

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 add your best remote learning tips and tricks to the Jamboard.

Amplify Science

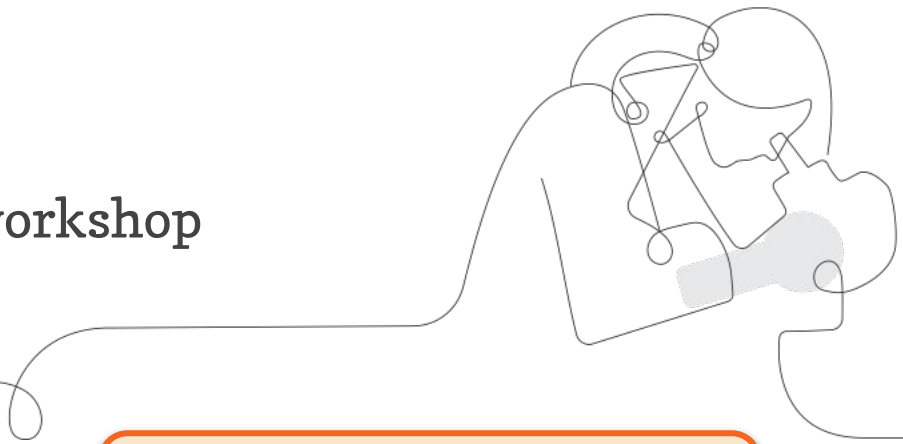
Unit Internalization & Guided Planning

Deep-dive and strengthening workshop
Grade 7, Geology on Mars

LAUSD

1/20/2021

Presented by Your Name



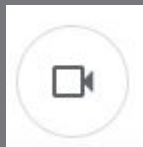
In a new tab, please log into
your Amplify Science account
through Schoology.

Use two windows for today's webinar

The diagram illustrates the setup for a two-window webinar. An inset shows a mouse cursor clicking the maximize button (the green circle) in the title bar of a window. Two windows are shown side-by-side:

- Window #1:** A Google Meet window titled "Meet - Etiwanda Grade 7 N". The URL is `meet.google.com/hcs-dxpk-wrm?aut...`. Below the video area, the Amplify Science curriculum page is visible, showing "Plate Motion" and "Progress Build Level 1: The Earth's entire outer layer (below the water and soil that we see) is made of solid rock that is divided into plates. Earth's plates can move."
- Window #2:** The Amplify Curriculum website, titled "Amplify Curriculum". The URL is `apps.learning.amplify.com/curriculu...`. It shows "Lesson 1.2: Using Fossils to Understand Earth" with a dinosaur illustration. The navigation bar includes "Lesson Brief (4 Activities)", "1 WARM-UP Warm-Up", "TEACHER Why Geologists Value Fossils", and "2 TEACHER-LED DISCUSSION Introducing Mesos".

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.

e





Plan for the day

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





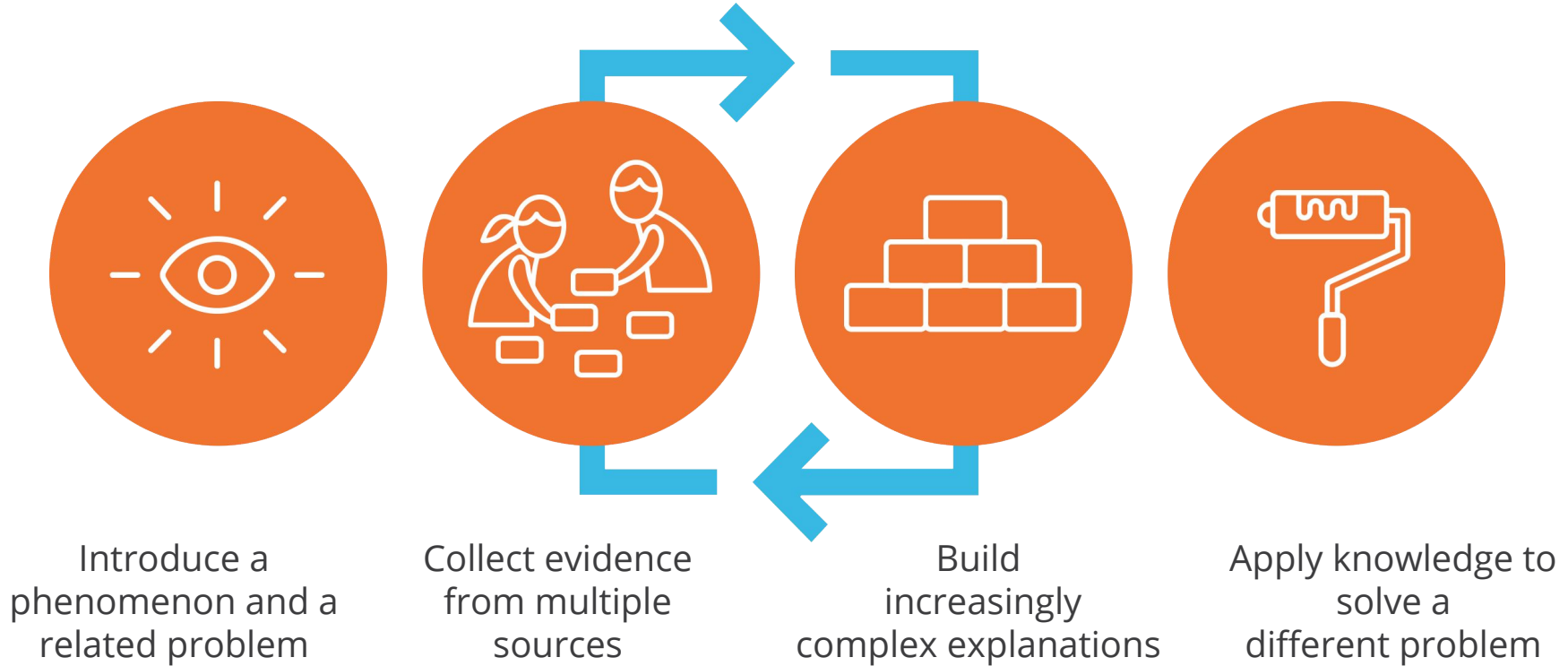
Plan for the day

- **Framing the day**
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Amplify Science Refresher

Amplify Science Instructional Approach



Middle school course curriculum structure

Integrated model*

Grade 6

- Launch: Microbiome
- Metabolism
- Engineering Internship: Metabolism
- Traits and Reproduction
- Thermal Energy
- Ocean, Atmosphere, and Climate
- Weather Patterns
- Earth's Changing Climate
- Engineering Internship: Earth's Changing Climate

Grade 7

- Launch: Geology on Mars
- Plate Motion
- Engineering Internship: Plate Motion
- Rock Transformations
- Phase Change
- Engineering Internship: Phase Change
- Chemical Reactions
- Populations and Resources
- Matter and Energy in Ecosystems

Grade 8

- Launch: Harnessing Human Energy
- Force and Motion
- Engineering Internship: Force and Motion
- Magnetic Fields
- Light Waves
- Earth, Moon, and Sun
- Natural Selection
- Engineering Internship: Natural Selection
- Evolutionary History

AmplifyScience

authored by



THE LAWRENCE
HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

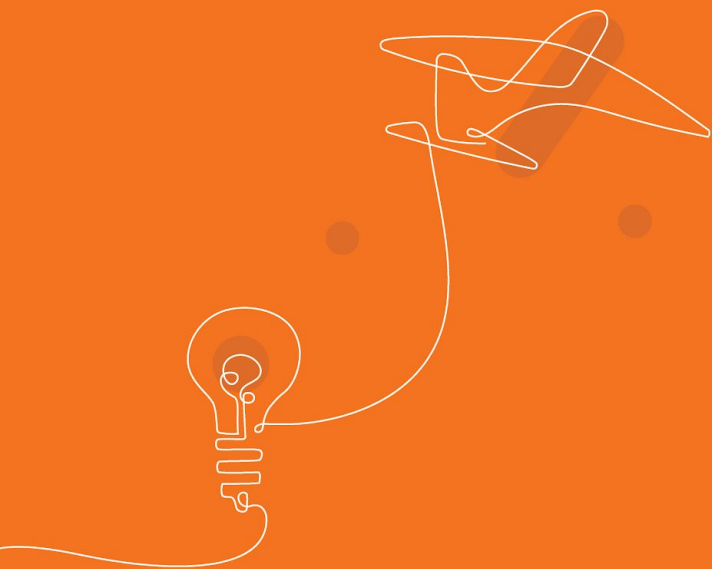
Launch units

- First unit
- 11 lessons

Core units

- Majority of units
- 19 lessons

*These are the prioritized units for 7th grade.

