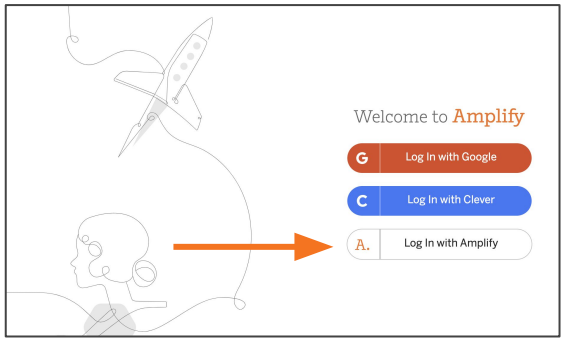
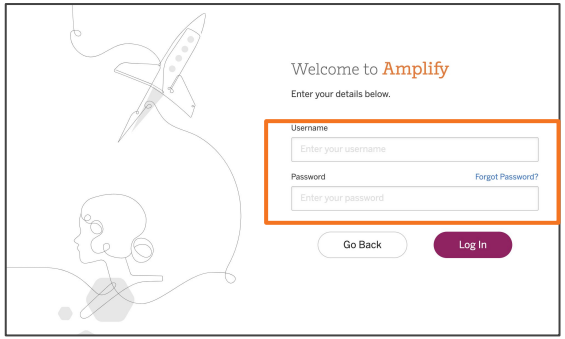
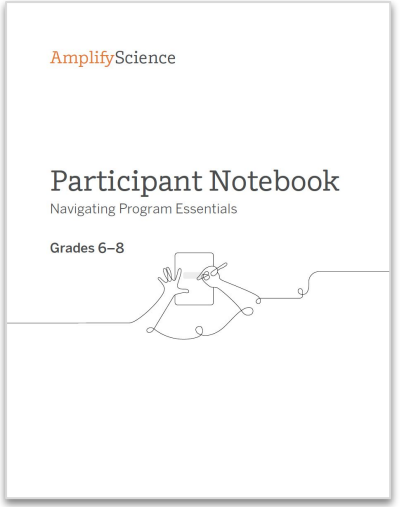
Welcome to Amplify Science!

Do Now: Login and open your digital participant packet

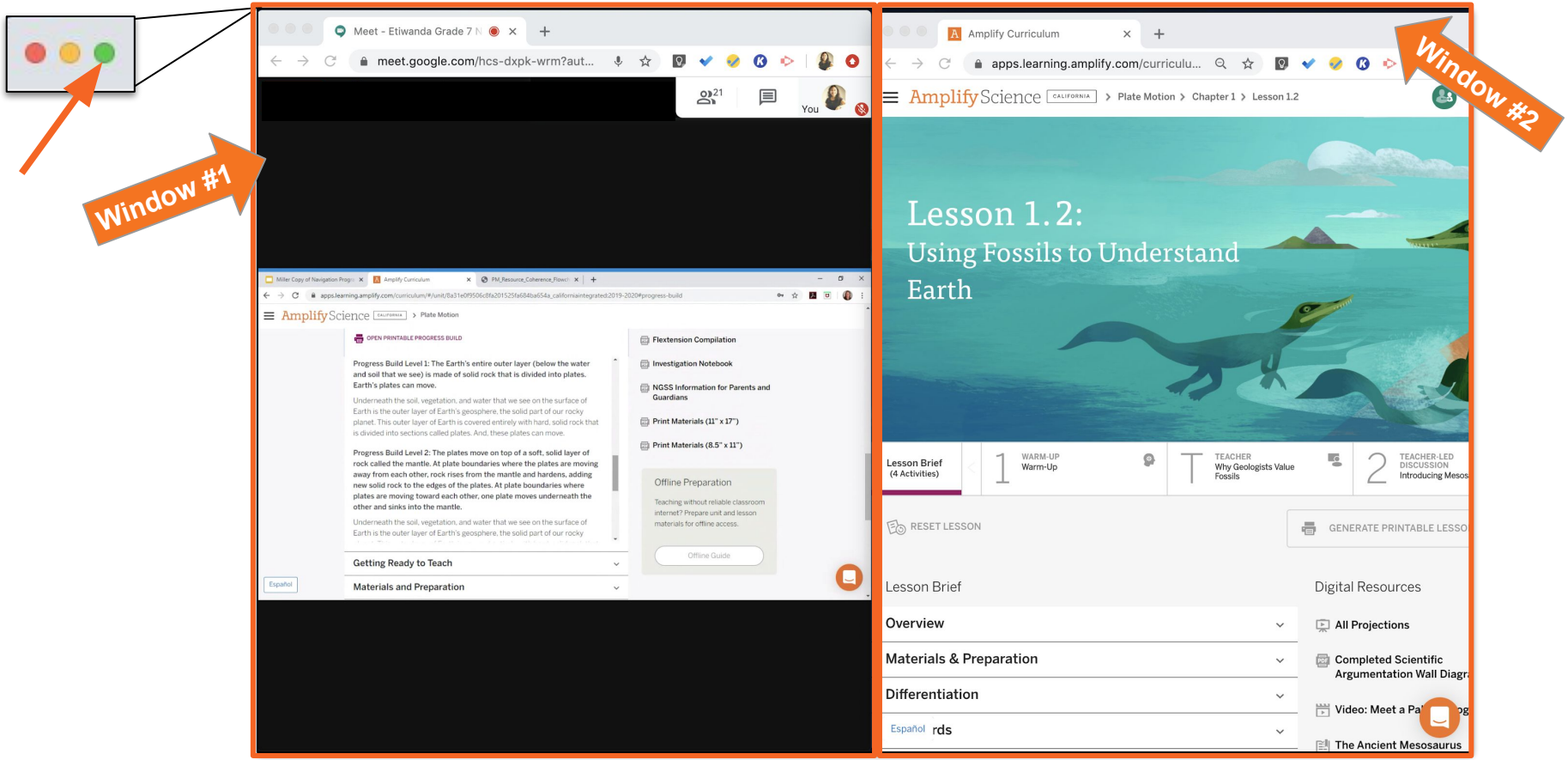




1. Go to **learning.amplify.com**
2. Select **Log in with Amplify**
3. Enter teacher demo account credentials
   - nycdoe_middle@tryamplify.net
   - Password: AmplifyNumber1
4. Explore as we wait to begin



Use two windows for today's webinar

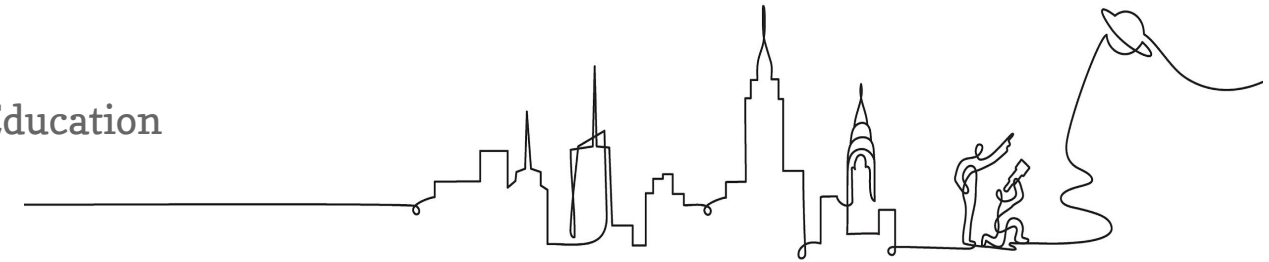


Amplify Science
New York City

Introduction to Amplify Science
NYC Summer Institute, Day 2

Grade 7: Microbiome and Metabolism

New York City Department of Education
July 22, 2020
Presented by



Remote Professional Learning Norms

Orient yourself to the platform

- *"Where's the chat box? Where's the mute button?"*

Mute your microphone unless sharing with the group

Use the chat box for posting questions or responses

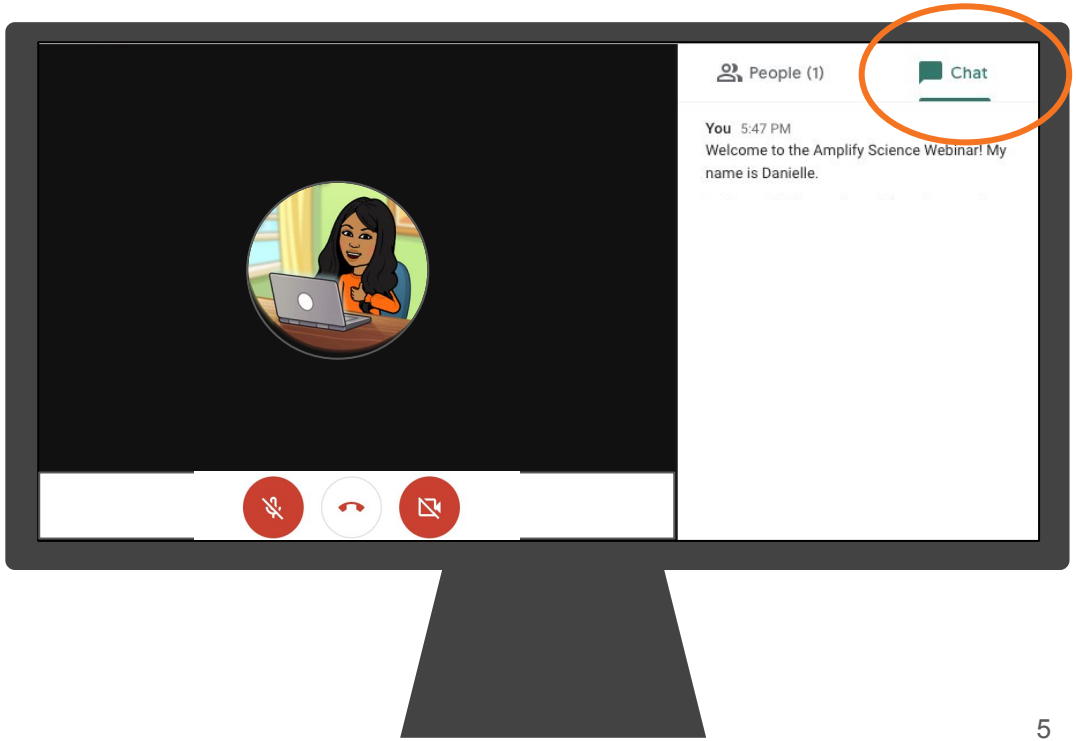
Have a note-catcher

Engage at your comfort level - chat, ask questions, discuss.

