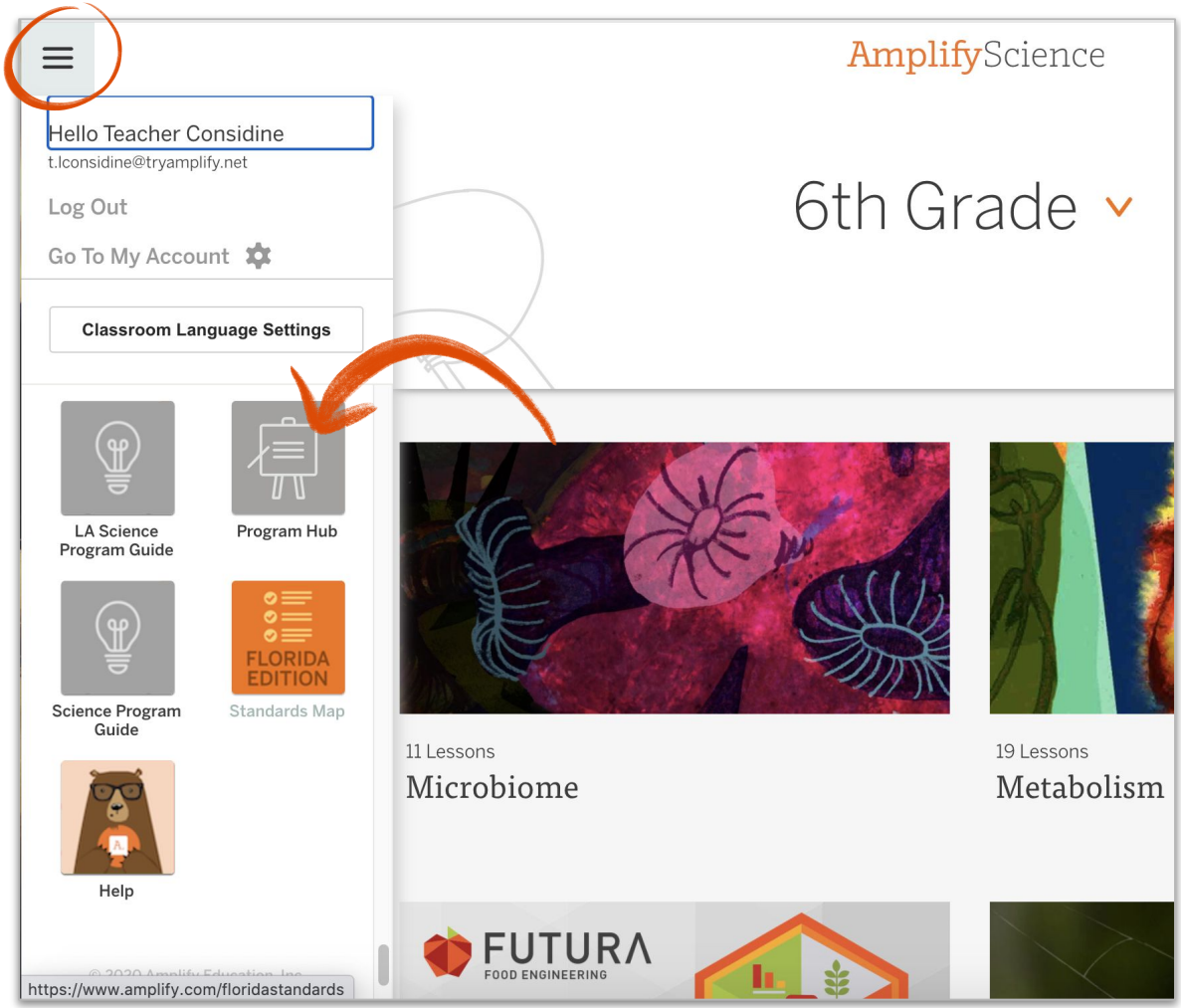
We will be navigating to lessons during today's workshop in order to better plan for collecting evidence of student learning in order to plan to meet the needs of diverse learners.



Amplify Science @Home Curriculum

Amplify Science @Home Curriculum

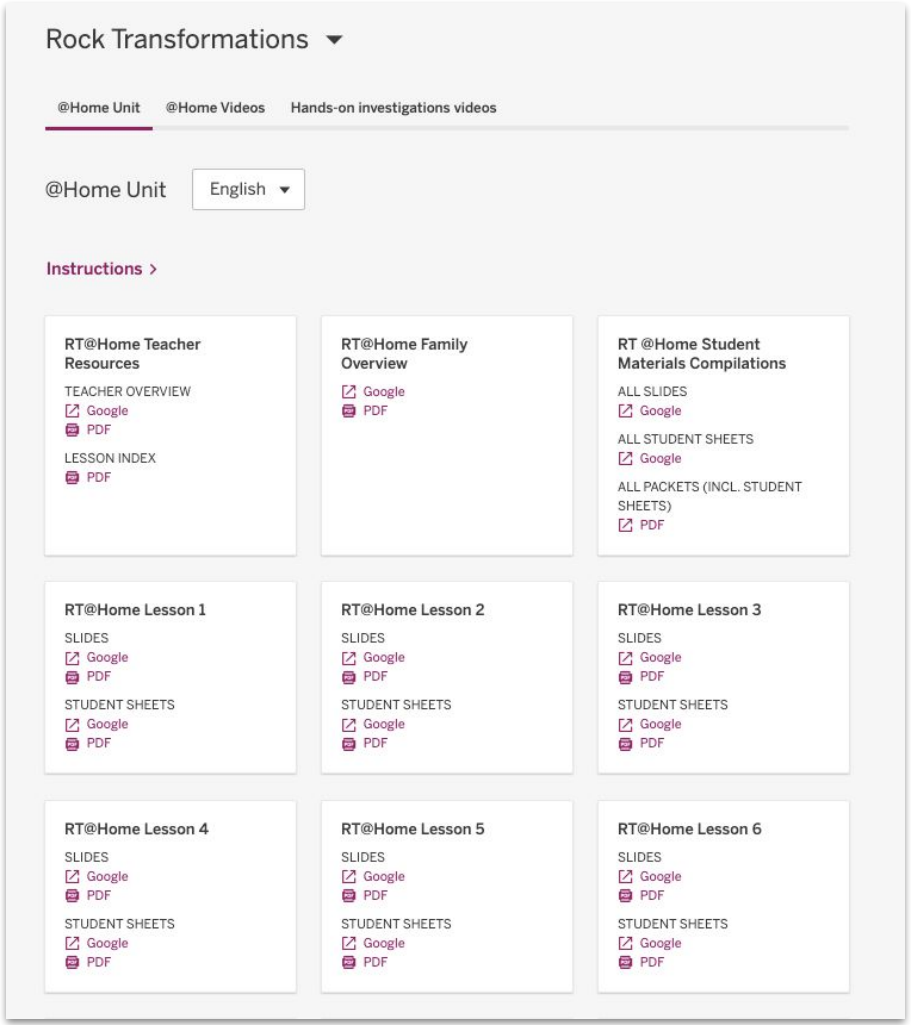
In addition to the standard Amplify Science curriculum, you also have access to Amplify Science @Home Curriculum on the Science Program Hub.



Amplify Science @Home Curriculum

You have access to the Rock Transformations @Home Unit.

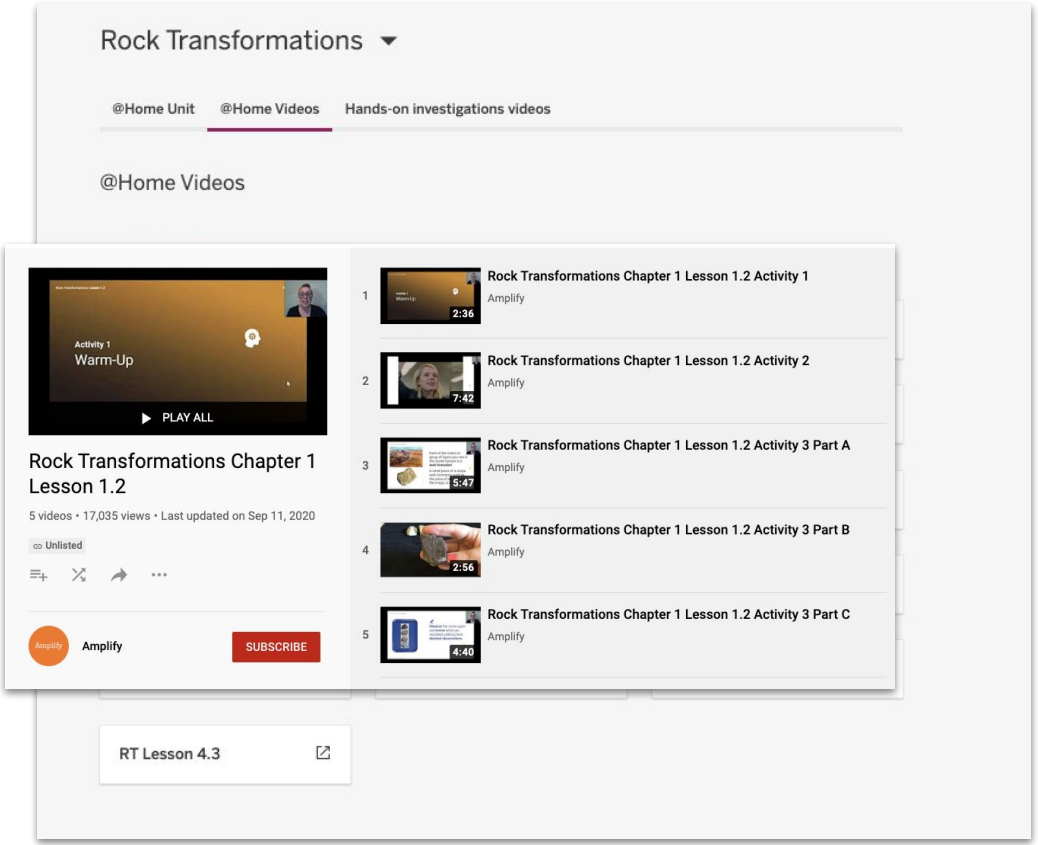
The @Home Unit has **14 lessons.** Each lesson is written to be **30 minutes** long.

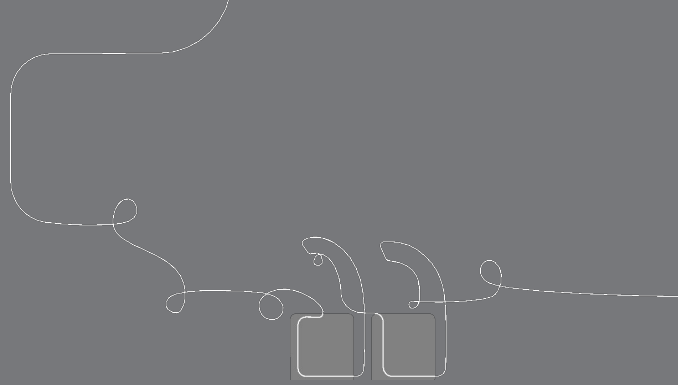


Amplify Science @Home Curriculum

You have access to the Rock Transformations @Home Videos.