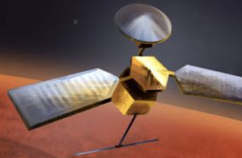


Instructional Materials

Standard Amplify Science Curriculum

11 Lessons

Geology on Mars



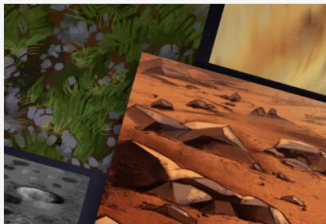
Standard Amplify Science Curriculum

The Geology on Mars unit has **11 lessons** across 3 chapters. Each lesson is written to be **45 minutes** long.

JUMP DOWN TO UNIT GUIDE



GENERATE PRINTABLE TEACHER'S GUIDE



Chapter 1:
Comparing Earth
and Rocky Planets

3 Lessons



Chapter 2: Using
Models as Evidence

3 Lessons



Chapter 3:

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 many of these in today's workshop.

Planning for the Unit

Unit Overview

Unit Map

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System


Embedded Formative Assessments


Articles in This Unit


Apps in This Unit


Opportunities for Unit Extensions


Printable Resources


 Article Compilation

 Copymaster Compilation

 Investigation Notebook

 NGSS Information for Parents and Guardians

 Print Materials 8.5" x 11"

 Print Materials 11" x 17"

Offline Preparation

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

Offline Guide

Skip slide if modeling live on the platform.

Standard Amplify Science Curriculum

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

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.

The screenshot shows the Amplify Science platform interface. At the top, the navigation bar includes the Amplify Science logo, "CALIFORNIA EDITION", and the breadcrumb "Geology on Mars > Chapter 1 > Lesson 1.1". Below this is a large header image with the text "Lesson 1.1: Comparing Rocky Planets". A horizontal menu below the header contains five items: "Lesson Brief (5 Activities)", "1 TEACHER-LED DISCUSSION Introducing Earth and Space Science", "2 TEACHER-LED DISCUSSION Introducing Rocky Planets", "3 STUDENT-TO-STUDENT DISCUSSION Comparing Rocky Planets", and "4 TEACHER-LED DISCUSSION Discussing the Unit Question". To the right of the menu is a "5 HOMEWORK Homework" section. Below the menu, there is a "RESET LESSON" button and a "GENERATE PRINTABLE LESSON GUIDE" button. The main content area is titled "Overview" and contains the text: "Students consider the Unit Question: *How can we search for evidence that other planets were once habitable?* To begin to answer this question, students learn that Earth is one of four rocky planets in our solar system. Students compare Earth's hydrosphere, atmosphere, biosphere, and geosphere to those of other rocky planets. Through this activity, students identify Mars as a compelling place to search for evidence of habitability. After this focus on Mars is established, students watch a short video interview of a real planetary geologist. The planetary geologist describes how she uses her understanding of Earth to inform the search for signs of past habitability on Mars." On the left side of the main content area, there is a sidebar with links: "Overview", "Materials & Preparation", "Differentiation", "Standards", "Vocabulary", and "Unplugged?". At the bottom left of the sidebar is a "Español" button. On the right side of the main content area, there is a "Digital Resources" section with links: "Classroom Slides 1.1 | PowerPoint", "Classroom Slides 1.1 | Google Slides", "All Projections", "Video: Meet a Planetary Geologist", "Scale in the Solar System", "Printable article: 'Scale in the Solar System'", and "Geology on Mars Investigation Notebook".

Skip slide if modeling live on the platform.

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.

AmplifyScience

Hello Teacher Considine
t.lconsidine@tryamplify.net

Log Out

Go To My Account ⚙️

Classroom Language Settings

LA Science Program Guide

Program Hub

Science Program Guide

Standards Map

Help

6th Grade ▾

11 Lessons
Microbiome

19 Lessons
Metabolism

FUTURA
FOOD ENGINEERING

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<https://www.amplify.com/floridastandards>

AmplifyScience@Home

Two different options:

@Home Units

- Digital or print-based versions of Amplify Science units condensed by about 50%

@Home Videos

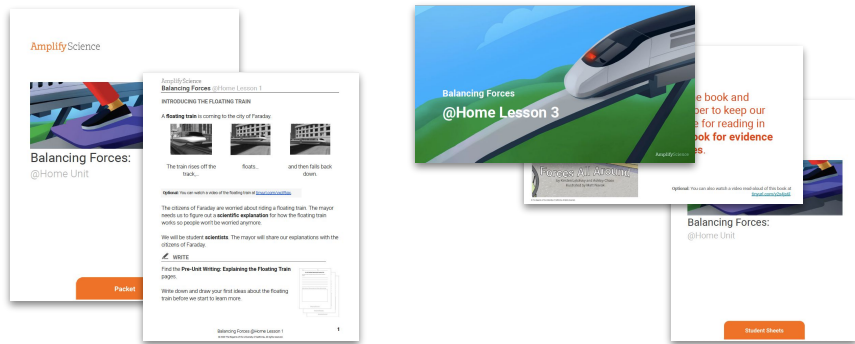
- Video playlists of Amplify Science lessons, taught by real Amplify Science teachers



@Home Units

A shift in approach to respond to user feedback

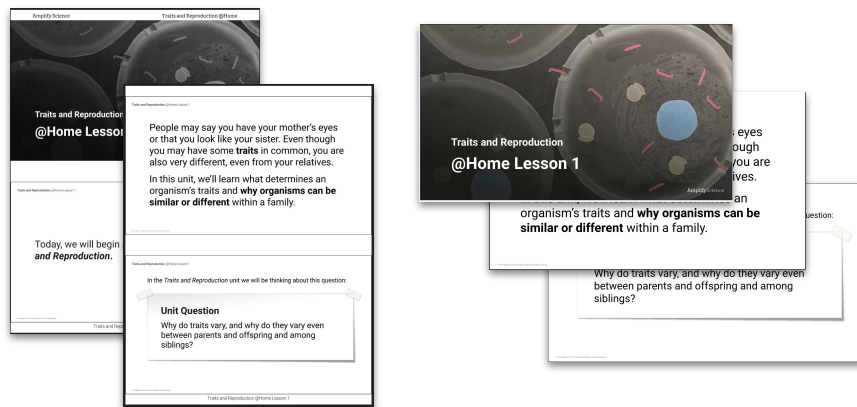
Original approach: two different resources



Print-based: @Home packets

Digital: @Home slides and student sheets

Updated approach: one resource, two formats



Print-based: PDFs of @Home Slides and student sheets

Digital: Google Slides @Home Slides and Google Doc student sheets

Amplify Science @Home Curriculum

You have access to the
Geology on Mars @Home
Unit.

The Geology on Mars @Home
Unit has **9 lessons**. Each lesson
is written to be **30 minutes**
long.

The screenshot shows the 'Geology on Mars' unit page. At the top, there are tabs for '@Home Unit' (selected), '@Home Videos', and 'Hands-on investigations videos'. Below the tabs is a language selector set to 'English'. The main content area is titled 'Instructions >' and contains six resource cards arranged in a 2x3 grid. The top row includes 'GOM@Home Teacher Resources', 'GOM@Home Family Overview', and 'GOM@Home Student Materials Compilations'. The bottom row includes 'GOM@Home Lesson 1', 'GOM@Home Lesson 2', and a partially visible 'GOM@Home Lesson 3'. Each card lists available resources with icons for Google (link) and PDF (download). Two blue arrows with white text are overlaid on the bottom row: one pointing to the 'GOM@Home Lesson 1' card labeled 'Paper option', and another pointing to the 'GOM@Home Lesson 2' card labeled 'Digital option'. An orange circle highlights the 'GOM@Home Lesson 2' card.