Culture Building

Share your answers in the chat.

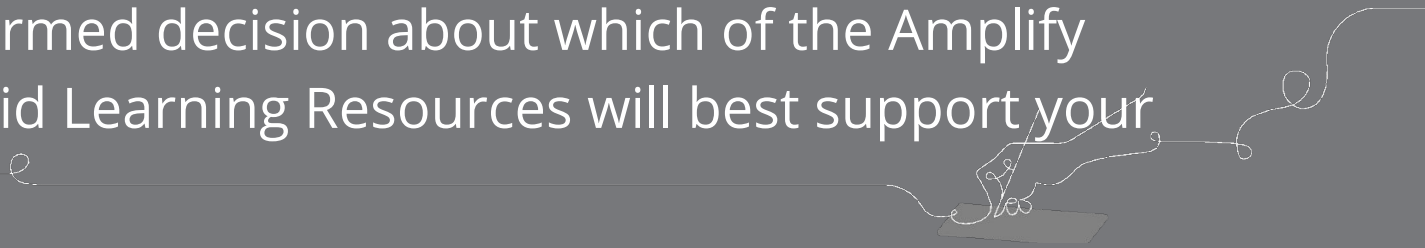
- **Question 1:** What did you learn about yesterday that made you excited to teach Amplify Science?
- **Question 2:** What are you looking forward to learning more about today?



Overarching goals

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

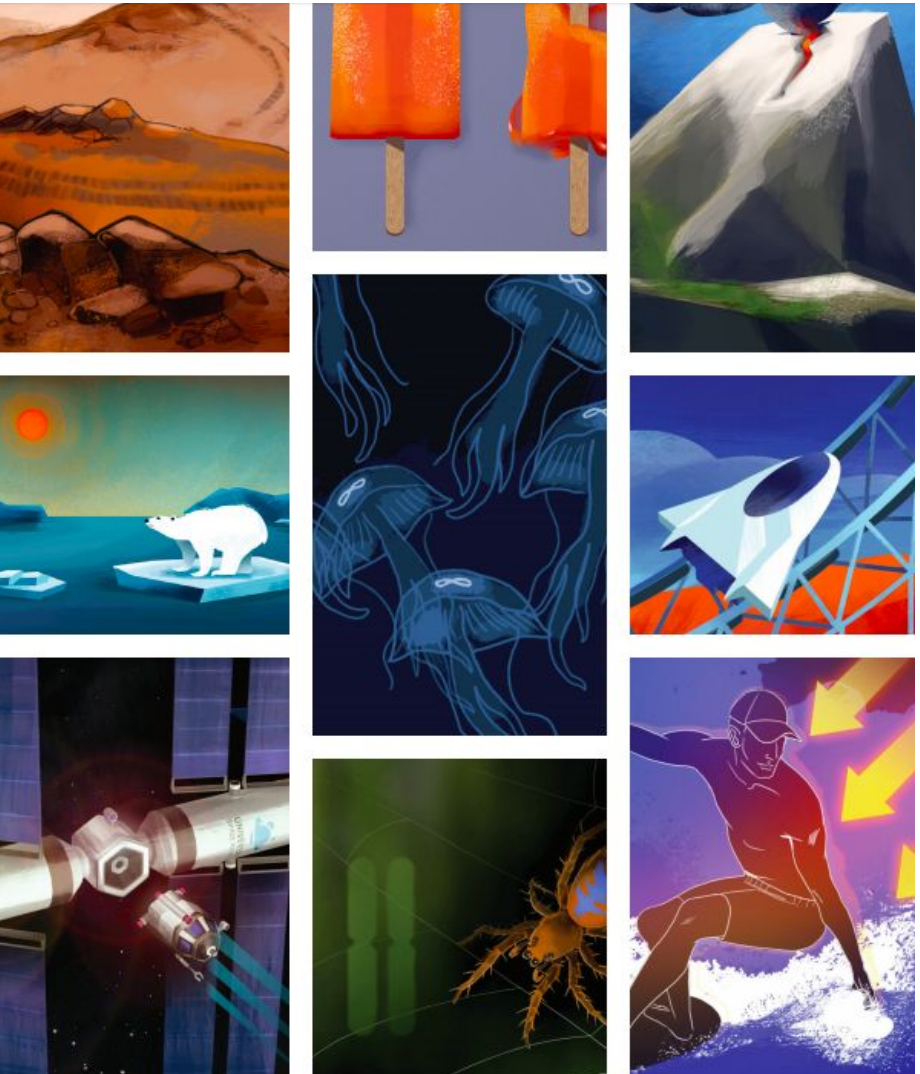
- Navigate the Amplify Science curriculum.
- Understand the program's multimodal approach and instructional materials.
- Apply program essentials to prepare to teach an Amplify Science unit.
- Make an informed decision about which of the Amplify Science Hybrid Learning Resources will best support your students.



Day 2 Objectives

By the end of the session you will be able to:

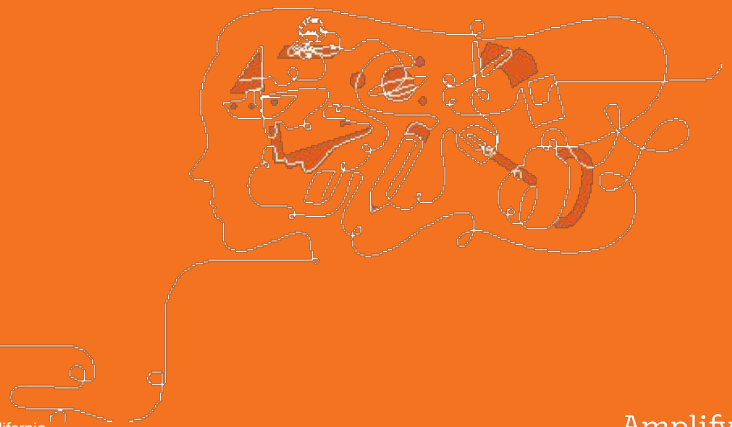
- Understand the purpose of Launch Units.
- Apply program essentials to prepare to teach an Amplify Science Launch Unit.
- Make an informed decision about which of the Amplify Science Hybrid Learning Resources will best support your students.



Plan for the day

- Experiencing the Launch Unit
- Launch Unit Components
- Planning to Teach
- Remote/Hybrid Resources
- Closing and reflection

Experiencing the Launch Unit

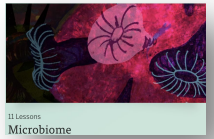


Middle School Curriculum New York City Edition

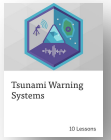
Grade 6

- Launch: Harnessing Human Energy
- Thermal Energy
- Populations and Resources
- Matter and Energy in Ecosystems
- Weather Patterns
- Ocean, Atmosphere,and Climate
- Earth's Changing Climate

Grade 7



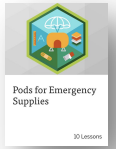
- Launch: Microbiome
- Metabolism
- Phase Change
- Chemical Reactions
- Plate Motion
- Engineering Internship: Plate Motion



- Rock Transformations
- Engineering Internship: Earth's Changing Climate

Grade 8

- Launch: Geology on Mars
- Earth, Moon, and Sun
- Force and Motion
- Engineering Internship: Force and Motion



- Magnetic Fields
- Light Waves
- Traits and Reproduction
- Natural Selection
- Evolutionary History

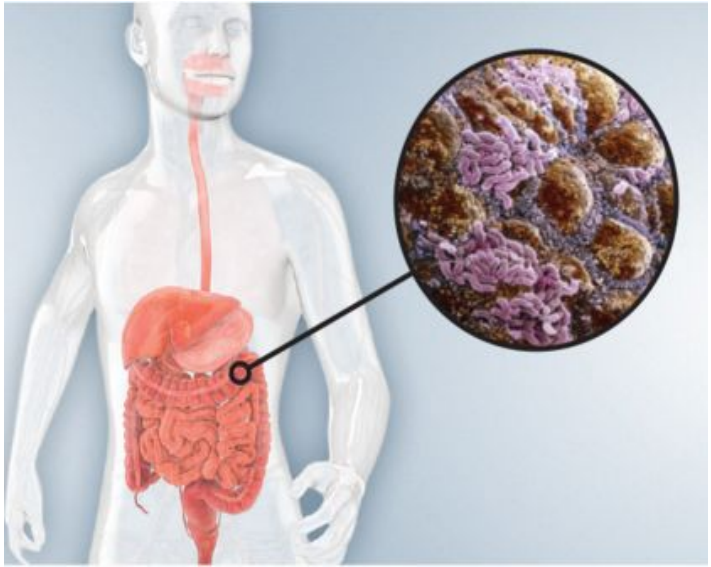
What is a launch unit?