There are 16 @Home Videos for the Geology on Mars unit in English. This covers all lessons expect for assessment days. The video playlists on YouTube teach the standard Amplify Science Lessons.





Questions?

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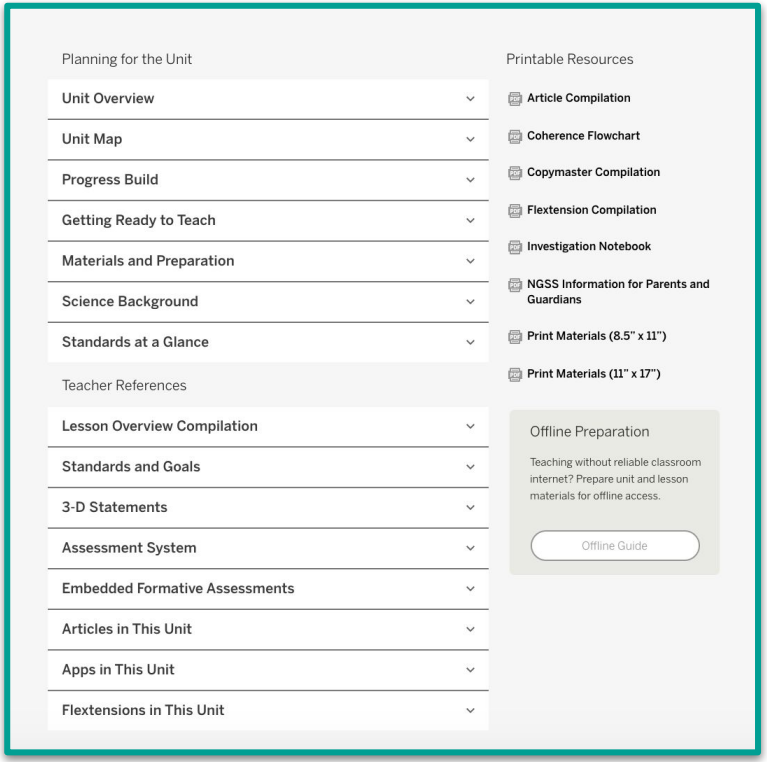
Unit Guide Resources



Page 1

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 NGSS Standards (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) standards 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
Articles 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 6-8)
Flextensions in This Unit	Summarizes information about the Hands-On Flextension lesson(s) in the unit
Printable resources	
Coherence Flowcharts	Visual representation of the storyline of the unit
Copymaster Compilation	Compilation of all copymasters for the teacher to print and copy throughout the unit
Flextension Compilation	Compilation of all copymasters for Hands-on Flextension lessons throughout the unit
Investigation Notebook	Digital version of the Investigation Notebook, for copying and projecting
Multi-Language Glossary	Unit vocabulary words in 10 languages
NGSS Information for Parents and Guardians	Information for parents about the NGSS and the shifts for teaching and learning
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 Chapter Questions and Key Concepts provided in the kit

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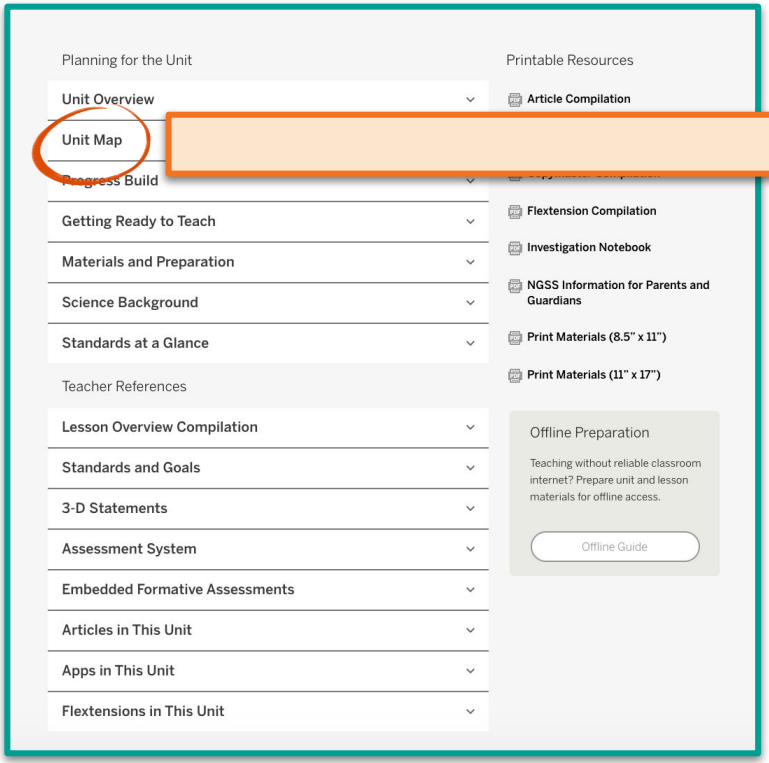
Unit Map

Pages 2-3



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Guided Unit Internalization

Part 1: Unit-level internalization

Unit title: Rock Transformations

What is the phenomenon students are investigating in your unit?

A rock sample found in the Great Plains and a rock sample found in the Rocky Mountains look different but are composed of a surprisingly similar mixture of minerals.

Unit Question:

Student role:

Student geologists

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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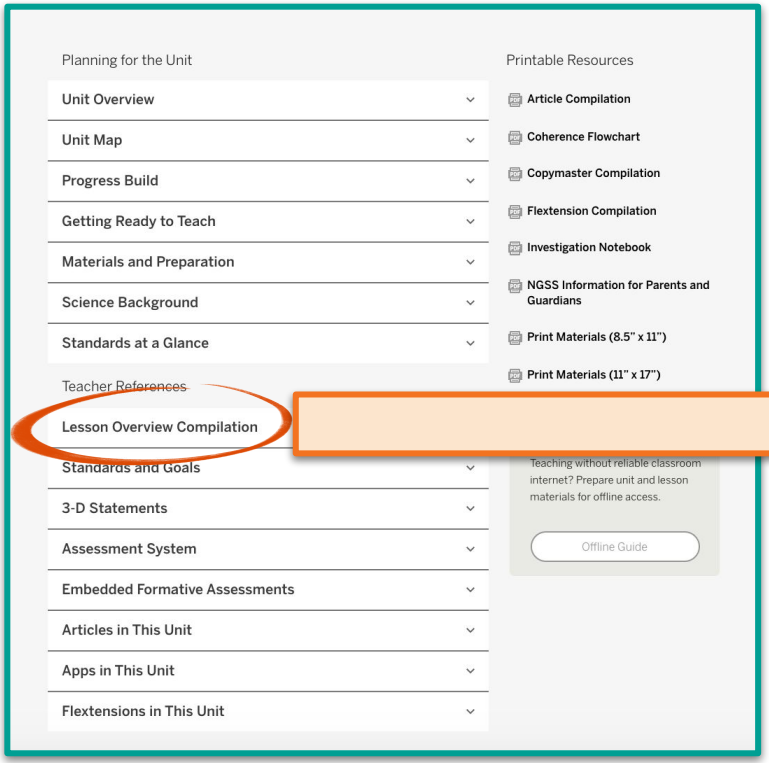
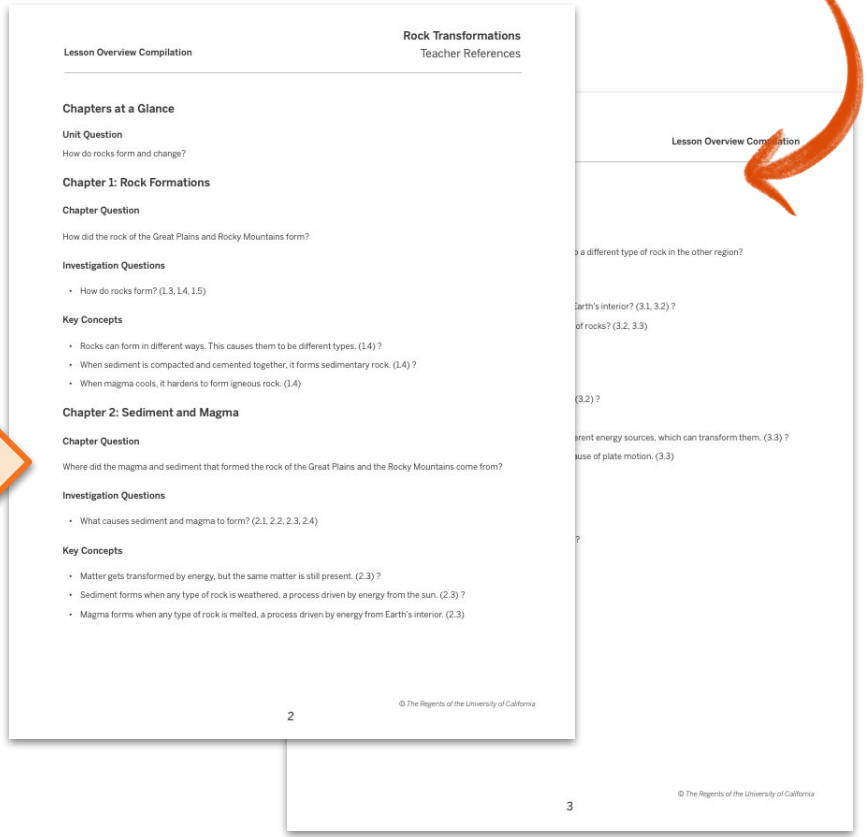
Lesson Overview Compilation

Pages 4-5





Lesson Overview Compilation — Rock Transformations — Teacher References

Chapters at a Glance

Unit Question

How do rocks form and change?

Chapter 1: Rock Formations

Chapter Question

How did the rock of the Great Plains and Rocky Mountains form?

Investigation Questions

- How do rocks form? (1.3, 1.4, 1.5)

Key Concepts

- Rocks can form in different ways. This causes them to be different types. (1.4) ?
- When sediment is compacted and cemented together, it forms sedimentary rock. (1.4) ?
- When magma cools, it hardens to form igneous rock. (1.4)

Chapter 2: Sediment and Magma

Chapter Question

Where did the magma and sediment that formed the rock of the Great Plains and the Rocky Mountains come from?