Geology on Mars ▼

@Home Unit @Home Videos Hands-on investigations videos

@Home Unit English ▼

Instructions >

GOM@Home Teacher Resources
TEACHER OVERVIEW
🔗 Google
📄 PDF
LESSON INDEX
📄 PDF

GOM@Home Family Overview
🔗 Google
📄 PDF

GOM@Home Student Materials Compilations
ALL SLIDES
🔗 Google
📄 PDF
ALL STUDENT SHEETS
🔗 Google
📄 PDF
ALL PACKETS
🔗 Google
📄 PDF

GOM@Home Lesson 1
DIGITAL OPTION (SLIDES + STUDENT SHEETS)
🔗 Slides- Google
📄 Slides- PDF
📄 Student Sheets- Google
PRINT-BASED OPTION
🔗 Packet Google
📄 Packet PDF

GOM@Home Lesson 2
DIGITAL OPTION (SLIDES + STUDENT SHEETS)
🔗 Slides- Google
📄 Slides- PDF
📄 Student Sheets- Google
PRINT-BASED OPTION
🔗 Packet Google
📄 Packet PDF

GOM@Home Lesson 3
DIGITAL OPTION (SLIDES + STUDENT SHEETS)
🔗 Slides- Google
📄 Slides- PDF
📄 Student Sheets- Google
PRINT-BASED OPTION
🔗 Packet Google
📄 Packet PDF

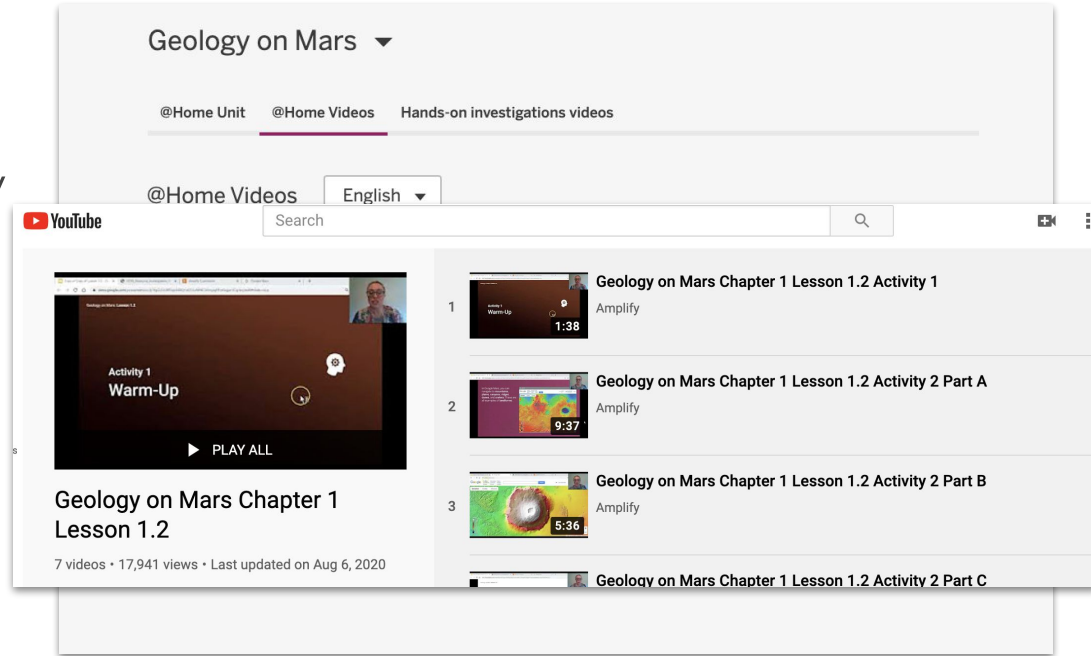
Paper option

Digital option

Amplify Science @Home Curriculum

You have access to the Geology on Mars @Home Videos.

There are 9 @Home Videos for the Geology on Mars unit in English. This covers all lessons expect for Lesson 1.1. The video playlists on YouTube teach the standard Amplify Science Lessons.



Amplify Science Launch Units



What is a Launch Unit?

- First unit of the year
- Focused on an interesting, immersive, and often surprising problem.
- Introduces practices that are integral to science, such as:
 - Argumentation
 - Reading
 - Writing
 - Talking about science ideas
 - Using models
- Introduces routines such as:
 - Active reading
 - Discourse routines



Plan for the day

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

Unit Map

Planning for the Unit

Printable Resources

Unit Overview

Unit Map

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System

Copymaster Compilation

Investigation Notebook

NGSS Information for Parents and Guardians

Print Materials 8.5" x 11"

Print Materials 11" x 17"

Offline Preparation

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

Offline Guide

Page 2

Geology on Mars

Planning for the Unit

Unit Map

Unit Map

How can we search for evidence that other planets were once habitable?

Evidence that water was once present on a planet is evidence that the planet may once have had living organisms. In their role as student planetary geologists working to investigate the planet Mars, students investigate whether a particular channel on Mars was caused by flowing water or flowing lava. Along the way, students engage in the practices and ways of thinking particular to planetary geologists, and learn to consider a planet as a system of interacting sub-systems.

Chapter 1. What geologic process could have formed the channel on Mars?

Students figure out: Earth, Mars, and other rocky planets can be thought of as systems. These systems are made up of interacting spheres that can include the geosphere, atmosphere, hydrosphere, and biosphere. When landforms on different rocky planets look similar, it is evidence that they may have been formed by the same geologic process. The channel on Mars may have been caused by flowing water or flowing lava.

How they figure it out: They examine cards with information about interacting spheres on the rocky planets of our solar system. They observe photographs of similar features on Mars and Earth. They are introduced to scientific argumentation and practice with an everyday example.

Chapter 2. How can we gather more evidence about whether lava or water formed the channel on Mars?

Students figure out: Scientists can use models to test their ideas and get evidence about processes in the natural world that are difficult to observe. Landforms can provide evidence about the past because they remain after the geologic processes that formed them stop happening. Models represent the natural processes being investigated in important ways, but they are not exactly the same. Models of channels formed by water and models of channels formed by lava each have similarities with the channel on Mars.

How they figure it out: They read about how scientists model processes on rocky planets. They observe how flowing water creates channels using a stream table model, and they test ideas using the stream table model. They observe a video of a melted wax model representing how flowing lava can form a channel.

Chapter 3. How can we decide which geologic process formed the channel on Mars?

Students figure out: The channel on Mars was probably formed by water. The rover *Curiosity* found rocks near the channel that were made up of many smaller rocks. On Earth, the type of rock that is made of smaller rocks is found near channels made by water. On Earth, rocks found in or near channels made by flowing lava are made up of just one type of rock because they are made of hardened lava.

How they figure it out: They evaluate the quality of evidence about the channel on Mars, including new evidence about rocks found in the channel. They are introduced to reasoning as a part of scientific argumentation and connect evidence to a claim about the channel.

1

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Unit Guide Resources

Planning for the Unit

Unit Overview



Unit Map



Getting Ready to Teach



Materials and Preparation



Science Background



Standards at a Glance



Teacher References

Lesson Overview Compilation



Standards and Goals



3-D Statements



Assessment System



Printable Resources

Article Compilation

Copymaster Compilation

Investigation Notebook

NGSS Information for Parents and Guardians

Print Materials 8.5" x 11"

Print Materials 11" x 17"

Offline Preparation

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

Offline Guide

Unit Guide resources

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

Planning for the unit

Unit Overview	Describes what's in each unit, the rationale, and how students learn across chapters
Unit Map	Provides an overview of what students figure out in each chapter, and how they figure it out
Progress Build	Explains the learning progression of ideas students figure out in the unit
Getting Ready To Teach	Provides tips for effectively preparing to teach and teaching the unit in your classroom
Materials and Preparation	Lists materials included in the unit's kit, items to be provided by the teacher, and briefly outlines preparation requirements for each lesson
Science Background	Adult-level primer on the science content students figure out in the unit
Standards at a Glance	Lists 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 Flexextension 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
Flexextension Compilation	Compilation of all copymasters for Hands-On Flexextension 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



Guided Unit Internalization

Part 1: Unit-level internalization

Unit title: Geology on Mars

What is the phenomenon students are investigating in your unit?