- First unit of the year
- Interesting, immersive, and often surprising problem-context
- 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**

Launch unit: Microbiome


RN
Vote Robert Nesmith

Launch Unit: Microbiome



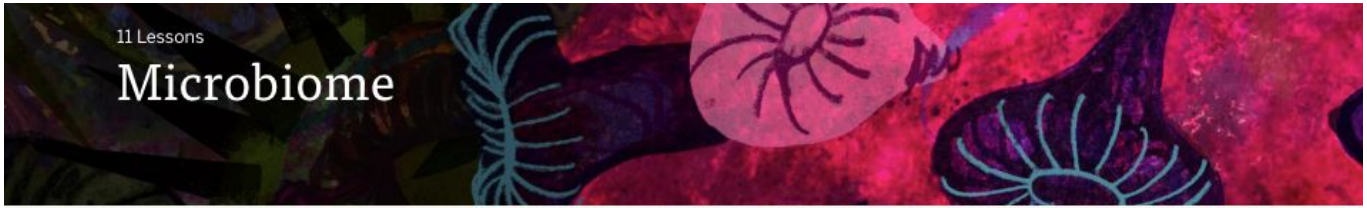
Problem: The scientific community is interested in further investigating the human microbiome as a result of developments made in a treatment called fecal transplant.

Role: Student Researchers

Students consider living things at multiple scales and examine data in order to figure out why a fecal transplant cured a patient suffering from a *C. difficile* infection.

Unit Question

How can having 100 trillion microorganisms on and in the human body keep us healthy?



JUMP DOWN TO UNIT GUIDE

GENERATE PRINTABLE TEACHER'S GUIDE

Chapter 1: Microorganisms On and In the Human Body

3 Lessons

Chapter 1 Question

How small are the microorganisms that live on and in the human body?

- Scale is introduced
  - some things are too small to see
- Microorganisms live on and in the body

Amplify.

Chapter 2: Arguing for the Benefits of Fecal Transplants

JUMP DOWN TO CHAPTER OVERVIEW

Lesson 2.1: Reading "The Human Microbiome"

Lesson 2.2: Beginning a Case Study of Patient 23

Lesson 2.3: Investigating Antibiotics

Lesson 2.4: Analyzing Experiments with Mice

Lesson 2.5: Analyzing Evidence About Fecal Transplants

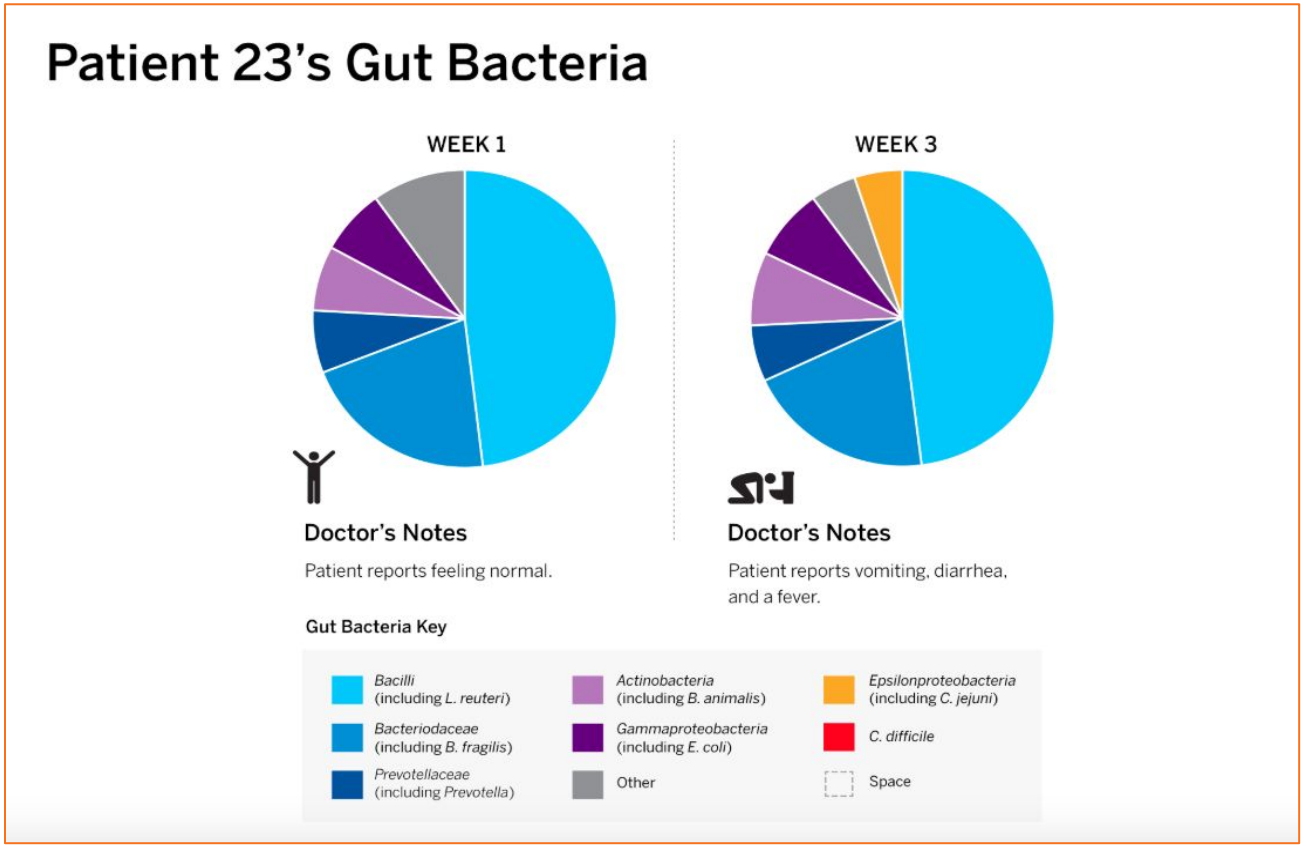
Lesson 2.6: Evaluating Evidence About Bacteria

Lesson 2.7: Writing a Final Argument

Lesson 2.8: End-of-Unit Assessment

Chapter 2 Question

How can fecal transplants cure patients infected with harmful bacteria?



- *follow progress over a 9-week period*
- *symptoms change with various treatments*
- *students analyze this data in lesson 2.2*

In lesson 2.2 students also read this article. They learn that C. Jejuni is a bacteria that causes food poisoning.

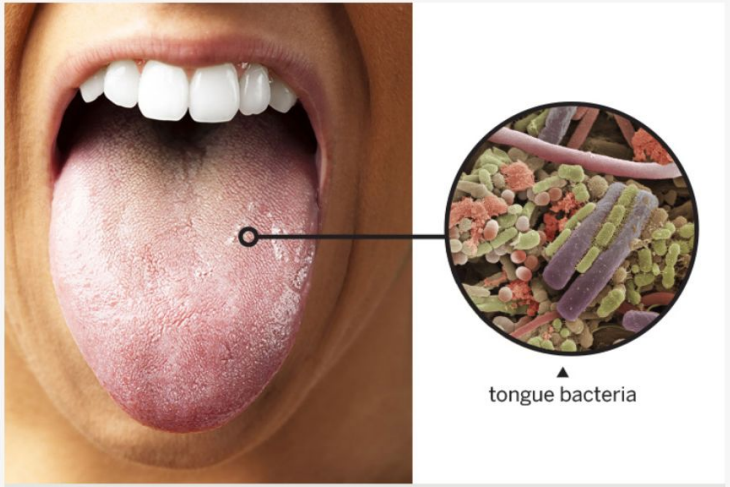
Students start to develop an understanding that there are both "good" and "not so good" bacteria that can live in the human gut microbiome, and that different bacteria affect the body in different ways.

The Human Microbiome

A World Inside You

There's a world filled with strange creatures. The creatures of this world are invisible, and they're not human. Aliens sometimes threaten to invade the world these creatures call home.

This world is not a far-off planet: it's your body! The creatures are called microorganisms, and your body is home to more than 100 trillion of them. Microorganisms live on your skin, in your gut, in your nose and mouth, and pretty much everywhere else on and in your body.



Your tongue is covered with bacteria like the ones in this photo, which was taken through a microscope. Bacteria are some of the smallest microorganisms that live in and on your body: these bacteria are actually

Classroom Wall

Unit Question
How can having 100 trillion microorganisms on and in the human body keep us healthy?

Chapter 1 Question
How small are the microorganisms that live on and in the human body?

Investigation Question
How do antibiotics affect the microbiome?

Key Concepts

1. Many organisms are microscopic – so small that they cannot be seen with the naked eye.
2. All living things are made of cells.
3. Almost all cells are microscopic.
4. Even though they are both too small to see, cells are much bigger than molecules.