Investigation Questions

- What causes sediment and magma to form? (2.1, 2.2, 2.3, 2.4)

Key Concepts

- Matter gets transformed by energy, but the same matter is still present. (2.3) ?
- Sediment forms when any type of rock is weathered, a process driven by energy from the sun. (2.3) ?
- Magma forms when any type of rock is melted, a process driven by energy from Earth's interior. (2.3)

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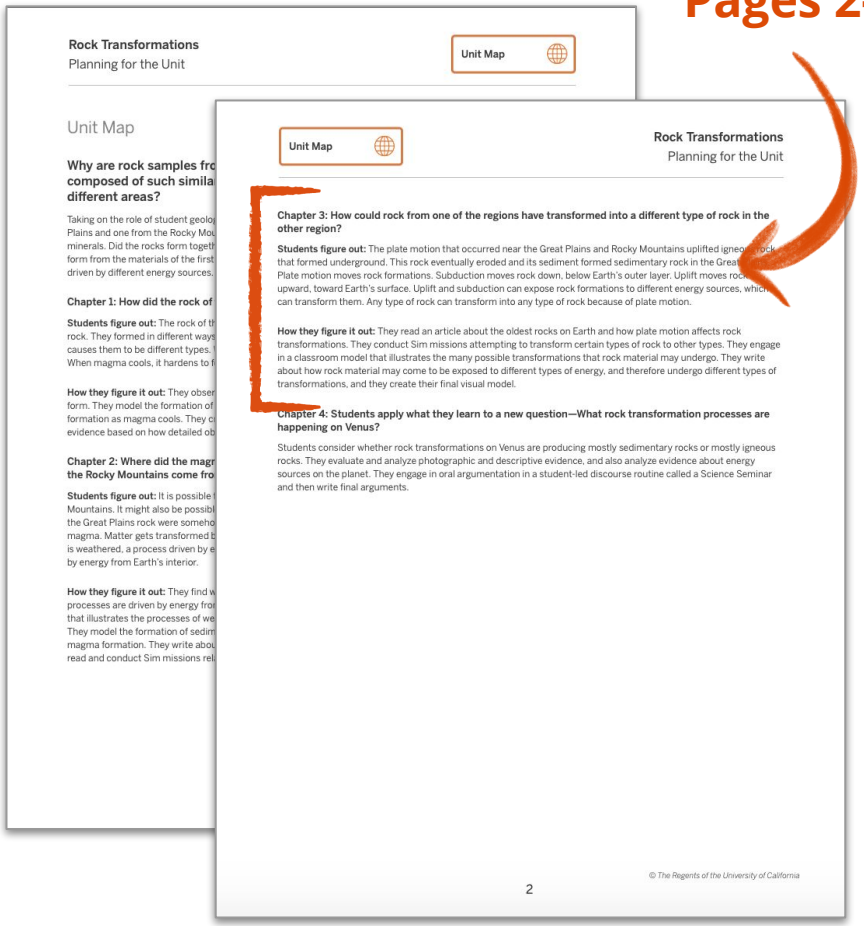

Rock Transformations
Planning for the Unit

Unit Map

Unit Map

Rock Transformations
Planning for the Unit

Chapter 3: How could rock from one of the regions have transformed into a different type of rock in the other region?

Students figure out: The plate motion that occurred near the Great Plains and Rocky Mountains uplifted igneous rock that formed underground. This rock eventually eroded and its sediment formed sedimentary rock in the Great Plate motion moves rock formations. Subduction moves rock down, below Earth's outer layer. Uplift moves rock upward, toward Earth's surface. Uplift and subduction can expose rock formations to different energy sources, which can transform them. Any type of rock can transform into any type of rock because of plate motion.

How they figure it out: They read an article about the oldest rocks on Earth and how plate motion affects rock transformations. They conduct Sim missions attempting to transform certain types of rock to other types. They engage in a classroom model that illustrates the many possible transformations that rock material may undergo. They write about how rock material may come to be exposed to different types of energy, and therefore undergo different types of transformations, and they create their final visual model.

Chapter 4: Students apply what they learn to a new question—What rock transformation processes are happening on Venus?

Students consider whether rock transformations on Venus are producing mostly sedimentary rocks or mostly igneous rocks. They evaluate and analyze photographic and descriptive evidence, and also analyze evidence about energy sources on the planet. They engage in oral argumentation in a student-led discourse routine called a Science Seminar and then write final arguments.

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Unit Question:

How do rocks form and change?

Student role:

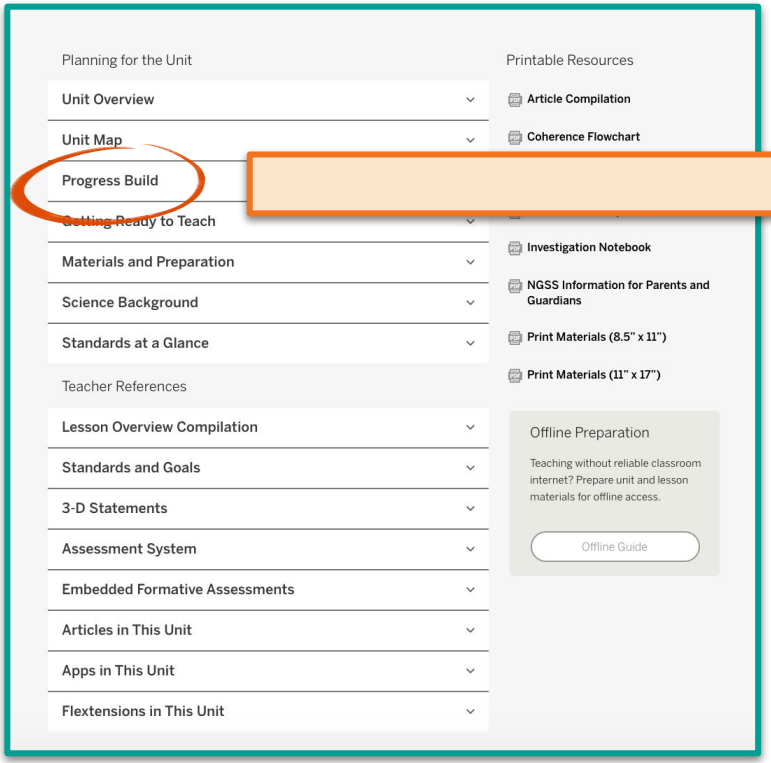
Student geologists

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

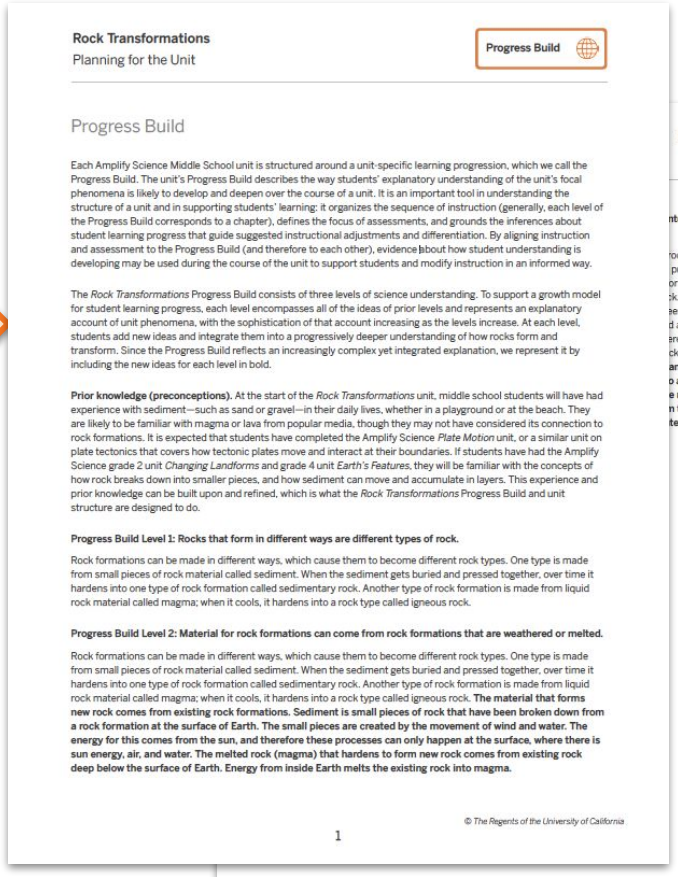
Due to plate motion, the two rock samples came to the surface together as igneous rock (which is why they have similar mineral composition). Some of this rock was exposed to energy sources at the surface, and it transformed and moved, forming sedimentary rock in the Great Plains. Some remained in the Rocky Mountains as igneous rock.

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

Progress Build



Pages 6-7



Rock Transformations
Planning for the Unit

Progress Build

Progress Build

Each Amplify Science Middle School unit is structured around a unit-specific learning progression, which we call the Progress Build. The unit's Progress Build describes the way students' explanatory understanding of the unit's focal phenomena is likely to develop and deepen over the course of a unit. It is an important tool in understanding the structure of a unit and in supporting students' learning; it organizes the sequence of instruction (generally, each level of the Progress Build corresponds to a chapter), defines the focus of assessments, and grounds the inferences about student learning progress that guide suggested instructional adjustments and differentiation. By aligning instruction and assessment to the Progress Build (and therefore to each other), evidence about how student understanding is developing may be used during the course of the unit to support students and modify instruction in an informed way.

The *Rock Transformations* Progress Build consists of three levels of science understanding. To support a growth model for student learning progress, each level encompasses all of the ideas of prior levels and represents an explanatory account of unit phenomena, with the sophistication of that account increasing as the levels increase. At each level, students add new ideas and integrate them into a progressively deeper understanding of how rocks form and transform. Since the Progress Build reflects an increasingly complex yet integrated explanation, we represent it by including the new ideas for each level in bold.

Prior knowledge (preconceptions). At the start of the *Rock Transformations* unit, middle school students will have had experience with sediment—such as sand or gravel—in their daily lives, whether in a playground or at the beach. They are likely to be familiar with magma or lava from popular media, though they may not have considered its connection to rock formations. It is expected that students have completed the Amplify Science *Plate Motion* unit, or a similar unit on plate tectonics that covers how tectonic plates move and interact at their boundaries. If students have had the Amplify Science grade 2 unit *Changing Landforms* and grade 4 unit *Earth's Features*, they will be familiar with the concepts of how rock breaks down into smaller pieces, and how sediment can move and accumulate in layers. This experience and prior knowledge can be built upon and refined, which is what the *Rock Transformations* Progress Build and unit structure are designed to do.

Progress Build Level 1: Rocks that form in different ways are different types of rock.

Rock formations can be made in different ways, which cause them to become different rock types. One type is made from small pieces of rock material called sediment. When the sediment gets buried and pressed together, over time it hardens into one type of rock formation called sedimentary rock. Another type of rock formation is made from liquid rock material called magma; when it cools, it hardens into a rock type called igneous rock.

Progress Build Level 2: Material for rock formations can come from rock formations that are weathered or melted.

Rock formations can be made in different ways, which cause them to become different rock types. One type is made from small pieces of rock material called sediment. When the sediment gets buried and pressed together, over time it hardens into one type of rock formation called sedimentary rock. Another type of rock formation is made from liquid rock material called magma; when it cools, it hardens into a rock type called igneous rock. **The material that forms new rock comes from existing rock formations. Sediment is small pieces of rock that have been broken down from a rock formation at the surface of Earth. The small pieces are created by the movement of wind and water. The energy for this comes from the sun, and therefore these processes can only happen at the surface, where there is sun energy, air, and water. The melted rock (magma) that hardens to form new rock comes from existing rock deep below the surface of Earth. Energy from inside Earth melts the existing rock into magma.**

Rock Transformations
Planning for the Unit

Guided Unit Internalization

Part 1: Unit-level internalization

Unit title: Rock Transformations

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A rock sample found in the Great Plains and a rock sample found in the Rocky Mountains look different but are composed of a surprisingly similar mixture of minerals.