There is a channel on the surface of Mars.

Unit Question:

How can we search for evidence that other planets were once habitable?

Student role:

Planetary Geologists

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

The channel on Mars was probably formed by water. The rover *Curiosity* found rocks near the channel that were made up of many smaller rocks. On Earth, the type of rock that is made of smaller rocks is found near channels made by water. On Earth, rocks found in or near channels made by flowing lava are made up of just one type of rock because they are made of hardened lava..

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

Earth, Mars, and other rocky planets can be thought of as systems. These systems are made up of interacting spheres that can include the geosphere, atmosphere, hydrosphere, and biosphere. Scientists can use models to test their ideas and get evidence about processes in the natural world that are difficult to observe. On Earth, the type of rock that is made of smaller rocks is found near channels made by water.



Questions?



Plan for the day

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Geology on Mars

Planning for the Unit

Unit Map



Unit Map

How can we search for evidence that other planets were once habitable?

Evidence that water was once present on a planet is evidence that the planet may once have had living organisms. In their role as student planetary geologists working to investigate the planet Mars, students investigate whether a particular channel on Mars was caused by flowing water or flowing lava. Along the way, students engage in the practices and ways of thinking particular to planetary geologists, and learn to consider a planet as a system of interacting sub-systems.

Chapter 1. What geologic process could have formed the channel on Mars?

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How they figure it out: They examine cards with information about interacting spheres on the rocky planets of our solar system. They observe photographs of similar features on Mars and Earth. They are introduced to scientific argumentation and practice with an everyday example.



Chapter 1: Comparing Earth and Rocky Planets

▼ JUMP DOWN TO CHAPTER OVERVIEW

Lesson 1.1:
Comparing Rocky
Planets

Lesson 1.2:
Observing the
Surfaces of Mars and
Earth

Lesson 1.3:
Investigating a
Mystery Object on
Mars

Chapter Overview



@Home Lesson 1

Adapted from: Amplify Science *Geology on Mars* Lesson 1.1 and 1.2

Key Activities

- **Introducing Planetary Geology:** Students learn that planetary geologists are interested in evidence that a planet that is not habitable now could have been habitable in the past.
- **Introducing the Rocky Planets:** Students learn about how the rocky planets in our solar system are similar to Earth and that Earth is a system that can be thought of as four spheres.
- **Observe:** Students compare the geospheres and hydrospheres of Earth and Mars, and then are introduced to a real planetary geologist who is using what she knows about Earth to learn about Mars.



Geology on Mars

@Home Lesson 1

We are starting a new science unit about **Earth and space science**—the study of processes on Earth and in space.

Earth science is not just **knowledge** you can read about—it is also the process used to figure out that knowledge. You'll learn to see and investigate the world like Earth scientists.

The Night Sky



Many people look at the sky and wonder if there is life beyond Earth.

Today, scientists are using advanced tools to see if other planets could **support life.**

The Night Sky



In this unit, you will take on the role of student **planetary geologists**. One thing planetary geologists do is search for evidence that other planets could have supported life.

As planetary geologists, you'll help the Universal Space Agency search for evidence that other planets could support life.



What do you think a planet would need to support life?

Here is an important word we will use often as planetary geologists.



habitable

having the conditions necessary to support life

Glossary

atmosphere: the mixture of gases surrounding a planet
atmósfera: la mezcla de gases que rodea a un planeta

biosphere: all the living things on a planet
biosfera: todos los seres vivientes en un planeta

channel: a long, narrow groove that forms where water, lava, or other liquid flows
canal: una ranura larga y estrecha que se forma donde el agua, la lava u otro líquido fluye

claim: a proposed answer to a question about the natural world
afirmación: una respuesta propuesta a una pregunta sobre el mundo natural

compare: to notice how two or more things are alike or different
comparar: notar en qué son iguales o diferentes dos o más cosas

evidence: information about the natural world that is used to support or go against (refute) a claim
evidencia: información sobre el mundo natural que se utiliza para respaldar o rechazar (refutar) una afirmación

geologic process: an event or series of events that causes changes in the geosphere, such as flowing water or flowing lava
proceso geológico: un evento o serie de eventos que causa cambios en la geosfera, como agua o lava que fluye

geosphere: the solid part of a rocky planet
geosfera: la parte sólida de un planeta rocoso

habitable: having the conditions necessary to support life
habitable: que tiene las condiciones necesarias para sostener la vida

hydrosphere: all the liquid water and solid water (ice) on a planet
hidrosfera: toda el agua líquida y el agua sólida (hielo) en un planeta

landform: a feature that forms on the surface of a planet, such as a mountain, channel, or sand dune
acidente geográfico: un rasgo que se forma sobre la superficie de un planeta, como una montaña, un canal o una duna de arena

Geology on Mars @Home Lesson 1
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Geology on Mars @Home Lesson 1
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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](#).

Real scientists are currently looking for evidence that other planets were **habitable** in the past. Taking on the role of **student planetary geologists** will give us a chance to do some of the work real scientists do, and we will use what we learn to answer the question on the next slide.

We will be trying to figure out this question throughout the unit.

Unit Question

How can we search for evidence that other planets were once habitable?

Scientists are interested in **evidence** that a planet that is not habitable now could have been **habitable in the past**.

Our search begins with our **Solar System**, which is pictured on the next slide. Because Earth supports life, we will want to search for evidence of past habitability on planets that are **similar** to Earth.

Note: the image on the next slide shows the planets in the correct order from the sun, but the size of the planets and the distance between the planets are not to scale!