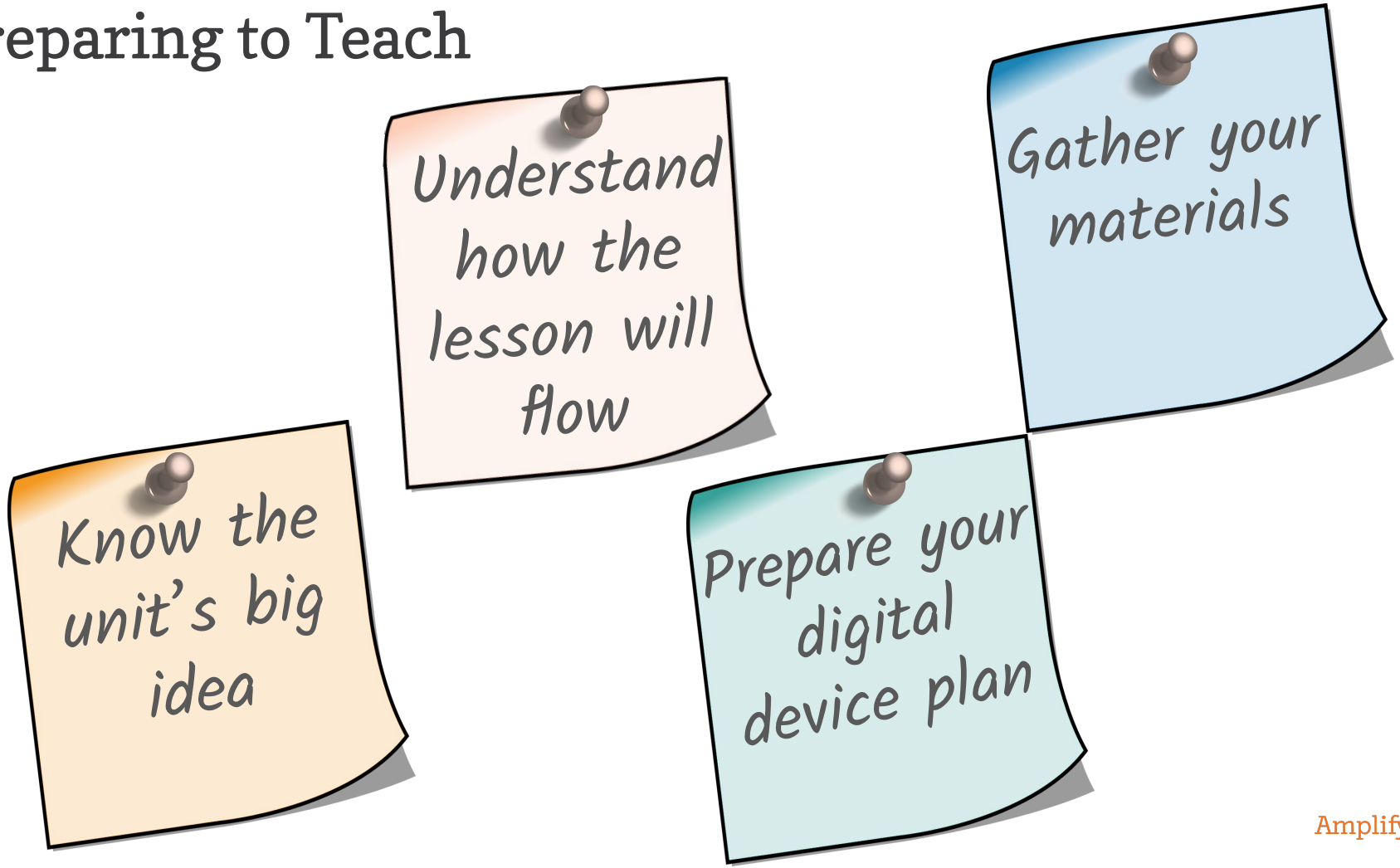
Vocabulary

- **organism**
- **microorganism**
- **scale**
- **microscopic**
- **cells**

Model Lesson

Lesson 2.3:
Investigating Antibiotics

Preparing to Teach



Microbiome

Lesson 2.3: Investigating Antibiotics

AmplifyScience

5 MIN

Activity 1

Warm-Up

Warm-Up

1. Read the arguments below.

2. Then, answer the question about the arguments.

Argument One: Patient 23 felt sick during week 3 because he was infected with the *C. jejuni* bacteria. From "The Human Microbiome" article, I know that "this kind of *C. jejuni* infection can cause diarrhea, vomiting, and fever—all the symptoms of food poisoning." These symptoms match the doctor's note for Patient 23 for week 3. When Patient 23 felt healthy during week 1, the *C. jejuni* bacteria was not present in his gut microbiome. In week 3, when he felt sick, *C. jejuni*

These two arguments both answer the question *Why did Patient 23 feel sick during week 3?*

Which of these arguments is more convincing? Explain your thinking below.

10 MIN

Activity 2

Introducing Argumentation

Warm-Up

Argument One: Patient 23 felt sick during week 3 because he was infected with the *C. jejuni* bacteria. From "The Human Microbiome" article, I know that "this kind of *C. jejuni* infection can cause diarrhea, vomiting, and fever—all the symptoms of food poisoning." These symptoms match the doctor's note for Patient 23 for week 3. When Patient 23 felt healthy during week 1, the *C. jejuni* bacteria was not present in his gut microbiome. In week 3, when he felt sick, *C. jejuni* was present. Therefore, *C. jejuni* is probably the cause of his sickness.

Argument Two: Patient 23 felt sick during week 3 because he was infected with the *C. jejuni* bacteria. *C. jejuni* is very bad for you. He probably ate something spoiled. My sister got food poisoning once.

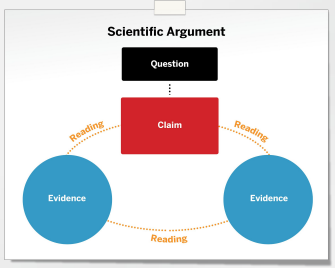
Which argument from the Warm-Up did you decide was **stronger**, and why?

Scientists ask questions and make observations. Then, when they think they have an idea about how something works, they make an argument to support that idea.

Scientific argumentation is the way that scientists communicate, evaluate, and revise their explanations about the natural world.

Scientific Argumentation

The purpose of scientific argument is to convince others, using evidence and reasoning.



A scientific argument . . .

- begins with a question.
- has a claim that proposes an answer to the question.
- has evidence that supports the claim.
- clearly explains how the evidence supports the claim (reasoning).

Argumentation Sentence Starters

- I think this evidence supports this claim because . . .
- I don't think this evidence supports this claim because . . .
- I agree because . . .
- I disagree because . . .
- Why do you think that?

Evaluating Evidence

Scientists use relevant evidence to support a claim.

The purpose of scientific argument is to convince others, using evidence and reasoning.

How do you use **argumentation** in your everyday life?

A scientific argument...

- begins with a question.

Question: Why did Patient 23 feel sick during week 3?

Question: Why did the plants on one side of the mountain survive, while the plants on the other side died?

Question: What is the explanation for why so many people became sick in one city?

A scientific argument...

- begins with a question.
- has a claim that proposes an answer to the question.

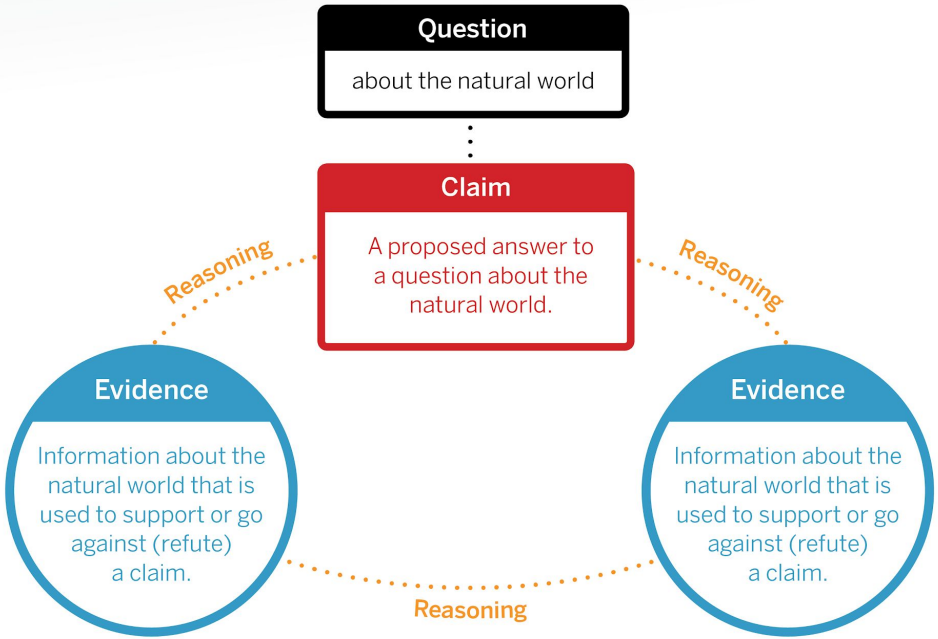
Question: Why did Patient 23 feel sick during week 3?

Claim: Patient 23 felt sick during week 3 because he was infected with the *C. jejuni* bacteria.

A scientific argument...

- begins with a question.
- has a claim that proposes an answer to the question.
- has evidence that supports the claim.
- clearly explains how the evidence supports the claim (reasoning).