Unit Question:

How do rocks form and change?

Student role:

Student geologists

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

The two rock samples originated together (which is why they have similar mineral composition), but today they are different types of rock that were moved to different places and transformed through different geological processes.

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

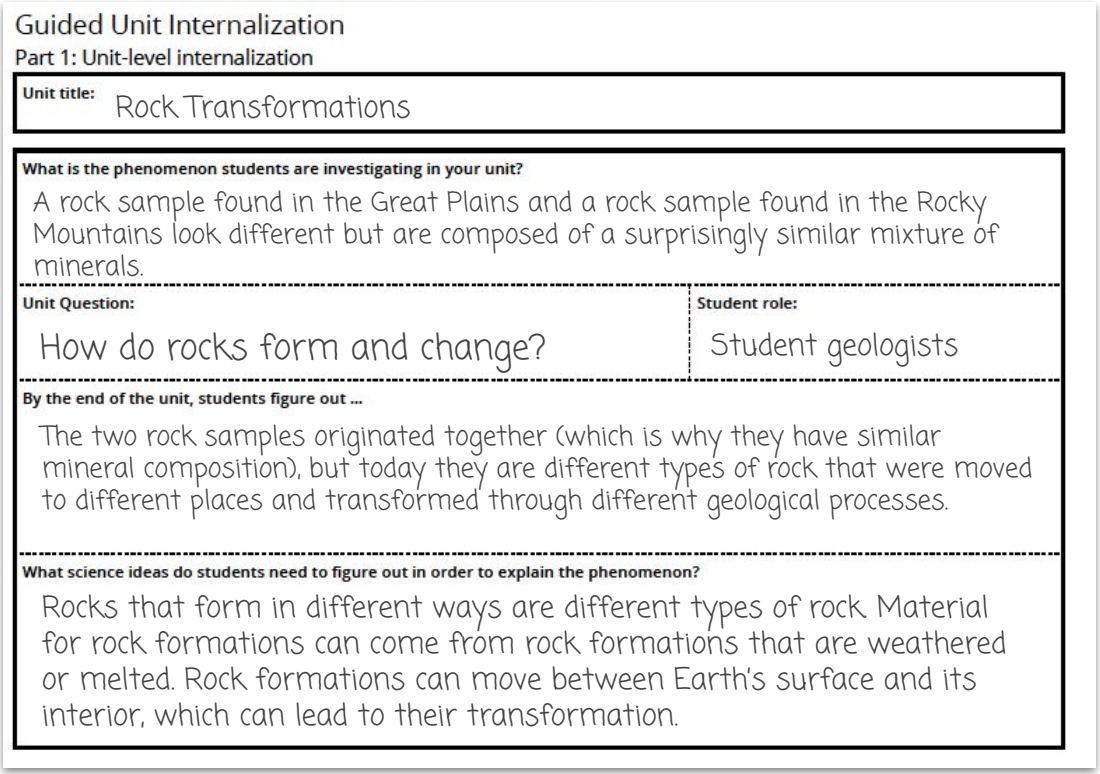
Rocks that form in different ways are different types of rock. Material for rock formations can come from rock formations that are weathered or melted. Rock formations can move between Earth's surface and its interior, which can lead to their transformation.

Breakout groups

In breakouts, discuss the unit content we've worked on.

What's interesting, compelling, or exciting?

What are you still wondering?



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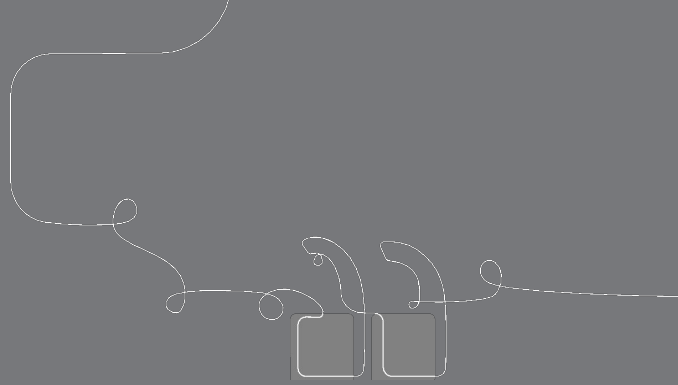
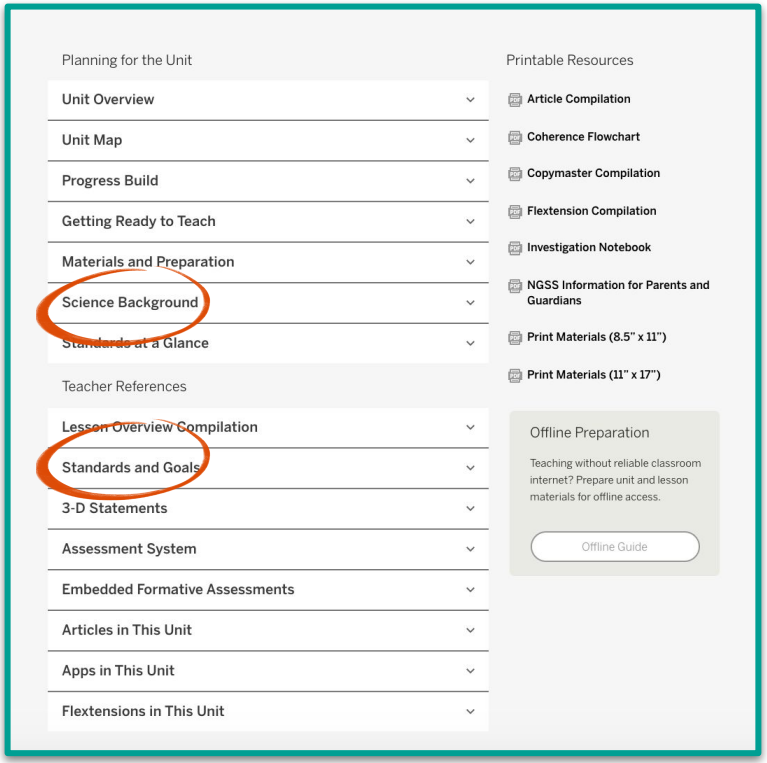


Questions?

Additional science concept resources for teachers

Science Background:
Adult-level summary of unit science concepts

Standards and Goals:
Information about NGSS standards and how they're achieved in the unit



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- Framing the day
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  - **Collecting evidence of student learning to meet diverse learner needs**
- Reflection and closing

Unit Map

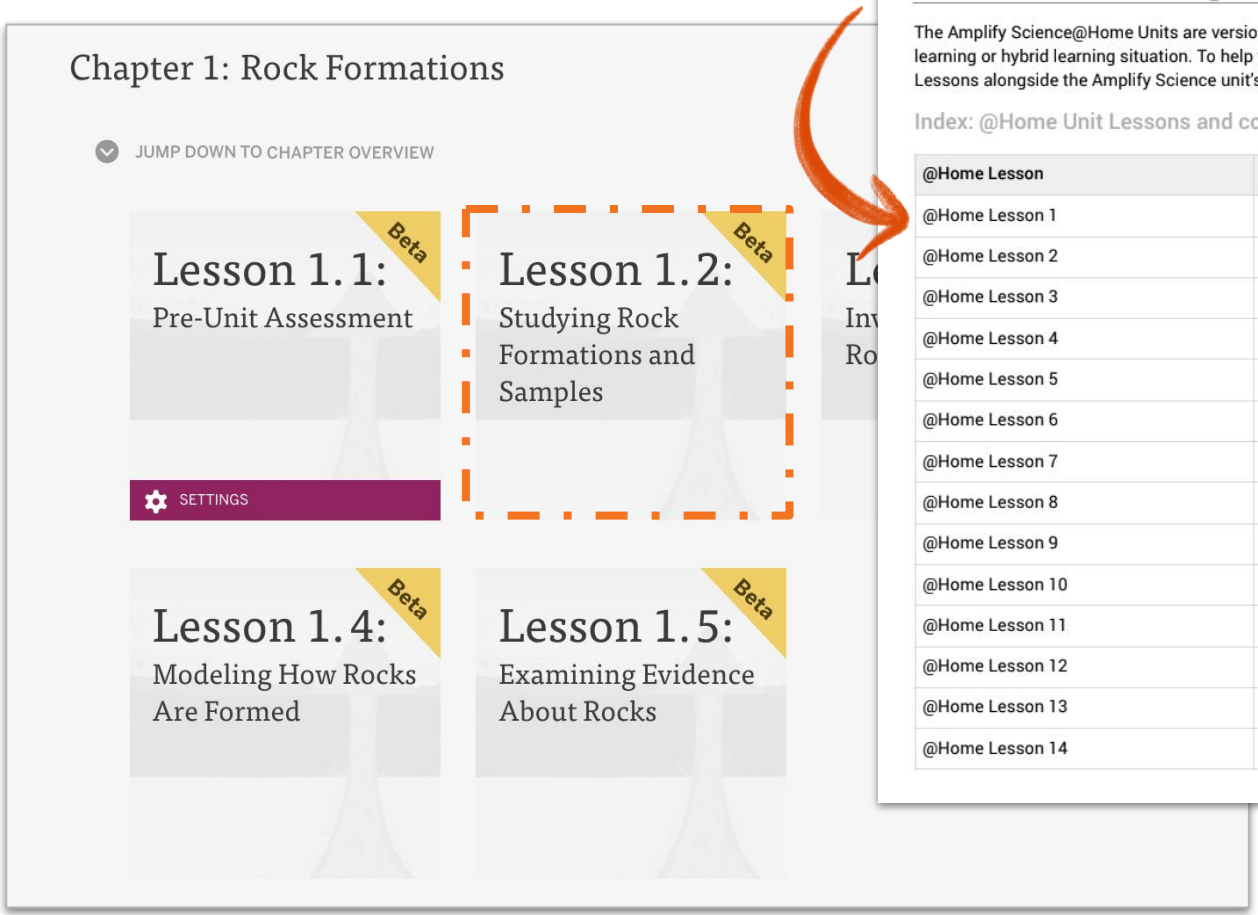
Why are rock samples from the Great Plains and from the Rocky mountains composed of such similar minerals, when they look so different and come from different areas?

Taking on the role of student geologists, students investigate a geologic puzzle: two rock samples, one from the Great Plains and one from the Rocky Mountains, look very different but are composed of a surprisingly similar mix of minerals. Did the rocks form together and somehow get split apart? Or did one rock form first, and then the other rock form from the materials of the first rock? To solve the mystery, students learn about how rock forms and transforms, driven by different energy sources.

Chapter 1: How did the rock of the Great Plains and the rock of the Rocky Mountains form?

Students figure out: The rock of the Great Plains is sedimentary rock and the rock of the Rocky Mountains is igneous rock. They formed in different ways so they must not have formed together. Rocks can form in different ways. This causes them to be different types. When sediment is compacted and cemented together, it forms sedimentary rock. When magma cools, it hardens to form igneous rock.