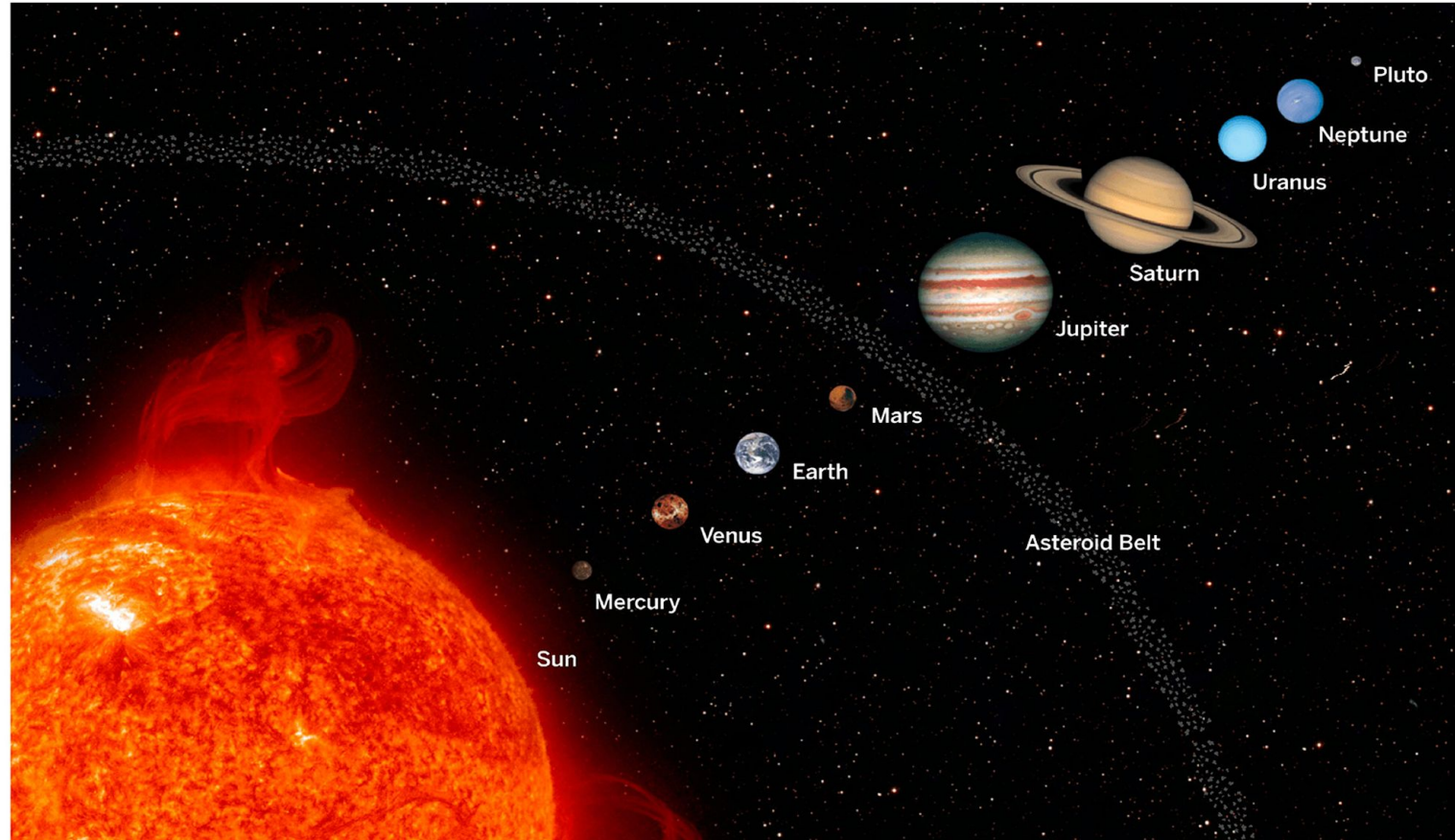
@Home Lesson 1

Adapted from: Amplify Science *Geology on Mars* Lesson 1.1 and 1.2

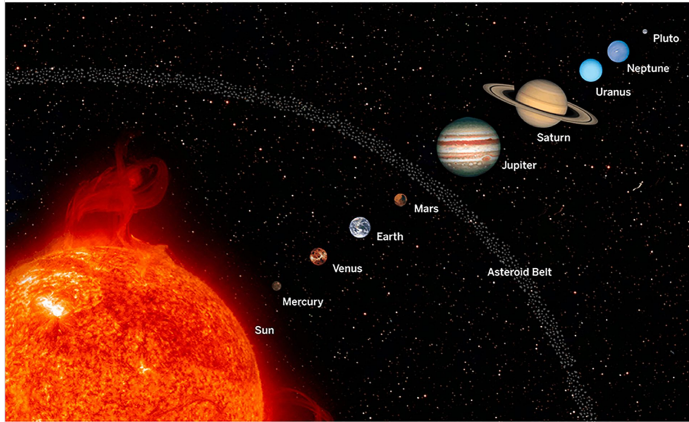
Key Activities

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- **Observe:** Students compare the geospheres and hydrospheres of Earth and Mars, and then are introduced to a real planetary geologist who is using what she knows about Earth to learn about Mars.

Our Solar System

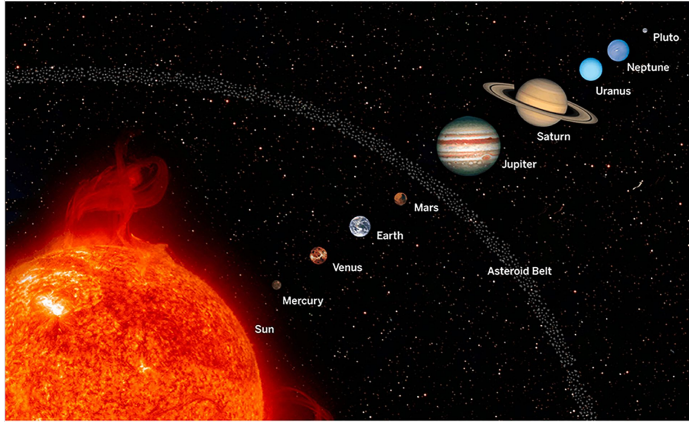


Our Solar System



The **planets** in our solar system that are **farther** from the sun, such as Jupiter and Saturn, are often very cold, possibly too cold to support life. These planets are made of mostly gas and ice.

Our Solar System



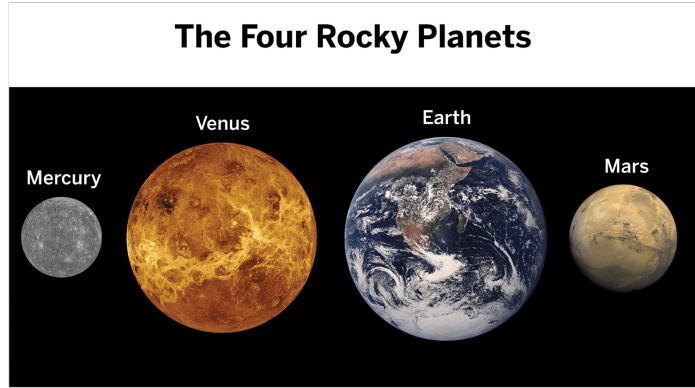
The four planets closest to the sun (including Earth) are called **rocky planets**. Rocky planets are good places to start looking for life beyond Earth because their surface is solid.

We have been using a word important to planetary geologists:



rocky planet

any planet with a solid surface, such as Earth or Mars



Mercury, Venus, and Mars are similar to Earth in some important ways: they are **close to the sun** and made of **solid rock**. This image shows their relative sizes. Earth is the largest of the four.

We will investigate this question to help us figure out how we can search for evidence that other planets were once habitable:

Investigation Question:

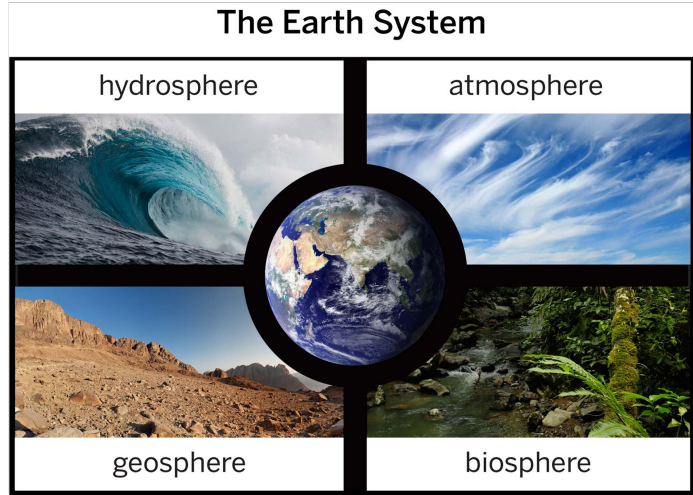
How does our understanding of Earth help us learn about other rocky planets?