Scientific Argument



Microbiome—Scientific Argument Diagram—Lesson 2.3— AMP615585.23-MB

Vocabulary

claim

a proposed answer to a question about the natural world

Vocabulary

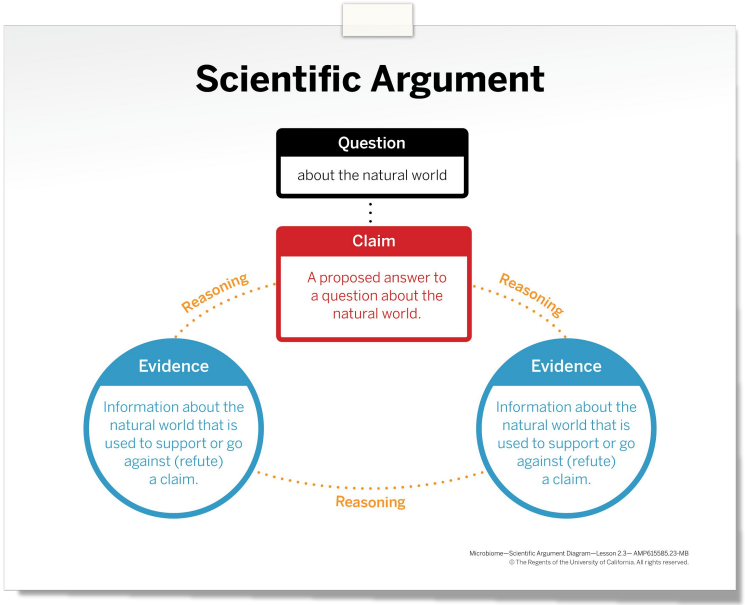
evidence

information about the natural world that is used to support a claim

Vocabulary

reasoning

the process of making clear how your evidence supports your claim



Let's take another look at the arguments from the Warm-Up.

Do these arguments have a **claim, evidence** that supports the claim, and **reasoning?**

Introducing Argumentation

Evaluating Arguments

These two arguments both answer the question *Why did Patient 23 feel sick during week 3?*

Which of these arguments is more convincing?

Argument One: Patient 23 felt sick during week 3 because he was infected with the *C. jejuni* bacteria. From "The Human Microbiome" article, I know that "this kind of *C. jejuni* infection can cause diarrhea, vomiting, and fever—all the symptoms of food poisoning." These symptoms match the doctor's note for Patient 23 for week 3. When Patient 23 felt healthy during week 1, the *C. jejuni* bacteria was not present in his gut microbiome. In week 3, when he felt sick, *C. jejuni* was present. Therefore, *C. jejuni* is probably the cause of his sickness.

Argument Two: Patient 23 felt sick during week 3 because he was infected with the *C. jejuni* bacteria. *C. jejuni* is very bad for you. He probably ate something spoiled. My sister got food poisoning once.

25 MIN

Activity 3

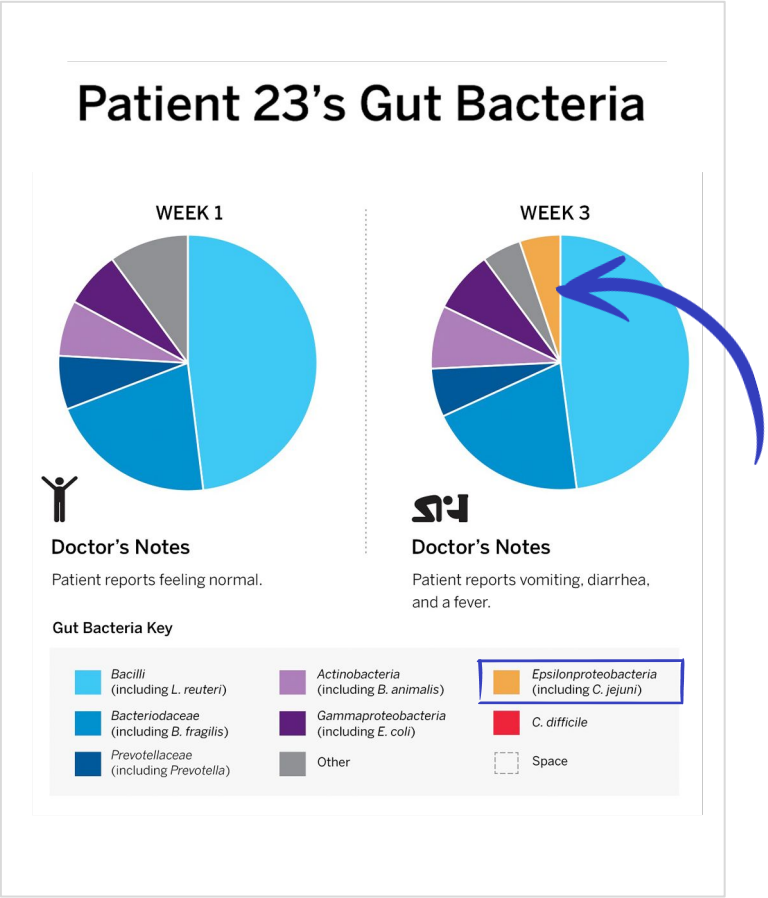
Evaluating Evidence About Antibiotics

Key Concept

7. A healthy microbiome has various helpful types of bacteria.

Key Concept

8. An infection of harmful bacteria in the human microbiome can make a person sick.



We have a lot of evidence that Patient 23 was **infected** with *C. jejuni* during week 3.

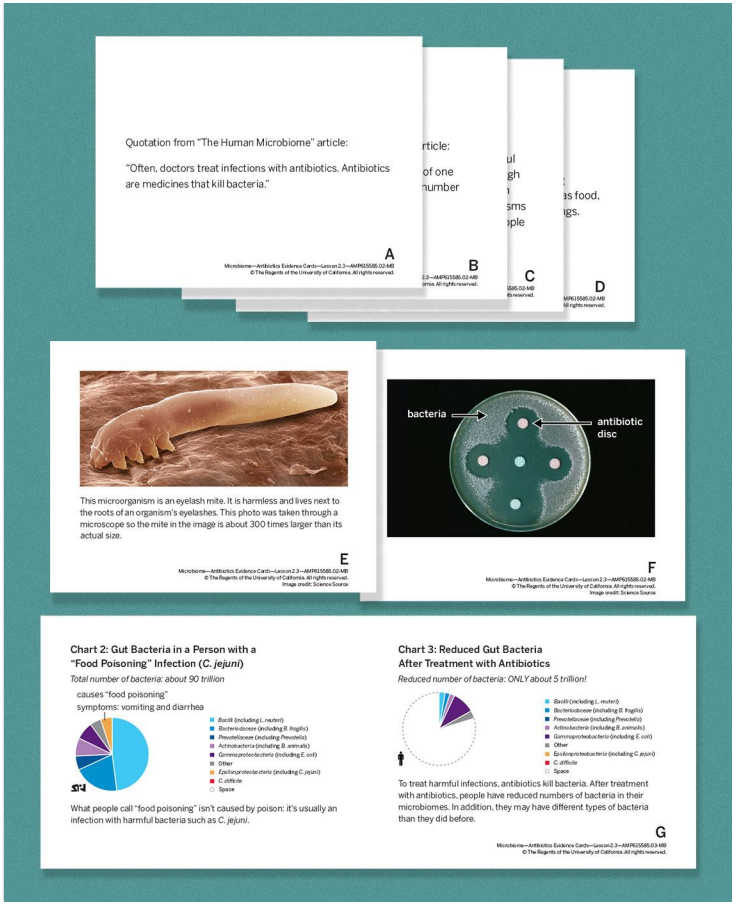
After week 3, the patient was given **antibiotics** to treat the infection.

Next, we will investigate this question:

Investigation Question:
How do antibiotics affect the microbiome?

Here is a possible claim that answers our Investigation Question.

Claim: Antibiotics cure infection by killing all types of bacteria in the body, including the harmful bacteria that cause the infection.

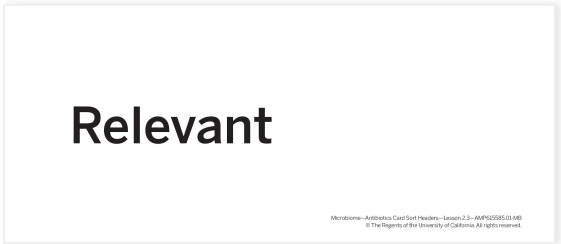


Now, we are going to look at some **evidence** to see if this claim is supported.

We will use these cards.

When scientists are making an argument, they evaluate evidence to see if it is **relevant** or **irrelevant** to the question they're investigating.

Let's think about some examples.



Claim:

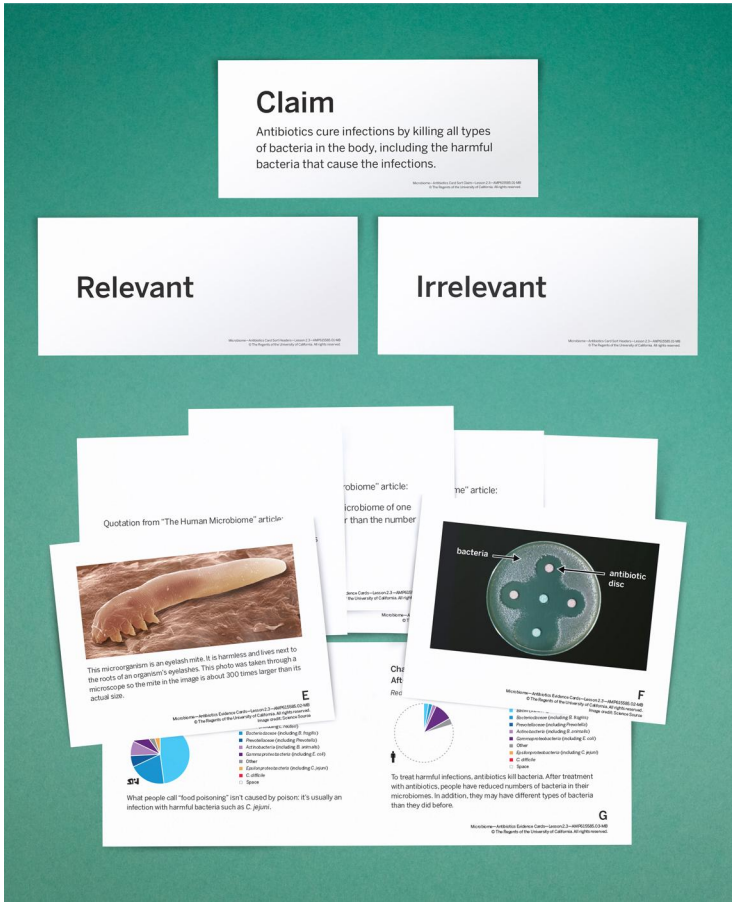
Antibiotics cure infections by killing all types of bacteria in the body, including the harmful bacteria that cause the infections.