How they figure it out: They observe rock samples and explore the Simulation, finding different ways to make rock form. They model the formation of sedimentary rocks using hard candy, and view a video showing igneous rock formation as magma cools. They create a visual model showing two different ways rocks can form. They evaluate evidence based on how detailed observations are.



Amplify Science

Rock Transformations @Home Lesson Index

The Amplify Science@Home Units are versions of Amplify Science units adapted for use in a remote learning or hybrid learning situation. To help you plan instruction, below we have listed the @Home Lessons alongside the Amplify Science unit's Lesson(s) from which they come.

Index: @Home Unit Lessons and corresponding *Rock Transformations* Lessons

@Home Lesson	Adapted from Amplify Science *Rock Transformations*
@Home Lesson 1	Lesson 1.2
@Home Lesson 2	Lessons 1.3
@Home Lesson 3	Lessons 1.4
@Home Lesson 4	Lesson 1.5
@Home Lesson 5	Lesson 2.1
@Home Lesson 6	Lesson 2.2
@Home Lesson 7	Lesson 2.3
@Home Lesson 8	Lesson 2.4
@Home Lesson 9	Lesson 3.1 and 3.2
@Home Lesson 10	Lesson 3.2
@Home Lesson 11	Lessons 3.2 and 3.4
@Home Lesson 12	Lessons 4.1
@Home Lesson 13	Lesson 4.2 and 4.3
@Home Lesson 14	Lesson 4.4

Key Activities

- **Introducing the Geologic Puzzle:** Students are introduced to the unit problem and their role as student geologists.
- **Observe:** Students make detailed observations of four different rock samples (basalt, conglomerate, sandstone, and granite) shown in a video.

Ideas for synchronous or in-person instruction

Before meeting, have students watch the introductory video. While meeting, have students share their initial ideas. If you have access to kit materials, you could have students make observations of the rocks while you display them, allowing students to ask you questions about things they cannot observe directly such as hardness and texture.

Rock Transformations

@Home Lesson 1

AmplifyScience

Today, we will begin a new unit called *Rock Transformations*. Let's begin by thinking about this question:

How do you think rocks form?

In this unit, we will investigate **how rocks form**.

Then, we'll look at how they **transform**, or change**.**

In the *Rock Transformations* unit we will be thinking about this question:

Unit Question

How do rocks form and change?

In this unit, you will take on the role of **student geologists** working to help investigate a geological question.

Now you'll watch a video that will introduce you to the question.

Note: all videos in this @Home Unit can be viewed on a smartphone, or any other connected device.

Using the print version? Watch the video here: tinyurl.com/AMPRT-01

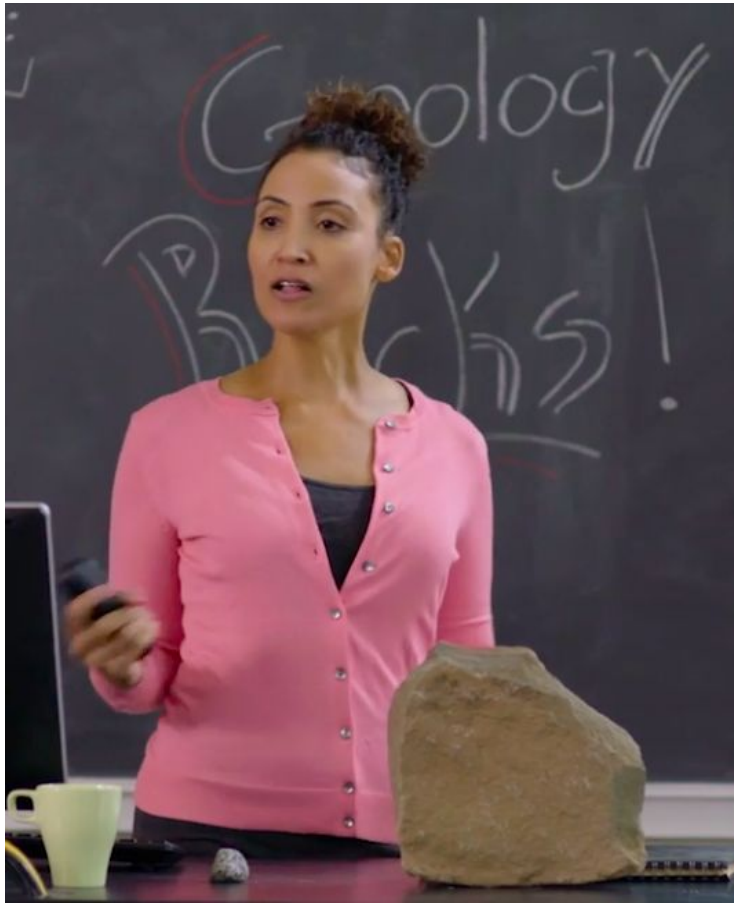
The mystery you will be investigating in this unit is based on the geology of **two real-life regions**. However, some aspects of this unit are **fictional.**

Bascom University and the characters in this video are not real. They are included in this unit to give you an opportunity to investigate **how the rocks formed** in these real-life regions in ways that are very similar to the ways that scientists would.

Nadir brought his rock sample from the **Rocky Mountains** and Corey brought hers from the **Great Plains.**

Let’s look at a map showing those locations.

Locating the Rocky Mountains and Great Plains



Professor Lewis will provide evidence to help you investigate how rock samples taken from the Rocky Mountains and the Great Plains can have surprisingly **similar mineral compositions.**

First, let’s think about what we know about the **Rockies** and the **Plains.**

Start by observing the images on the next slide of the **Rocky Mountains** and the **Great Plains.** Look for **similarities** and **differences.**

The Rocky Mountains

The Great Plains

What do you observe about the **Rocky Mountains** and the **Great Plains**?

What do you think could have caused the rock formations in the Rocky Mountains and Great Plains to be so **different** yet have **similar amounts** of **certain minerals**?

This question will help guide us as we think about the problem of why the rocks in the Great Plains and Rocky Mountains have similar mineral compositions.

Chapter 1 Question

How did the rock of the Great Plains and Rocky Mountains form?

Great Plains and Rocky Mountains Claims

Claim 1: They formed as one rock formation, and then something separated them.

Claim 2: One rock formation formed before the other. Then, the minerals from the older rock became part of the younger rock.

Read these **two claims** the students made about why the rocks have similar mineral compositions.

To evaluate these claims, we'll first try to figure out how the rock formed.

Thinking about Claim 1:

If the rock in the Great Plains and Rocky Mountains **formed as one rock formation**, this means they started off as one region of rock that formed together at the same time as a single rock type. **Over time**, **something** may have **separated this region**.

Thinking about Claim 2:

If **one rock formed before the other**, and the **minerals** from the **older rock became part of the younger rock**, that means materials from the rock of one area **transformed** into the rock of the other area.

Adapted from: Amplify Science *Rock Transformations* Lesson 1.2

Key Activities

- **Introducing the Geologic Puzzle:** Students are introduced to the unit problem and their role as student geologists.
- **Observe:** Students make detailed observations of four different rock samples (basalt, conglomerate, sandstone, and granite) shown in a video.

Ideas for synchronous or in-person instruction

Before meeting, have students watch the introductory video. While meeting, have students share their initial ideas. If you have access to kit materials, you could have students make observations of the rocks while you display them, allowing students to ask you questions about things they cannot observe directly such as hardness and texture.

Next, you'll **make observations** of four hand samples of rock.

Studying them will help you learn how to gather evidence from these kinds of samples.

These hand **samples** represent different types of **rock** that are commonly found on **Earth**. You have probably seen a lot of rocks in your life and are familiar with many types of rocks.

Like everything in your room—including you, your chair, and the air around us—rocks are **matter**.

All rocks are matter.

matter

anything that has mass and takes up space

All rocks are matter because they have **mass** and **take up space**.

More specifically, **rocks** are made of **minerals**, and minerals are a kind of matter.

Different rocks have different **amounts** and **types** of minerals. A rock's characteristics depend on what minerals it is made of and how that rock formed.

The rocks you will be observing are called hand samples.

a small part that is meant to show what the whole is like

A **hand sample** is a piece of a rock you can hold in your hand or analyze in a lab that can give you information about the rock formation it came from and the environment the rock formed in.

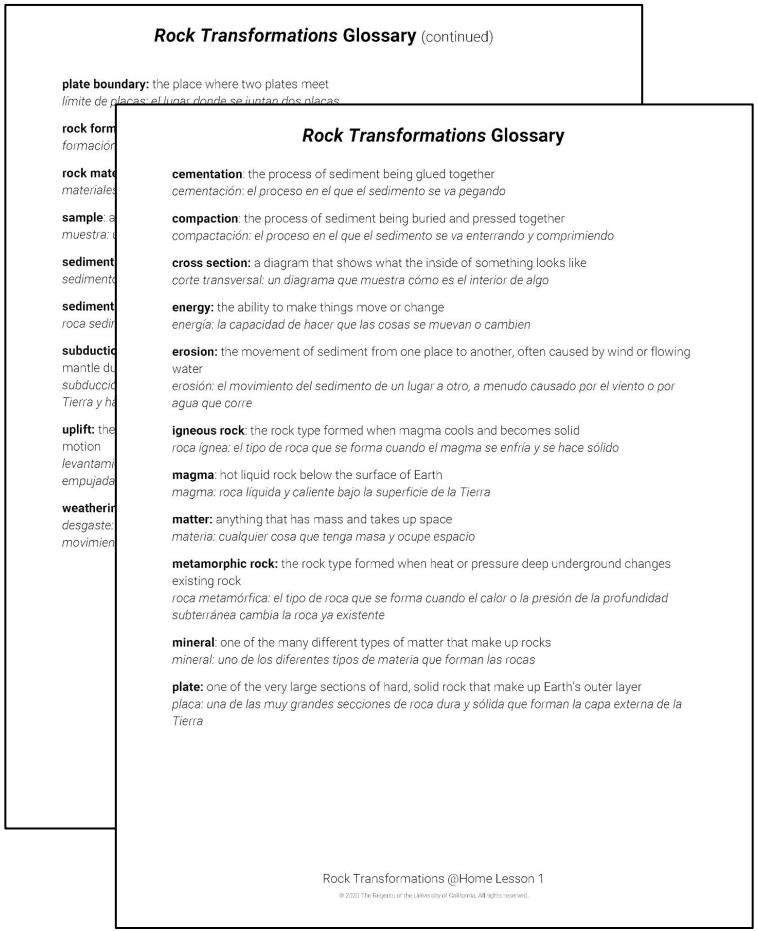
Geologists collect and study hand samples because they can be used to understand which **minerals** are in a **rock formation** and **how the rock formation formed**.

rock formation

a region of rock that formed together as a single rock type

Each of the colors or group of layers you see in the Grand Canyon is a **rock formation**. A **sample** is a small piece of a single rock formation, such as the piece of sandstone in the image.

In this lesson and throughout the unit you will need to **access different pages** such as the Glossary on the next slide. Check with your teacher about how you will access materials and complete and submit work in this @Home Unit.