@Home Lesson 1

Adapted from: Amplify Science *Geology on Mars* Lesson 1.1 and 1.2

Key Activities

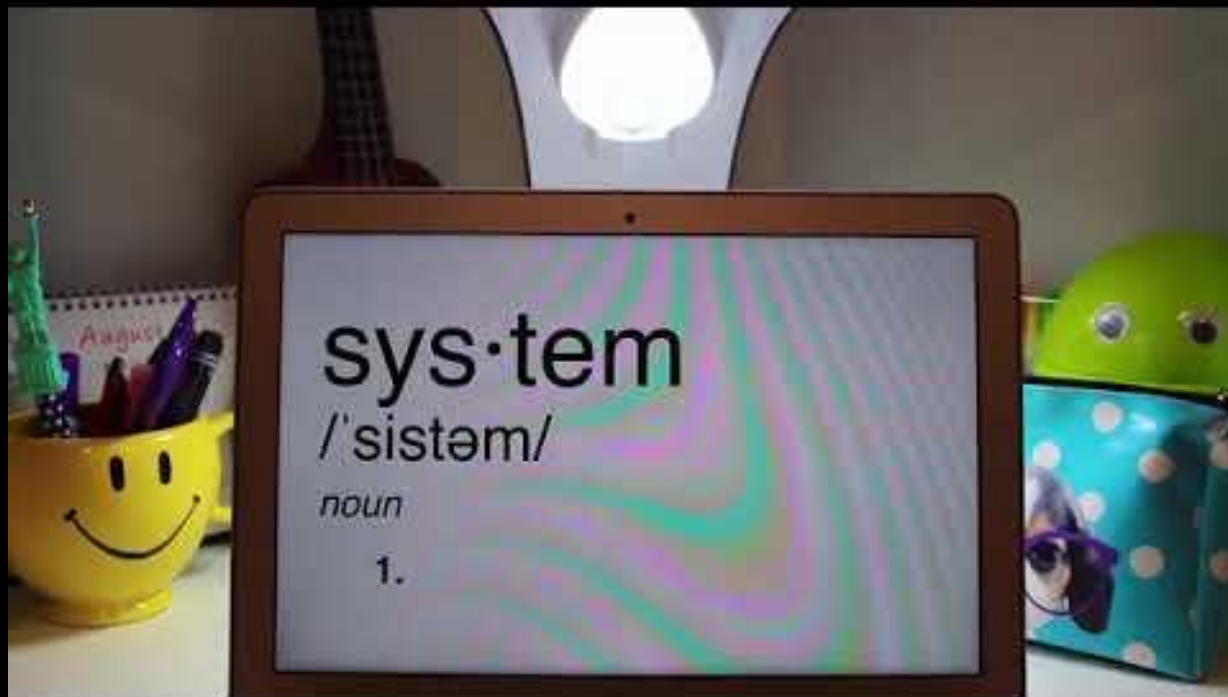
- **Introducing Planetary Geology:** Students learn that planetary geologists are interested in evidence that a planet that is not habitable now could have been habitable in the past.
- **Introducing the Rocky Planets:** Students learn about how the rocky planets in our solar system are similar to Earth and that Earth is a system that can be thought of as four spheres.
- **Observe:** Students compare the geospheres and hydrospheres of Earth and Mars, and then are introduced to a real planetary geologist who is using what she knows about Earth to learn about Mars.

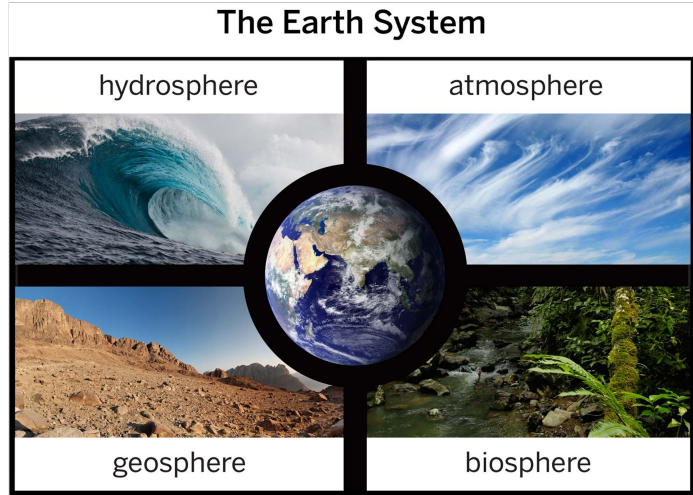


When scientists think of Earth as a whole, they think of it as a **system**. A system is a set of interacting parts forming a complex whole. The Earth system is made of parts called **spheres**.

We'll watch a student-made video that was created for other students.

The video explains the answer to the question
“How is Earth a **system**?”





What ideas and questions do you have about the **Earth system**?

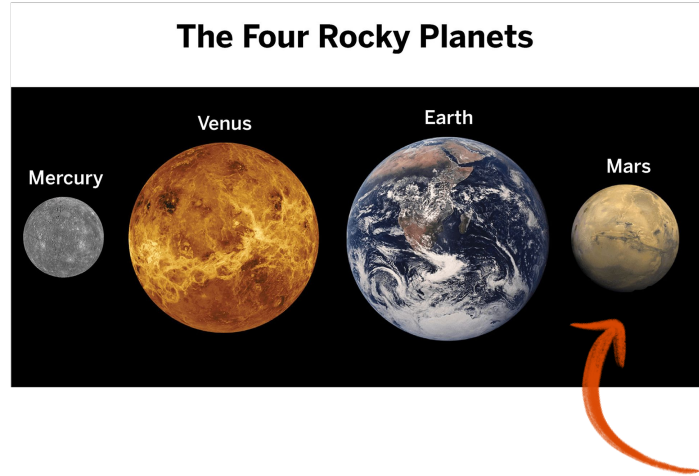
What are some other examples of systems?

Examples of systems include the solar system, an ecosystem, a machine, and the circulatory system.



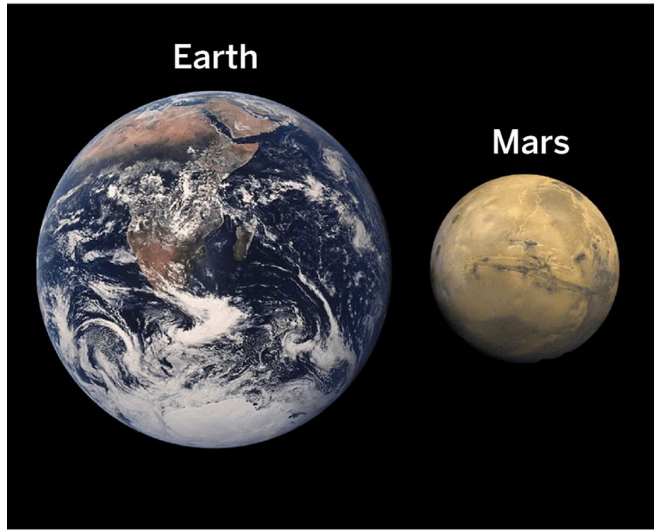
system

a set of interacting parts forming a complex whole



Finding a planet that is **similar** to Earth can give us an idea about where to search for evidence of **habitability**.

Because it is the closest **rocky planet** to earth, we will focus on Mars.



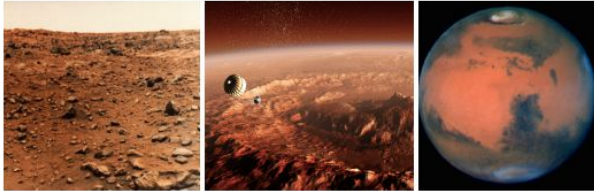
On the following slides, you will observe some pictures of cards in order to compare two parts of the Mars system and the Earth system - the **geosphere** and the **hydrosphere**.

Geosphere of Earth



The geosphere is the rocky part of Earth, from the soil at its surface to its iron core. Earth's geosphere shows evidence of Earth's past. Earthquakes, volcanic eruptions, flowing rivers, and ocean waves all leave evidence of how Earth's surface has been shaped into the landscape we see today.

Geosphere of Mars



The rocky surface of Mars shows evidence of its past. Where space rocks have hit the surface, they have left round holes called craters. Huge volcanic landforms, including the biggest volcano in our solar system, have been built up from past eruptions that flow out of the volcanic vents. Scientists study the rocks in the geosphere for any evidence of past or current liquid water.

The geosphere is the solid part of a rocky planet. Read these cards and think about this question.



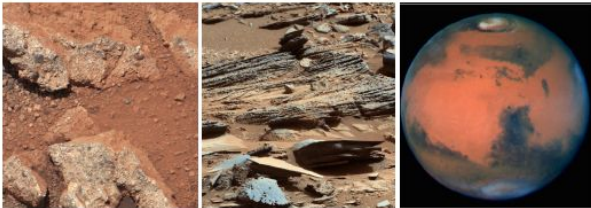
What are some **similarities** and **differences** between the **geospheres** of Mars and Earth?

Hydrosphere of Earth



Earth's hydrosphere is the water that makes up Earth's ocean, lakes, rivers, and ice caps. Within the hydrosphere, liquid water flows through streams and rivers down to lakes and the ocean. As water flows, it wears down rock and changes the shape of the land. Earth is the only planet we know of with bodies of liquid water on its surface.