Relevant or Irrelevant?

1. One patient, who used an antibiotic, found that the bacterial infection on her arm went away in five days.

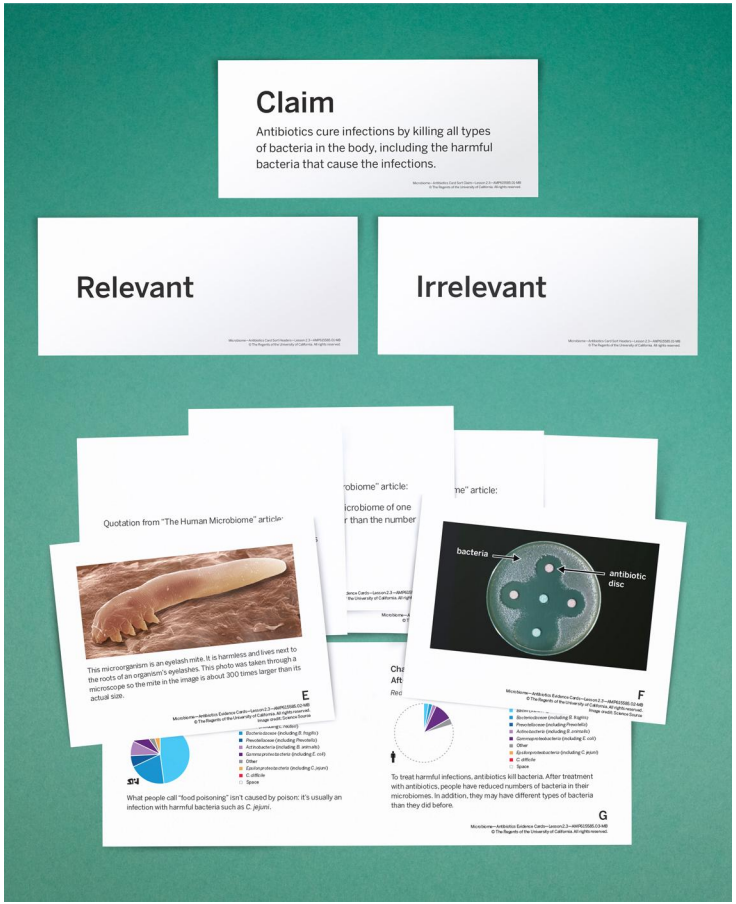
2. Bacteria can live on rocks.

3. When people exercise a lot they usually feel healthier.



You and a partner will work with a set of cards.

You'll put the **Claim** card at the top of the desk and the **Relevant** and **Irrelevant** headers beneath it, side by side.

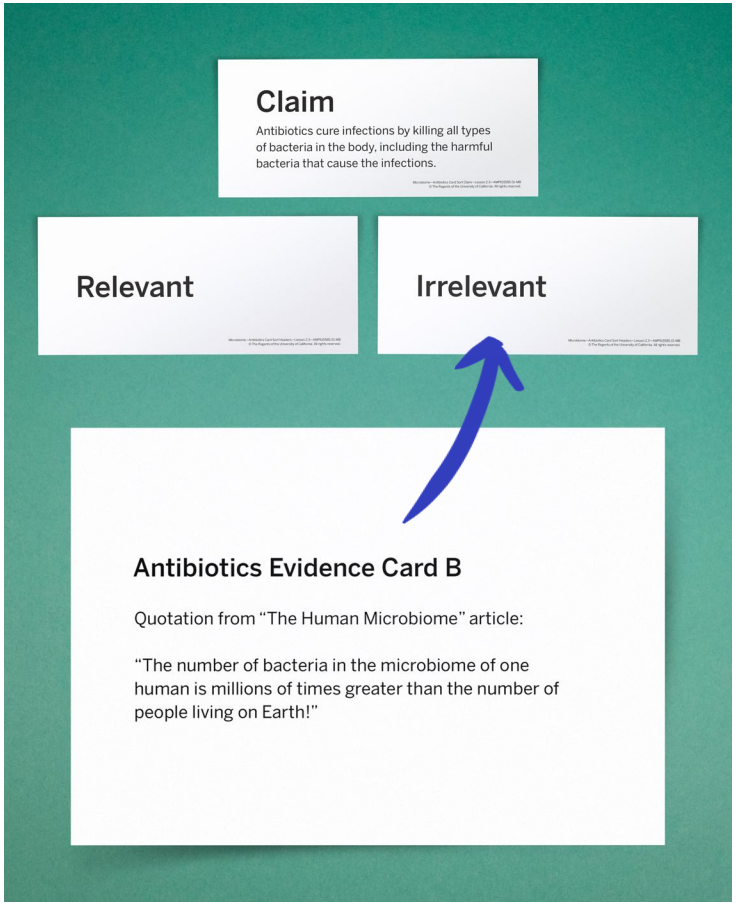


Together, you will discuss each evidence card, decide whether that evidence is **relevant** or **irrelevant** to the claim, and place the card under the category you chose.

Antibiotics Evidence Card B

Quotation from "The Human Microbiome" article:

"The number of bacteria in the microbiome of one human is millions of times greater than the number of people living on Earth!"



The evidence on Card B is interesting, but it may not be relevant to this claim. It's about bacteria, but **not about what antibiotics do** to different types of bacteria. I would put this under **Irrelevant.**

Argumentation Sentence Starters

- I think this evidence supports this claim because…
- I don’t think this evidence supports this claim because…
- I agree because…
- I disagree because…
- Why do you think that?

An important part of sorting evidence is to thoroughly discuss your thinking with a partner. These sentence starters can help you **discuss** your thinking during the Antibiotics Card Sort.

Evaluating Evidence About Antibiotics

Antibiotics Card Sort

How do antibiotics affect the microbiome?

1. Place the Claim card at the top of your desk and the Relevant and Irrelevant headers underneath it.

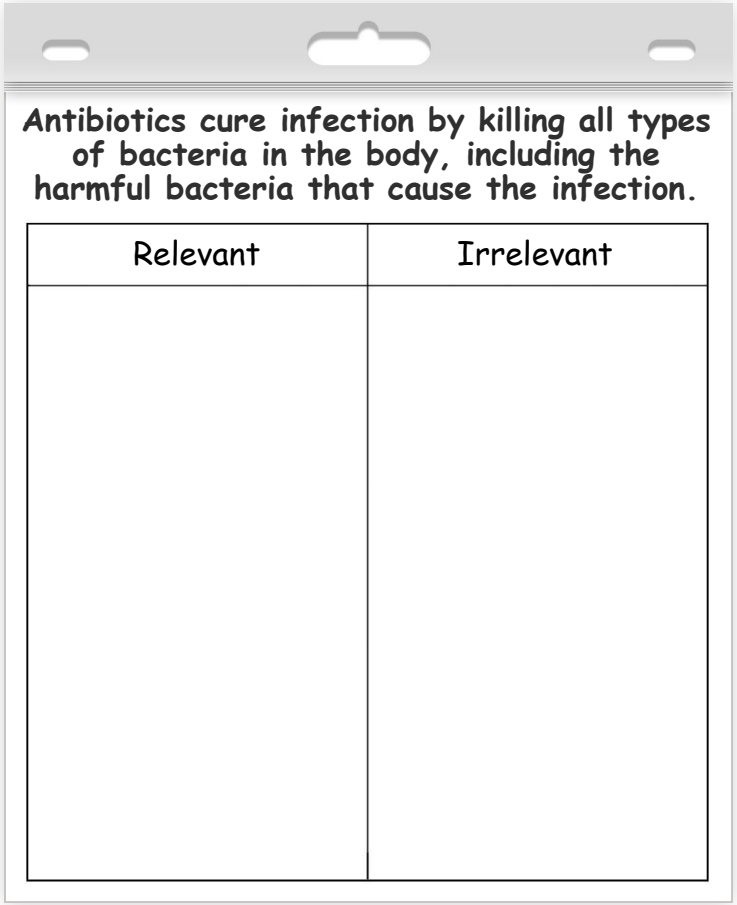
2. With your partner, discuss each evidence card and decide if it is relevant or irrelevant to the claim.

Evaluating Evidence

Scientists use relevant evidence to support a claim

Relevant evidence makes an argument stronger.

It’s important only to include relevant evidence in a strong argument.



Antibiotics cure infection by killing all types of bacteria in the body, including the harmful bacteria that cause the infection.