***Rock Transformations* Glossary** (continued)

plate boundary: the place where two plates meet
límite de placas: el lugar donde se juntan dos placas

rock form
formación

rock mate
materiales

sample: a
muestra: u

sediment
sedimento

sediment
roca sedi

subductio
mantle du
subducció
Tierra y ha

uplift: the
motion
levantami
empujada

weatherin
desgaste
movimien

***Rock Transformations* Glossary**

cementation: the process of sediment being glued together
cementación: el proceso en el que el sedimento se va pegando

compaction: the process of sediment being buried and pressed together
compactación: el proceso en el que el sedimento se va enterrando y comprimiendo

cross section: a diagram that shows what the inside of something looks like
corte transversal: un diagrama que muestra cómo es el interior de algo

energy: the ability to make things move or change
energía: la capacidad de hacer que las cosas se muevan o cambien

erosion: the movement of sediment from one place to another, often caused by wind or flowing water
erosión: el movimiento del sedimento de un lugar a otro, a menudo causado por el viento o por agua que corre

igneous rock: the rock type formed when magma cools and becomes solid
roca ígnea: el tipo de roca que se forma cuando el magma se enfría y se hace sólido

magma: hot liquid rock below the surface of Earth
magma: roca líquida y caliente bajo la superficie de la Tierra

matter: anything that has mass and takes up space
materia: cualquier cosa que tenga masa y ocupe espacio

metamorphic rock: the rock type formed when heat or pressure deep underground changes existing rock
roca metamórfica: el tipo de roca que se forma cuando el calor o la presión de la profundidad subterránea cambia la roca ya existente

mineral: one of the many different types of matter that make up rocks
mineral: uno de los diferentes tipos de materia que forman las rocas

plate: one of the very large sections of hard, solid rock that make up Earth's outer layer
placa: una de las muy grandes secciones de roca dura y sólida que forman la capa externa de la Tierra

Rock Transformations @Home Lesson 1

Throughout the year, you can look up vocabulary words in the **glossary** to help you understand what they mean. You can find this in your student sheets or in the Amplify Library.

***Rock Transformations* Glossary** pages or Amplify Library

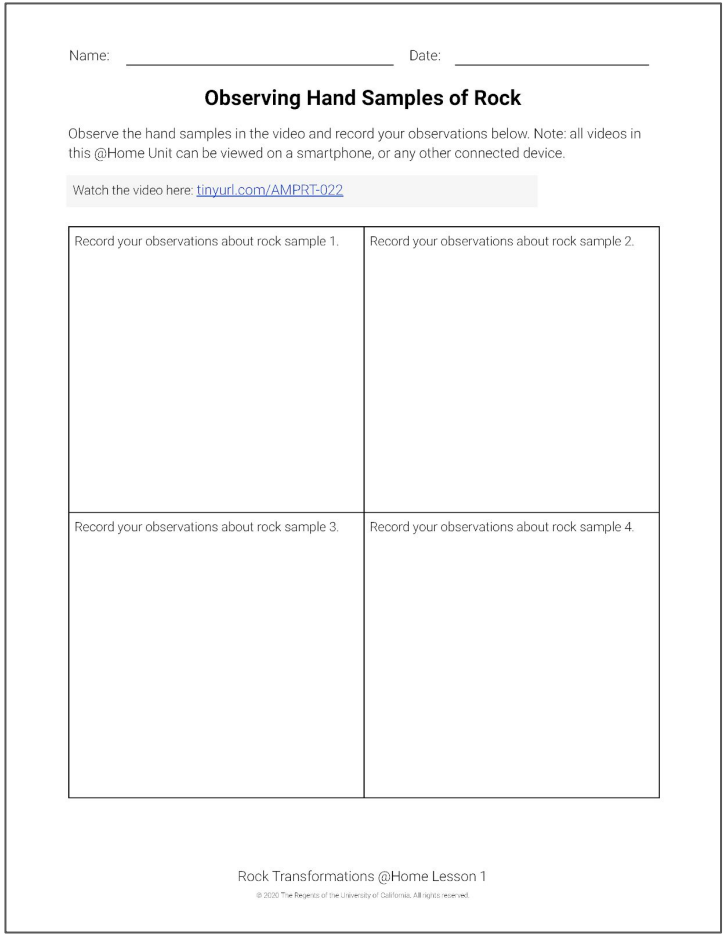
It is important for geologists to make detailed observations of the rock samples. On the following slide you will find the **Geologist's Detailed Observation Guidelines.**

Keep these guidelines in mind as you observe the hand samples.

Geologist's Detailed Observation Guidelines

1. Observe the **number and colors of grains** in the rock.
2. Observe the **sizes and shapes** of grains.
3. Observe whether the grains look **stuck together** or fitted together like puzzle pieces.
4. Observe the rock's **texture**, including how hard it is.
5. Notice whether there are **unusual features** in the rock, such as bubbles or fossils.

Of course, in the video you won't really be able to observe the rock's texture.



Name: _____ Date: _____

Observing Hand Samples of Rock

Observe the hand samples in the video and record your observations below. Note: all videos in this @Home Unit can be viewed on a smartphone, or any other connected device.

Watch the video here: tinyurl.com/AMPRT-022

Record your observations about rock sample 1.	Record your observations about rock sample 2.
Record your observations about rock sample 3.	Record your observations about rock sample 4.

Rock Transformations @Home Lesson 1

Go to the Observing Hand Samples of Rock activity.

As you watch the video, record your observations. You may need to watch the video a few times to make your observations.

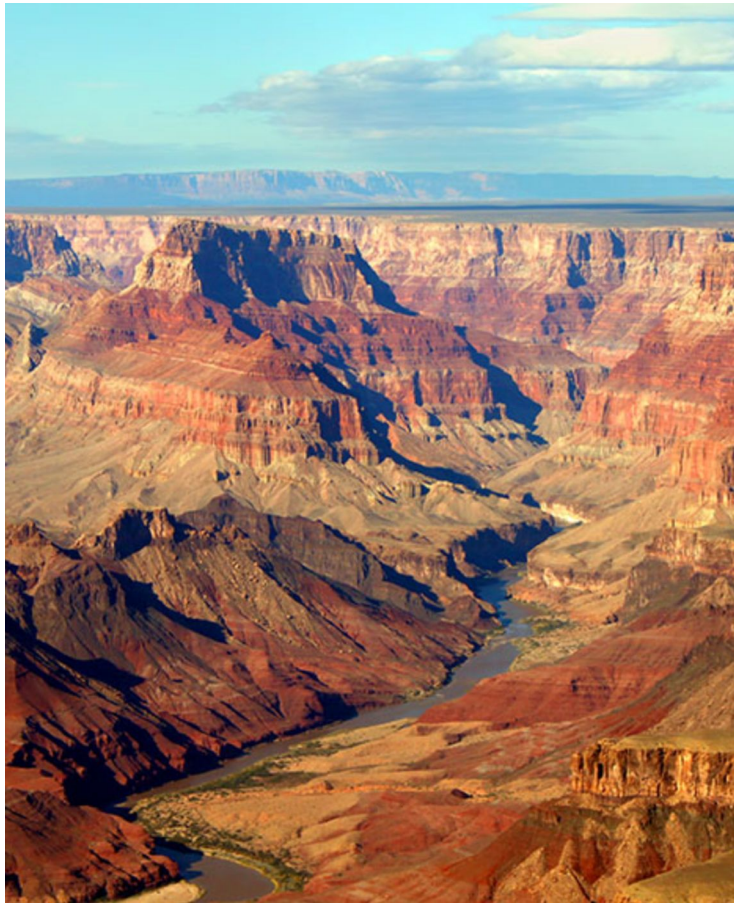
Observing Hand Samples of Rock page or Lesson 1.2, Activity 3

Using the print version? Watch the video here: tinyurl.com/AMPRT-022

Let's think about the rock samples you just observed.

How can you tell the rock samples apart?

What is similar about some or all of the rock samples?



Which of your observations could be true about the whole rock formation, and which are probably only true about the sample?

You might have thought of ideas like these:

- If the sample is hard, the whole rock formation is hard.
- If the sample has rounded edges, that does not mean the whole rock formation has rounded edges.

We will continue investigating how rocks form in the next lesson.

End of @Home Lesson

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

Amplify.

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Adapted from: Amplify Science *Rock Transformations* Lesson 1.2

Key Activities

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Ideas for synchronous or in-person instruction

Before meeting, have students watch the introductory video. While meeting, have students share their initial ideas. If you have access to kit materials, you could have students make observations of the rocks while you display them, allowing students to ask you questions about things they cannot observe directly such as hardness and texture.

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: Monday

Minutes for science: 15 min.

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

Lesson or part of lesson:
Lesson 1 Slides 1-18

Mode of instruction:
- [X] 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...
Watch the introductory video and jot their initial ideas about the unit problem, using the prompts on the slides.	Assign slides 1-18 in Schoology. Add a slide before the discussion prompts directing students to jot some notes.

Minutes for science: _____

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

Lesson or part of lesson:

Mode of instruction:
- ❑ Preview
- ❑ Review
- ❑ Teach full lesson live
- ❑ Teach using synchronous suggestions
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Students will...	Teacher will...

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- [ ] 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...
Watch the introductory video and jot their initial ideas about the unit problem, using the prompts on the slides.

Teacher will...
Assign slides 1-18 in Schoology. Add a slide before the discussion prompts directing students to jot some notes.

Minutes for science: 30 min

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

Lesson or part of lesson:
Lesson 1 Slides 13-36

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

Students will...
Discuss initial ideas about unit problem as a class. Discuss rock observations in breakout groups, then record observations on student platform, then synthesis discussion full-class.

Teacher will...
Lead initial discussion. Set up breakout rooms and pop in. Lead closing discussion. Note ideas we can build on in coming lessons.