Hydrosphere of Mars

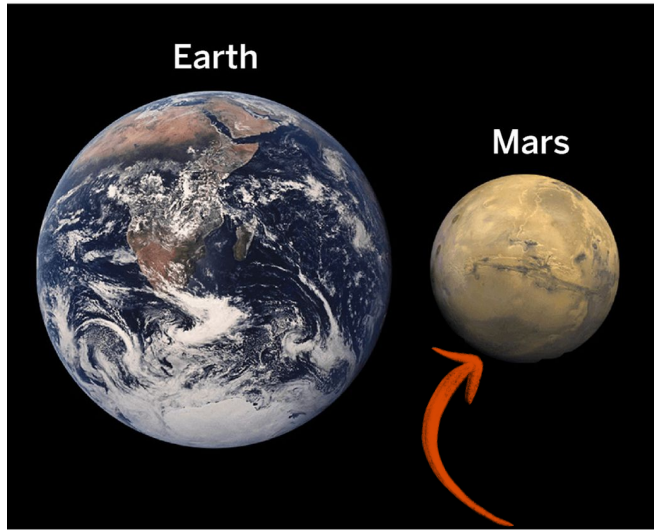


Mars does not currently have bodies of liquid water on its surface, although it does have frozen water ice at its poles. One of the most important areas of Mars research is the search for evidence of past liquid water. Scientists search for this evidence in Mars's rock formations.

The hydrosphere is all the liquid water and ice on a planet. Read these cards and think about this question.



What are some **similarities** and **differences** between the **hydrospheres** of Mars and Earth?



Mars is a good place to look for evidence of habitability in the past.

Did you notice that there are some similarities between the geospheres and hydrospheres of Mars and Earth? There is evidence that **volcanoes** once erupted on Mars, and it also has **frozen water** at its poles.

We already have some idea of what planetary geologists do. Now, we'll hear from a real **planetary geologist** who is using what she knows about Earth to learn about Mars.

In this video, you will meet Dr. Lauren Edgar, a real scientist. Just like her, you will get to analyze real data collected by NASA.

As you are watching the video, listen for answers to these questions.



What are the **two things** that are needed for a planet to be **habitable**, according to the video?

How does Dr. Edgar use what she knows about Earth to learn about Mars?





Dr. Edgar is looking for **evidence** that there was liquid water in the past on Mars. She gathers evidence on Earth of how water interacts with rock and **compares** that to what she can observe on Mars.

Scientists who study the **rocky planets**, including geologists like Dr. Edgar, often compare the spheres of other rocky planets to those of Earth—the rocky planet that we know the best.

The **key concept** on the next slide provides a summary of some of the important ideas we learned in this lesson.

1. Earth, Mars, and other rocky planets can be thought of as systems. These systems are made up of interacting spheres that can include the geosphere, atmosphere, hydrosphere, and biosphere.

End of @Home Lesson



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@Home Lesson 1

Adapted from: Amplify Science *Geology on Mars* Lesson 1.1 and 1.2

Key Activities

- **Introducing Planetary Geology:** Students learn that planetary geologists are interested in evidence that a planet that is not habitable now could have been habitable in the past.
- **Introducing the Rocky Planets:** Students learn about how the rocky planets in our solar system are similar to Earth and that Earth is a system that can be thought of as four spheres.
- **Observe:** Students compare the geospheres and hydrospheres of Earth and Mars, and then are introduced to a real planetary geologist who is using what she knows about Earth to learn

Ideas for synchronous or in-person instruction

While meeting, show the “Meet a Planetary Geologist” video and discuss (as in *Geology on Mars*, Lesson 1.1, Activity T and Activity 4). You could also choose to show and discuss the “Earth System” video (as in *Geology on Mars*, Lesson 1.2, Activity T).

Suggestions for Online Synchronous Time



Online synchronous time

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

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

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

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

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



Day 1: @Home Lesson 1			
Minutes for science: <u>15 min</u>		Minutes for science: _____	
Instructional format: <input checked="" type="checkbox"/> Asynchronous <input type="checkbox"/> Synchronous		Instructional format: <input type="checkbox"/> Asynchronous <input checked="" type="checkbox"/> Synchronous	
Lesson or part of lesson: @Home Lesson 1, video & talk prework (slides 1-10)		Lesson or part of lesson:	
Mode of instruction: <input checked="" type="checkbox"/> Preview <input type="checkbox"/> Review <input type="checkbox"/> Teach full lesson live <input type="checkbox"/> Teach using synchronous suggestions <input checked="" type="checkbox"/> Students work independently using: <input type="checkbox"/> @Home Packet <input checked="" type="checkbox"/> @Home Slides and @Home Student Sheets <input type="checkbox"/> @Home Videos		Mode of instruction: <input type="checkbox"/> Preview <input type="checkbox"/> Review <input type="checkbox"/> Teach full lesson live <input type="checkbox"/> Teach using synchronous suggestions <input type="checkbox"/> Students work independently using: <input type="checkbox"/> @Home Packet <input type="checkbox"/> @Home Slides and @Home Student Sheets <input type="checkbox"/> @Home Videos	
Students will... View slides 1-10 and write their initial ideas of what makes a place habitable and add to shared jamboard.	Teacher will... assign slides 1-10 in Schoology and provide direction for students to jot down their ideas when they get to slide 5. And share their ideas on the shared jamboard.	Students will...	Teacher will...



Day 1: @Home Lesson 1			
Minutes for science: 15 min		Minutes for science: 30 min	
Instructional format: <input checked="" type="checkbox"/> Asynchronous <input type="checkbox"/> Synchronous		Instructional format: <input type="checkbox"/> Asynchronous <input checked="" type="checkbox"/> Synchronous	
Lesson or part of lesson: @Home Lesson 1, video & talk prework (slides 1-15)		Lesson or part of lesson: @Home Lesson 1, talk & do (slides 11-32)	
Mode of instruction: <input checked="" type="checkbox"/> Preview <input type="checkbox"/> Review <input type="checkbox"/> Teach full lesson live <input type="checkbox"/> Teach using synchronous suggestions <input checked="" type="checkbox"/> Students work independently using: <input type="checkbox"/> @Home Packet <input checked="" type="checkbox"/> @Home Slides and @Home Student Sheets <input type="checkbox"/> @Home Videos		Mode of instruction: <input type="checkbox"/> Preview <input type="checkbox"/> Review <input type="checkbox"/> Teach full lesson live <input checked="" type="checkbox"/> Teach using synchronous suggestions <input type="checkbox"/> Students work independently using: <input type="checkbox"/> @Home Packet <input type="checkbox"/> @Home Slides and @Home Student Sheets <input type="checkbox"/> @Home Videos	
Students will... view the video and jot down their initial ideas about the pod on slide 9 and their initial ideas about the claims on slide 14. Students will also be asked to gather objects for an experiment.	Teacher will... assign slides 1-15 in Schoology and provide direction for students to jot down their ideas when they get to slides 9 and 14 to share during the next lesson.	Students will... engage in a discussion about their initial ideas as well as their observations of geospheres and hydrospheres.	Teacher will... lead students through the lesson activities using slides 11-32.





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 jot notes about their initial ideas about what makes a place habitable.

Synchronous: record observations of geospheres and hydrospheres.

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 put their written notes on the Jamboard to discuss during the synchronous lesson.

Synchronous: students will turn in their written ideas about their observations of the geospheres and hydrospheres

Homework: Students will go to the standard curriculum and complete lesson 1.1 activity 4 and hand in their ideas on the unit question.

Some Types of Written Work in Amplify Science

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

Completing Written Work

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

Submitting Written Work

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

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

Glossary

atmosphere: the mixture of gases surrounding a planet

- I notice/observe ...
- I think this is important because ...
- I wonder ...

comparar: notar en qué son iguales o diferentes dos o más cosas

evidence: information about the natural world that is used to support or go against (refute) a claim
evidencia: información sobre el mundo natural que se utiliza para respaldar o rechazar (refutar) una afirmación

geologic process: an event or series of events that causes changes in the geosphere, such as flowing water or flowing lava

in the lesson(s)	Some Types of Written Work in Amplify Science	
ce. Make notes below. al ideas he claims. the	<ul style="list-style-type: none"> • Daily written reflections • Homework tasks • Investigation notebook pages • Written explanations (typically at the end of Chapter) • Diagrams • Recording pages for Sim uses, investigations, etc 	
	Completing Written Work	Submitting Written Work
idance on how tes to the discuss n the	<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • 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:

- Make available the @Home Glossary in the @Home Student Packet to support discussions and writing.
- Use sentence frames to support students in discussion of observations.
- Leverage primary language for discussions (cognates)
- Consider creating, in collaboration with the students, specific norms for discussions

Extension:

- Ask students to come up with everyday examples of Earth's spheres interacting.