Relevant	Irrelevant

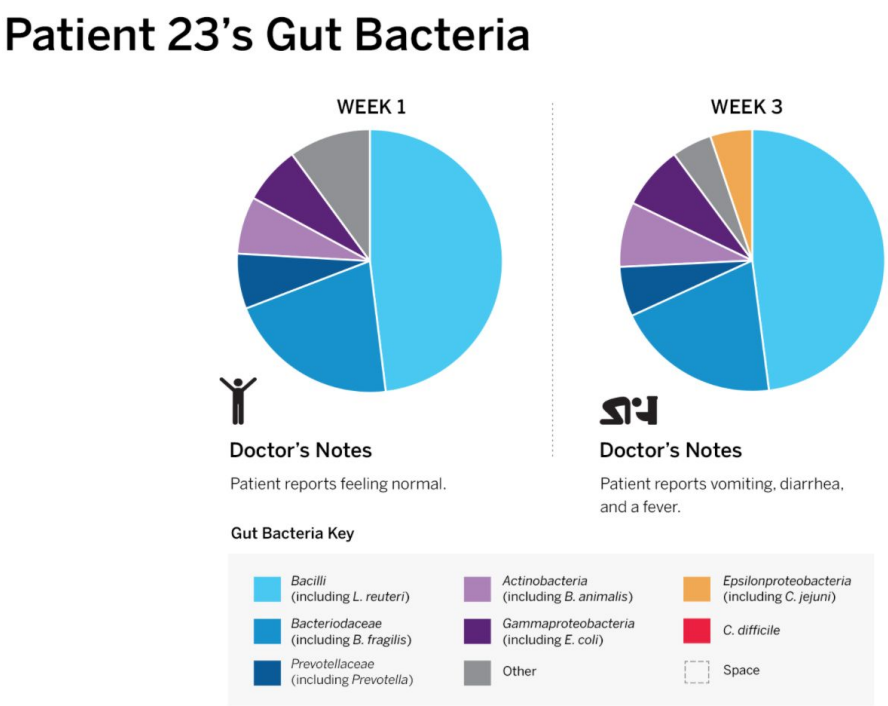
Create your own sorting tool

A. **Quotation from "The Human Microbiome" article:**
"Often, doctors treat infections with antibiotics. Antibiotics are medicines that kill bacteria."

B. **Quotation from "The Human Microbiome" article:** "The number of bacteria in the microbiome of one human is millions of times greater than the number of people living on Earth!"

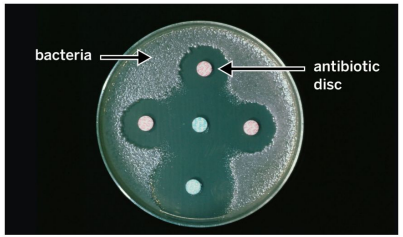
C. **Quotation from "The Human Microbiome" article:**
"Unfortunately, not all bacteria are helpful. Harmful bacteria can invade the human microbiome through cuts, spoiled food, and even the air we breathe. An invasion of harmful bacteria or other microorganisms is called an infection, and infections can make people very sick."

D. Even though they are so tiny, bacteria are living things. They have the same basic needs, such as food, warmth, and living space, as all other living things.



This microorganism is an eyelash mite. It is harmless and lives next to the roots of an organism's eyelashes. This photo was taken through a microscope so the mite in the image is about 300 times larger than its actual size.

E



F

Chart 2: Gut Bacteria in a Person with a "Food Poisoning" Infection (*C. jejuni*)

Total number of bacteria: about 90 trillion

causes "food poisoning"
symptoms: vomiting and diarrhea

What people call "food poisoning" isn't caused by poison: it's usually an infection with harmful bacteria such as *C. jejuni*.

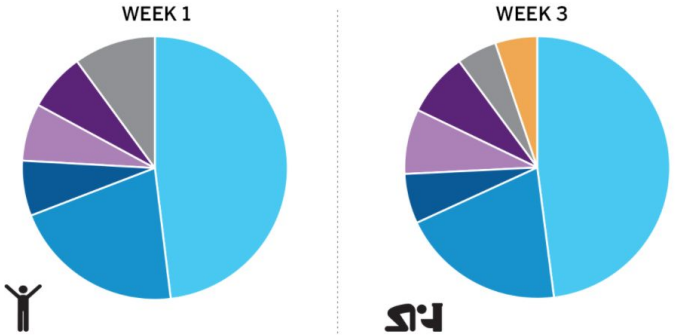
Chart 3: Reduced Gut Bacteria After Treatment with Antibiotics

Reduced number of bacteria: ONLY about 5 trillion!

To treat harmful infections, antibiotics kill bacteria. After treatment with antibiotics, people have reduced numbers of bacteria in their microbiomes. In addition, they may have different types of bacteria than they did before.

G

Patient 23's Gut Bacteria



Doctor's Notes

Patient reports feeling normal.

Doctor's Notes

Patient reports vomiting, diarrhea, and a fever.

Gut Bacteria Key

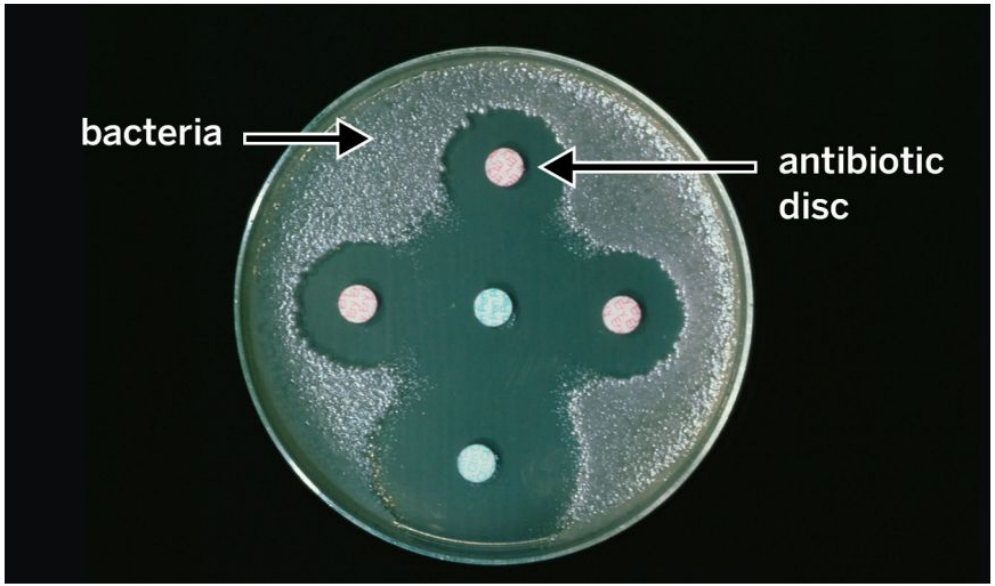
- *Bacilli* (including *L. reuteri*)
- *Bacteriodaceae* (including *B. fragilis*)
- *Prevotellaceae* (including *Prevotella*)
- *Actinobacteria* (including *B. animalis*)
- *Gammaproteobacteria* (including *E. coli*)
- Other
- *Epsilonproteobacteria* (including *C. jejuni*)
- *C. difficile*
- Space

Evidence Card E

This microorganism is an eyelash mite. It is harmless and lives next to the roots of an organism's eyelashes. This photo was taken through a microscope so the mite in the image is about 300 times larger than its actual size.

E

Evidence Card F

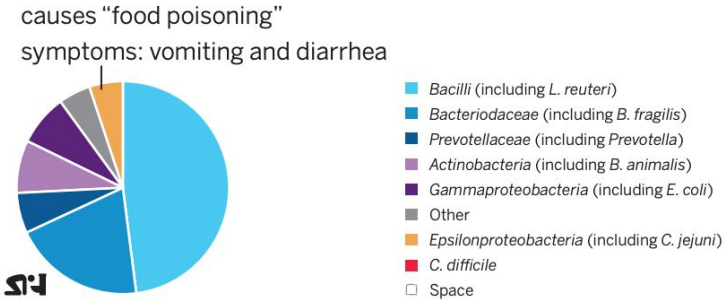


F

Evidence Card G

Chart 2: Gut Bacteria in a Person with a "Food Poisoning" Infection (*C. jejuni*)

Total number of bacteria: about 90 trillion



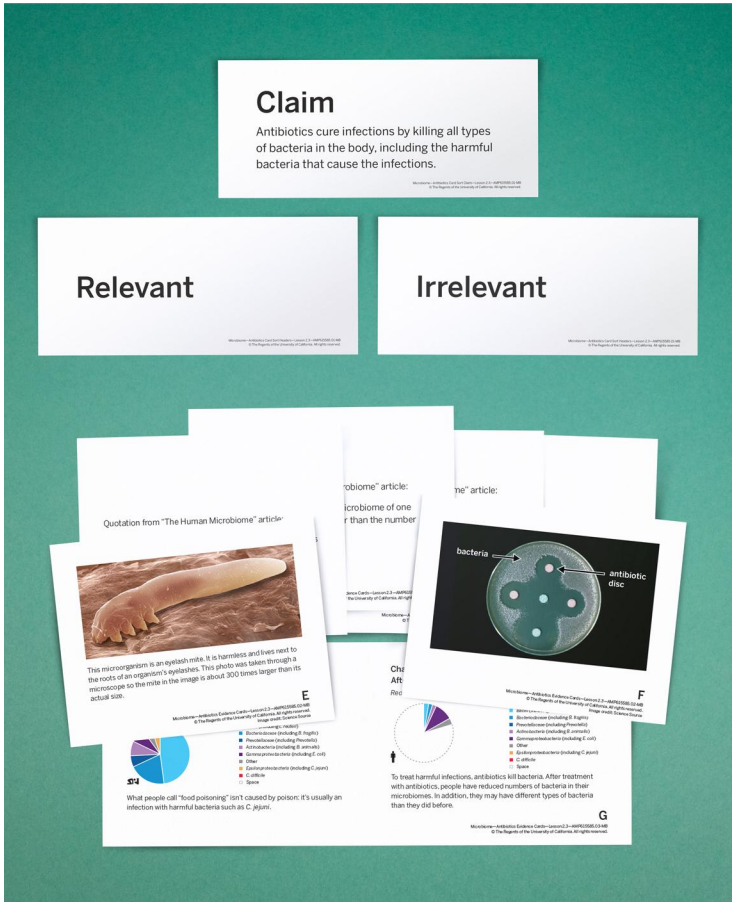
What people call "food poisoning" isn't caused by poison: it's usually an infection with harmful bacteria such as *C. jejuni*.