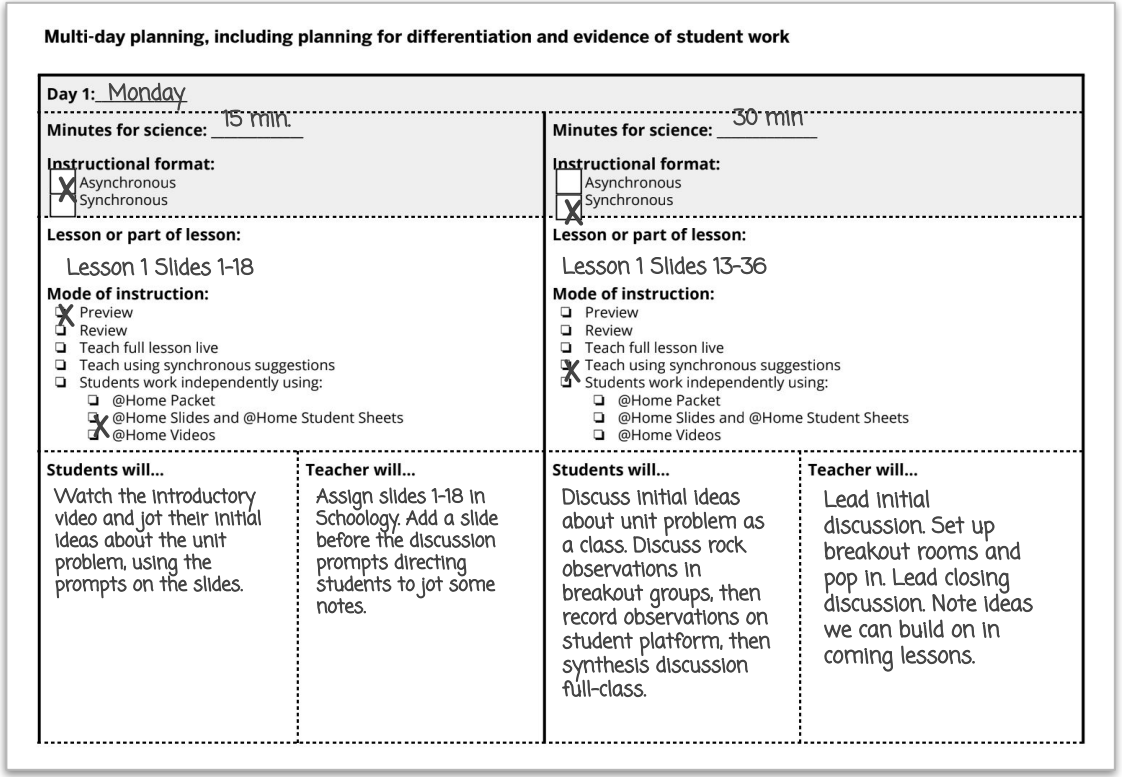
Breakout groups

In breakouts, discuss planning for Lesson 1.

How might you use these ideas when you teach Lesson 1?

What might you do differently?

What questions do you have?

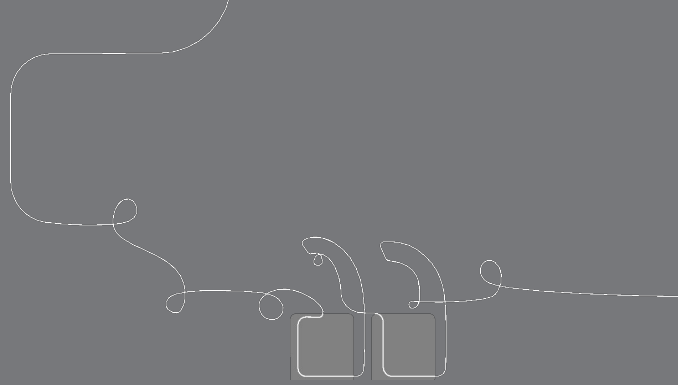


Multi-day planning, including planning for differentiation and evidence of student work

Day 1: Monday

Minutes for science: 15 min	**Minutes for science:** 30 min
Instructional format: [X] Asynchronous [ ] Synchronous	**Instructional format:** [ ] Asynchronous [X] Synchronous
Lesson or part of lesson: Lesson 1 Slides 1-18	**Lesson or part of lesson:** Lesson 1 Slides 13-36
Mode of instruction: [X] 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	**Mode of instruction:** [ ] Preview [ ] Review [ ] Teach full lesson live [X] 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...
Watch the introductory video and jot their initial ideas about the unit problem, using the prompts on the slides.	Assign slides 1-18 in Schoology. Add a slide before the discussion prompts directing students to jot some notes.	Discuss initial ideas about unit problem as a class. Discuss rock observations in breakout groups, then record observations on student platform, then synthesis discussion full-class.	Lead initial discussion. Set up breakout rooms and pop in. Lead closing discussion. Note ideas we can build on in coming lessons.



Questions?

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: discussion prompts notes - not to be collected

Synchronous: Record rock observations

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: n/a

Synchronous: Submit work through Amplify Science platform

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(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: students complete the warm-up activity

Synchronous: record observations of rocks either on the Amplify site or in their investigation notebook. students will also jot down their initial ideas about each of the claims

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 work digitally on the Amplify Science website

Synchronous: Students will submit their work on the Amplify Science site or by taking a picture of their Investigation Notebook page and emailing it

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.)

Supports:

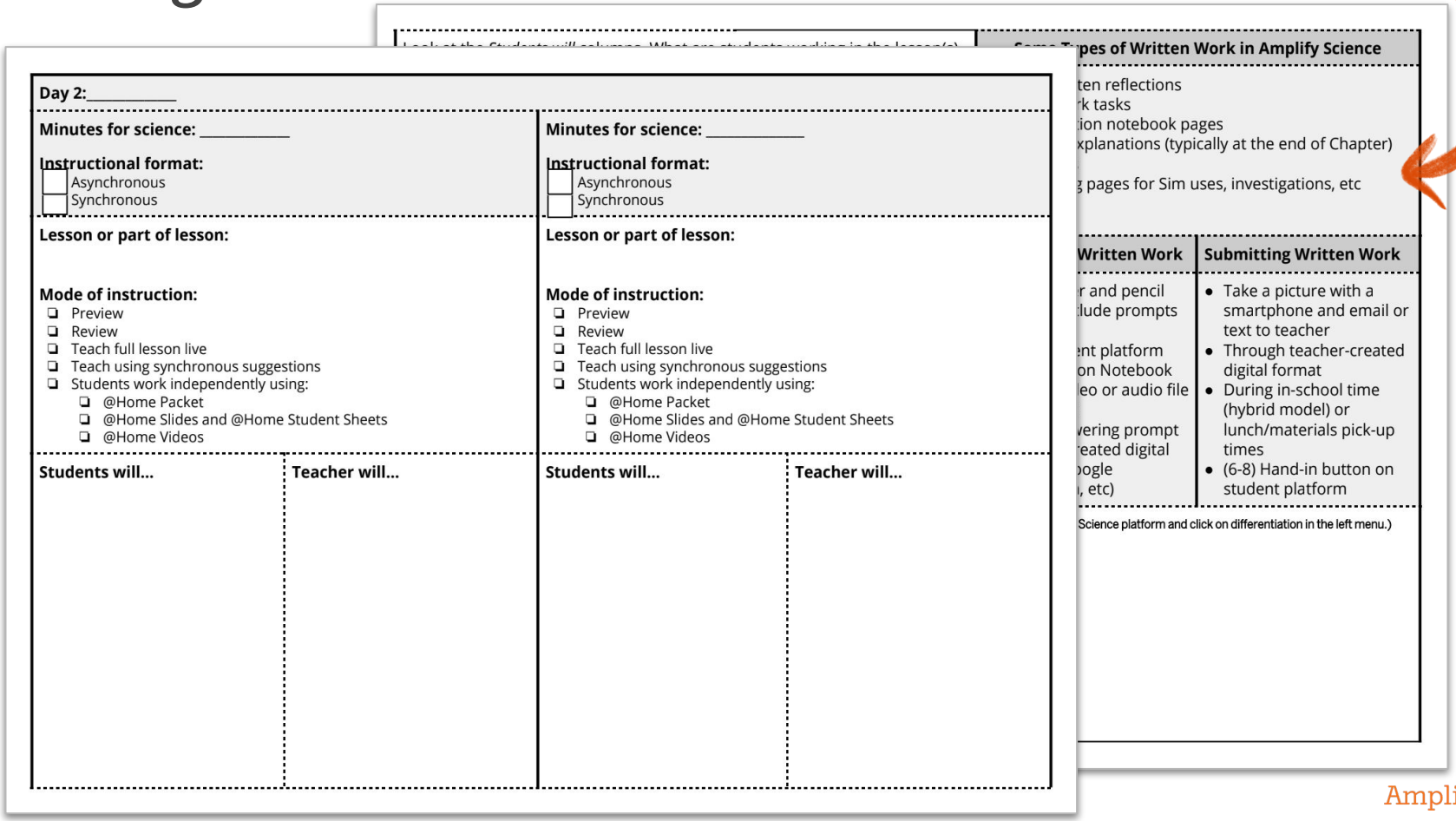
- Leverage primary language for recording observations of rocks
- After the lesson: self-reflection about participation in class discussion and what helped them participate actively

Extension:

- Create a diagram of the rock samples then go online and search to try to figure out what type of rock they might be

Planning Resource

pages 11-12



Day 2:_____

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...

pes of Written Work in Amplify Science

ten reflections
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ion notebook pages
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Written Work	Submitting Written Work
r and pencil lude prompts nt platform on Notebook eo or audio file vering prompt eated digital oogle , 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

Science platform and click on differentiation in the left menu.)

Plan for the day

- Framing the day
  - Amplify Science Refresher
  - Instructional Materials
- Unit Internalization
- Planning to teach
  - Collecting evidence of student learning to meet diverse learner needs
- **Reflection and closing**

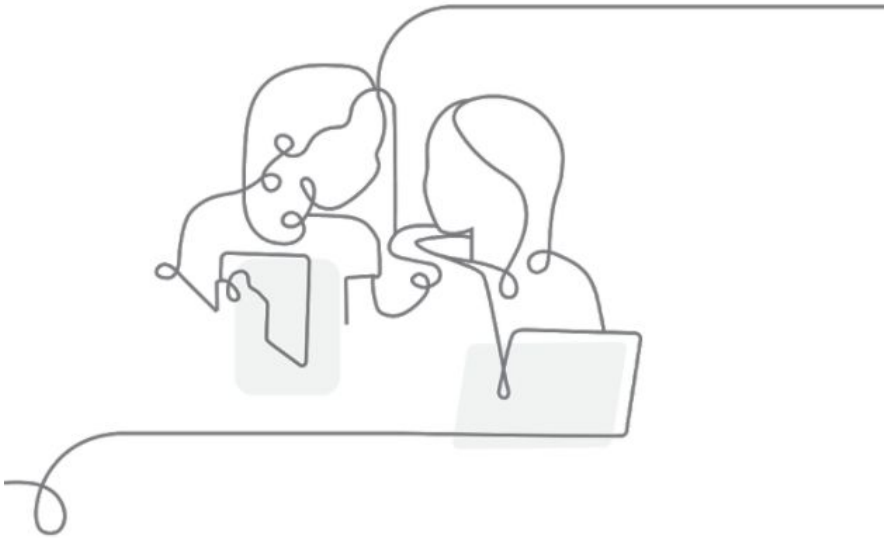
Head or hands reflection

Reflect independently, then volunteer to share

Based on our work today getting to know the unit and the @Home resources....

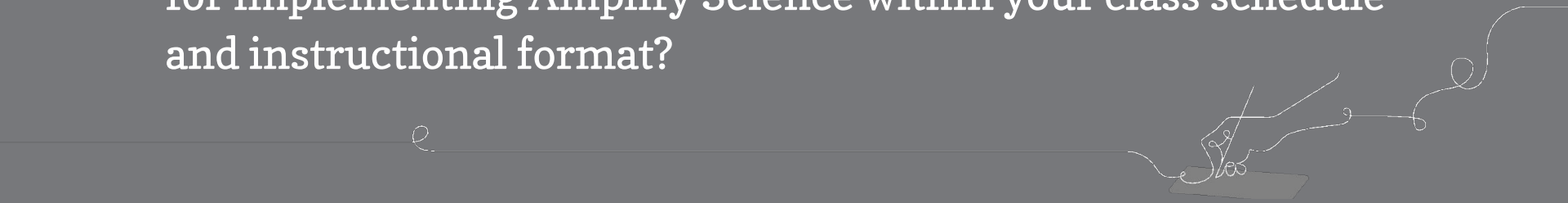
Head: What will you keep in mind while you plan?