Planning Resource

pages 9 & 10

Day 2: _____		Day 3: _____	
Minutes for science: _____		Minutes for science: _____	
Instructional format: <input type="checkbox"/> Asynchronous <input type="checkbox"/> Synchronous		Instructional format: <input type="checkbox"/> Asynchronous <input type="checkbox"/> Synchronous	
Lesson or part of lesson:		Lesson or part of lesson:	
Mode of instruction: <input type="checkbox"/> Preview <input type="checkbox"/> Review <input type="checkbox"/> Teach full lesson live <input type="checkbox"/> Teach using synchronous suggestions <input type="checkbox"/> Students work independently using: <input type="checkbox"/> @Home Packet <input type="checkbox"/> @Home Slides and @Home Student Sheets <input type="checkbox"/> @Home Videos		Mode of instruction: <input type="checkbox"/> Preview <input type="checkbox"/> Review <input type="checkbox"/> Teach full lesson live <input type="checkbox"/> Teach using synchronous suggestions <input type="checkbox"/> Students work independently using: <input type="checkbox"/> @Home Packet <input type="checkbox"/> @Home Slides and @Home Student Sheets <input type="checkbox"/> @Home Videos	
Students will...	Teacher will...	Students will...	Teacher will...

Types of Written Work in Amplify Science	
ten reflections rk tasks ion notebook pages explanations (typically at the end of Chapter) g pages for Sim uses, investigations, etc	
Written Work	Submitting Written Work
er and pencil lude prompts ent platform on Notebook leo or audio file vering prompt reated digital oogle , etc)	<ul style="list-style-type: none">• 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.)	



Questions?



Plan for the day

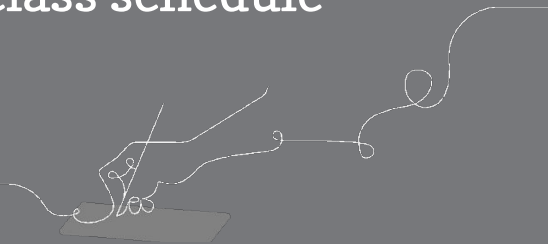
- Framing the day
 - Amplify Science Refresher
 - Instructional Materials
 - Launch Unit
- Unit Internalization
- Planning to teach
 - Collecting evidence of student learning to meet diverse learner needs
- **Reflection and closing**



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?

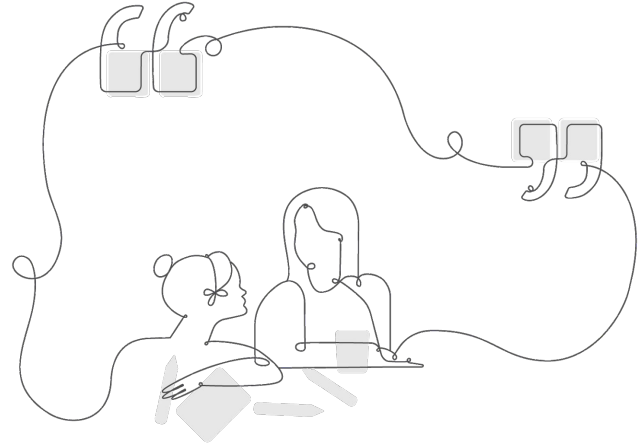
e



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

The image shows a screenshot of the Amplify Science Program Hub interface. On the left is a sidebar menu with a hamburger icon circled in orange. Below it are links for 'Hello Teacher Considine', 'Log Out', and 'Go To My Account'. A 'Classroom Language Settings' button is also present. Further down are icons for 'LA Science Program Guide', 'Program Hub' (highlighted with an orange arrow), 'Science Program Guide', 'FLORIDA EDITION Standards Map', and 'Help'. The main content area features a large image of a microorganism with the text '11 Lessons Microbiome' and the 'FUTURA FOOD ENGINEERING' logo. Overlaid on the right is a 'Professional Learning Resources' panel, which contains a dropdown arrow and a description: 'This section will provide you with the knowledge and skills you need to start teaching with Amplify Science. You'll find **self-study** professional learning videos and resources.' Below this are four resource cards: 'Getting started' (highlighted with an orange oval), 'Assessment', 'Additional Support', 'Planning', and 'Unit Orientation'. Each card has an icon and a brief description. The footer includes the copyright notice '© 2020 Amplify Education, Inc.' and the URL 'https://www.amplify.com/floridastandards'.

6

Professional Learning Resources ▾

This section will provide you with the knowledge and skills you need to start teaching with Amplify Science. You'll find **self-study** professional learning videos and resources.

- Getting started**
- Assessment**
Student Assessments and Work
- Additional Support**
- Planning**
Videos and resources to help you plan
- Unit Orientation**

11 Lessons
Microbiome

FUTURA
FOOD ENGINEERING

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<https://www.amplify.com/floridastandards>

Additional Amplify resources

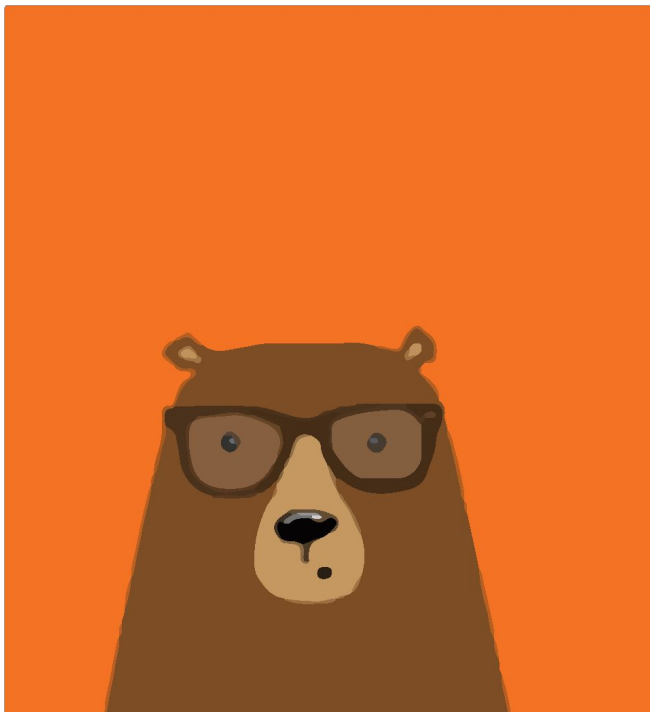


Caregivers site

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:

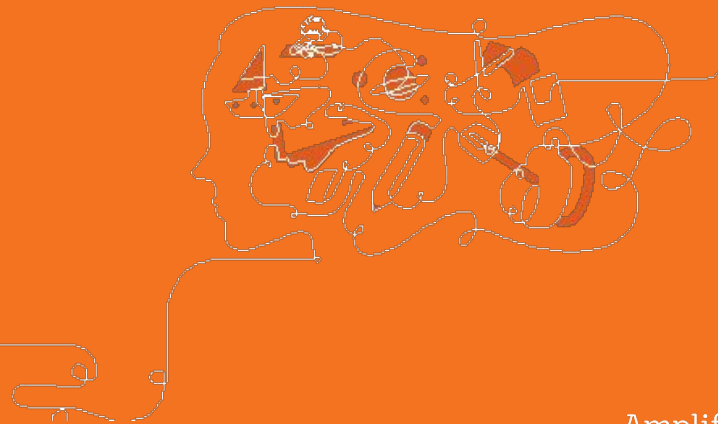
- Identify yourself as an Amplify Science user.
- Note the unit you are teaching.
- Note the type of device you are using (Chromebook, iPad, Windows, laptop).
- Note the web browser you are using (Chrome or Safari).
- Include a screenshot of the problem, if possible.
- Copy your district or site IT contact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

Please provide us feedback!

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

Presenter names :

Date:



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