Hands: What will you do when you're teaching?



During this workshop did we meet our objectives?

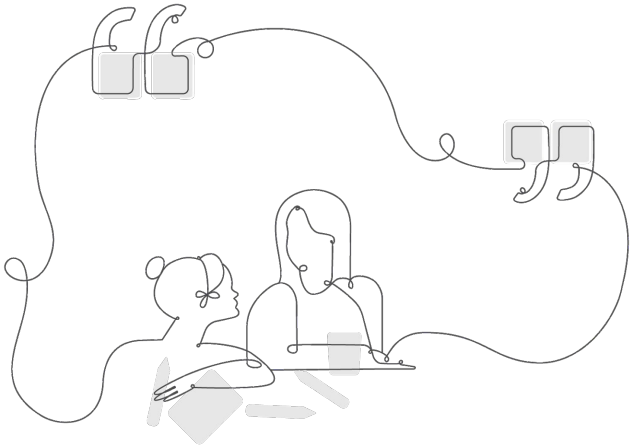
- Were you able to internalize your upcoming unit?
- Do you know how to plan for **collecting evidence of student learning** in order to make instructional decisions to **support diverse learner needs**?
- Do you have the resources you need to develop a multi-day plan for implementing Amplify Science within your class schedule and instructional format?



Upcoming LAUSD Office Hours

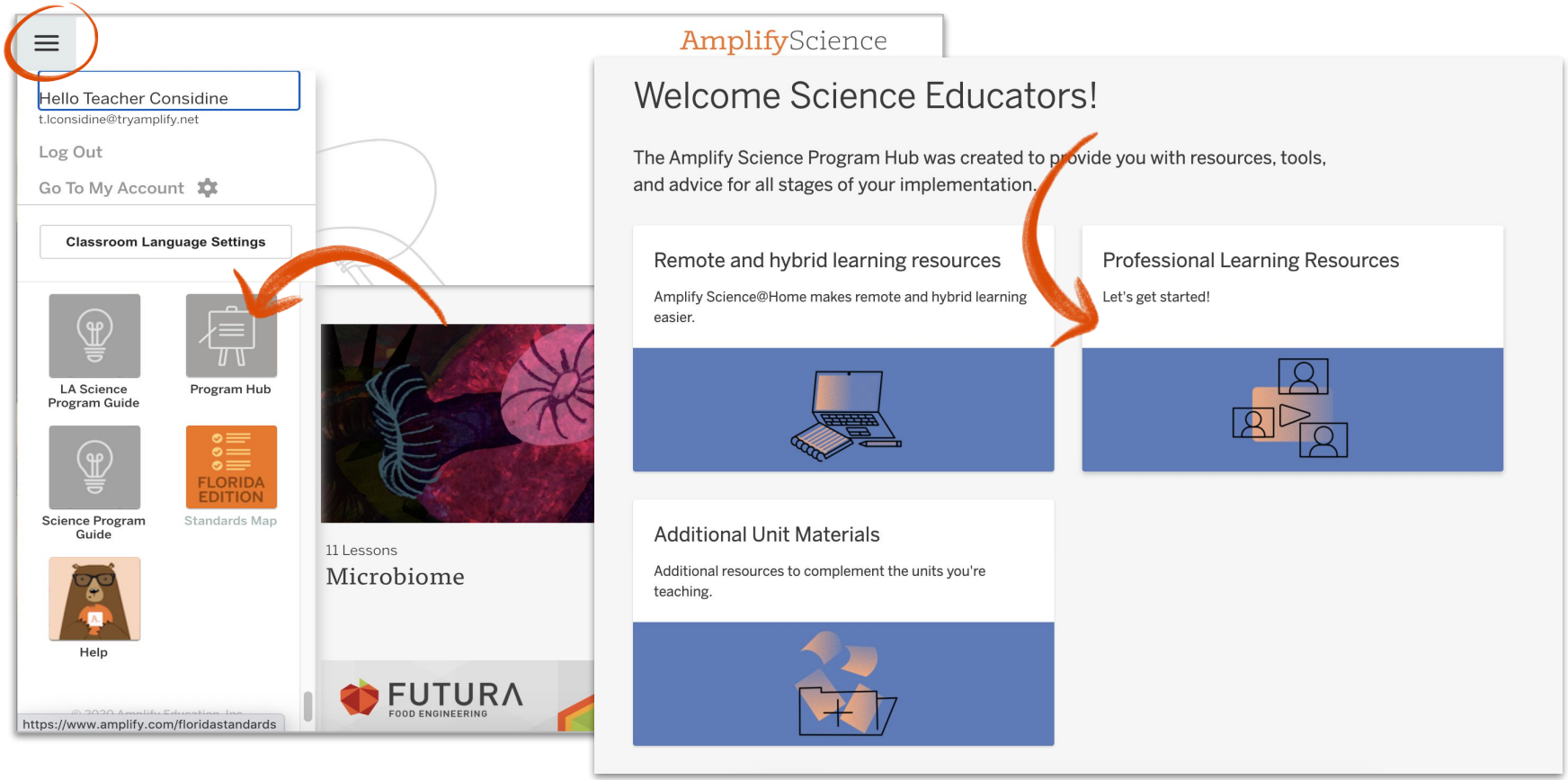
Twice Monthly

- Thursday, 2/11 (3-4pm)
- Thursday, 2/25 (3-4pm)
- Thursday, 3/11 (3-4pm)
- Thursday, 3/25 (3-4pm)

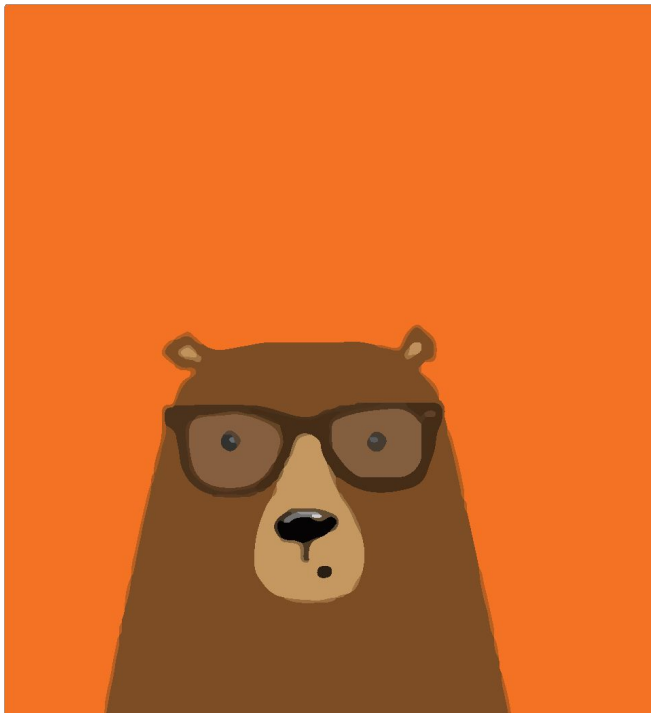


http://bit.ly/LAUSDMSOfficeHours

Program Hub: Self Study Resources



Back to school national webinar series

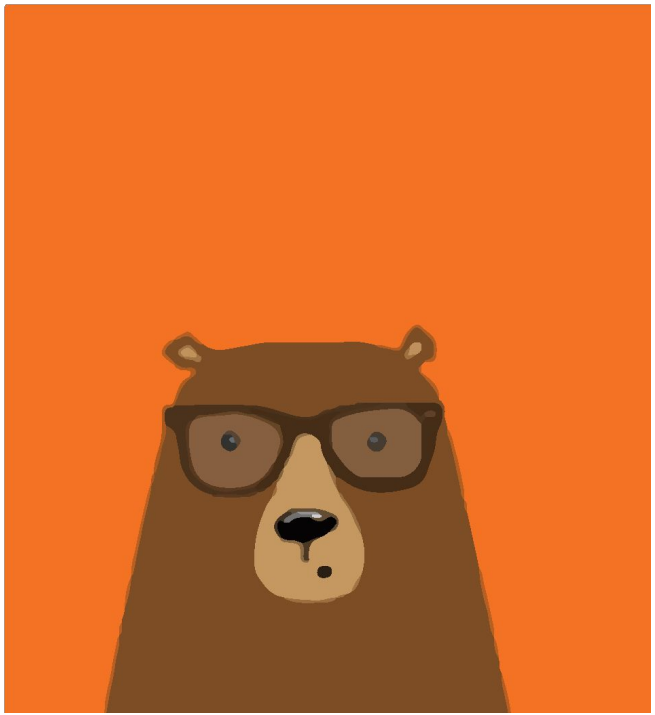


Topics included:

- Remote and hybrid learning support
- Navigation support
- What's new for 2020-2021
- Planning support
- Curriculum overview

bit.ly/BTSwebinars

Additional Amplify resources

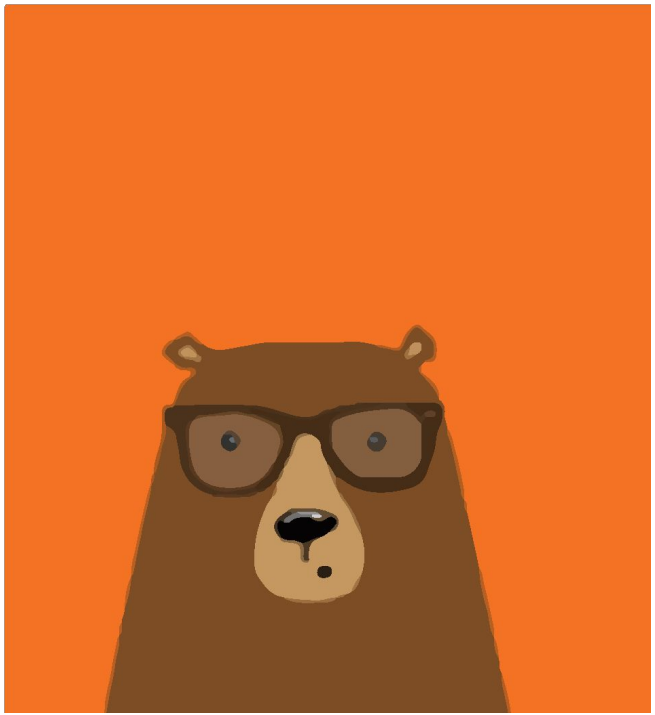


Caregivers site

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

amplify.com/amplify-science-family-resource-intro/

Additional Amplify 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 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.

Please provide us feedback!

URL: https://www.surveymonkey.com/r/AmplifyLAUSDMS

Presenter names (choose 1)**:**

Date: xx