Chart 3: Reduced Gut Bacteria After Treatment with Antibiotics

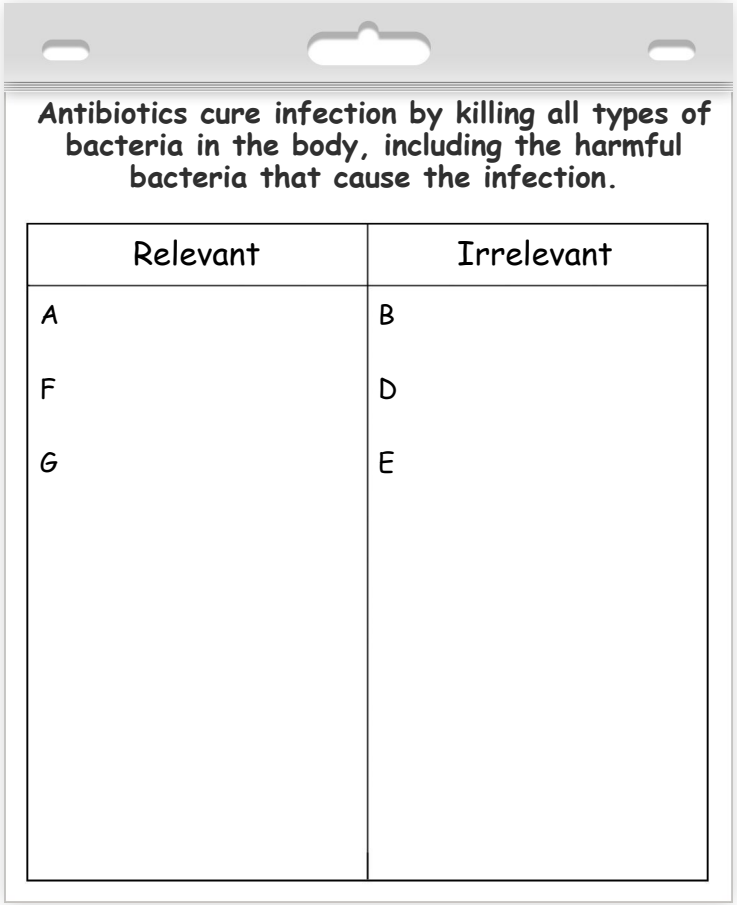
Reduced number of bacteria: ONLY about 5 trillion!

To treat harmful infections, antibiotics kill bacteria. After treatment with antibiotics, people have reduced numbers of bacteria in their microbiomes. In addition, they may have different types of bacteria than they did before.

G



Let's discuss which evidence you decided was **irrelevant** to the claim, which you decided was **relevant,** and **why.**



Antibiotics cure infection by killing all types of bacteria in the body, including the harmful bacteria that cause the infection.

Relevant	Irrelevant
A	B
F	D
G	E

What about evidence card C?

Put the Evidence Cards in order and clip them together with the Claim, Relevant, and Irrelevant headers.

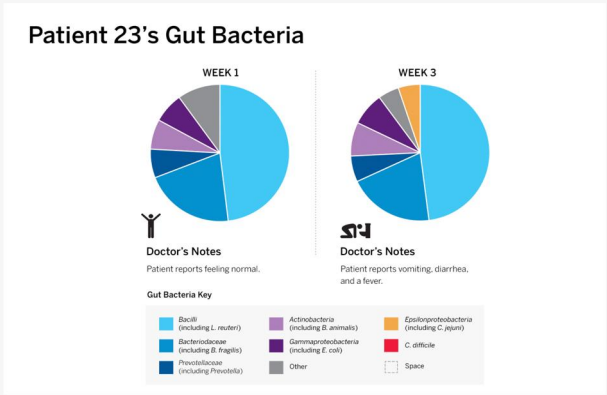
5 MIN

Activity 4

Returning to Patient 23

Returning to Patient 23

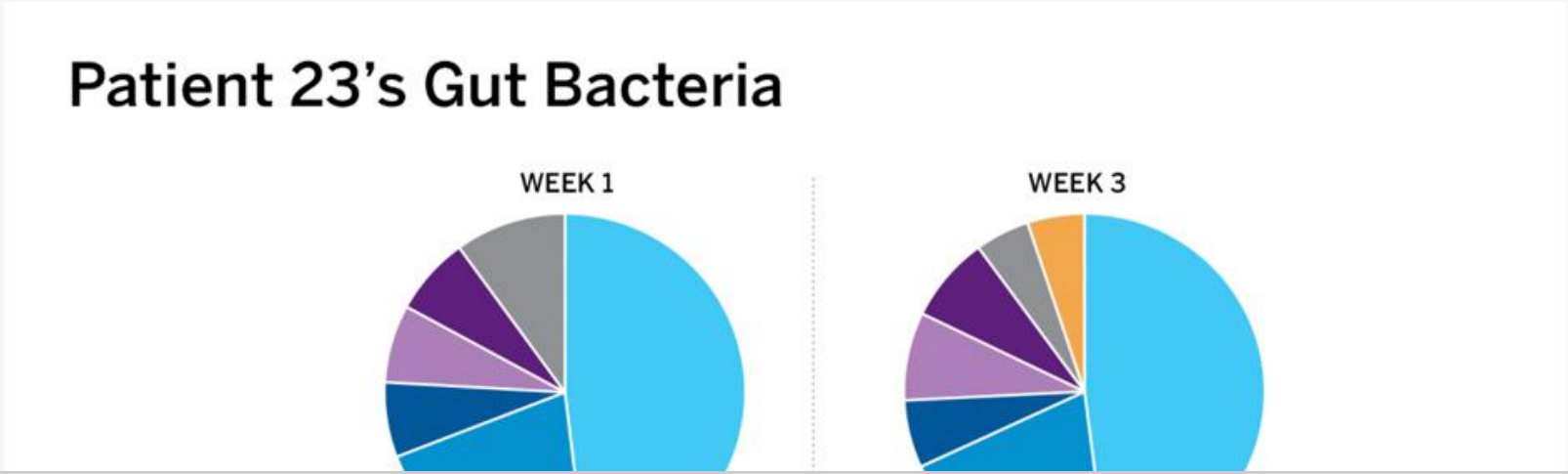
What will happen to Patient 23's gut microbiome after his antibiotics treatment?

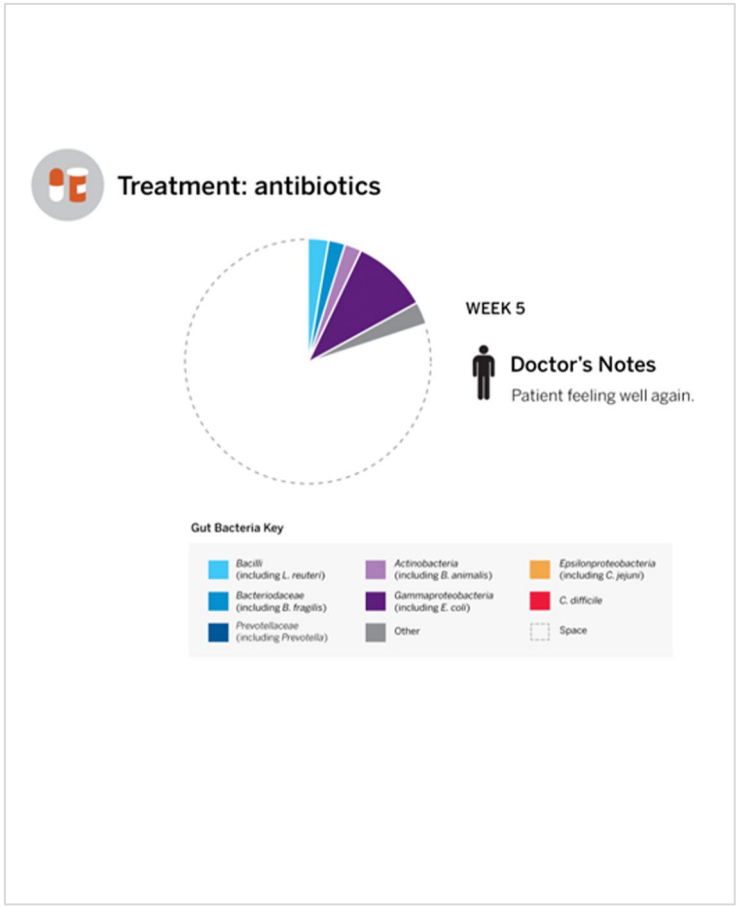


As you know, Patient 23 likely had food poisoning, or an infection from the harmful bacteria *C. jejuni*. At the end of week 3, he was **treated with antibiotics** for that infection.

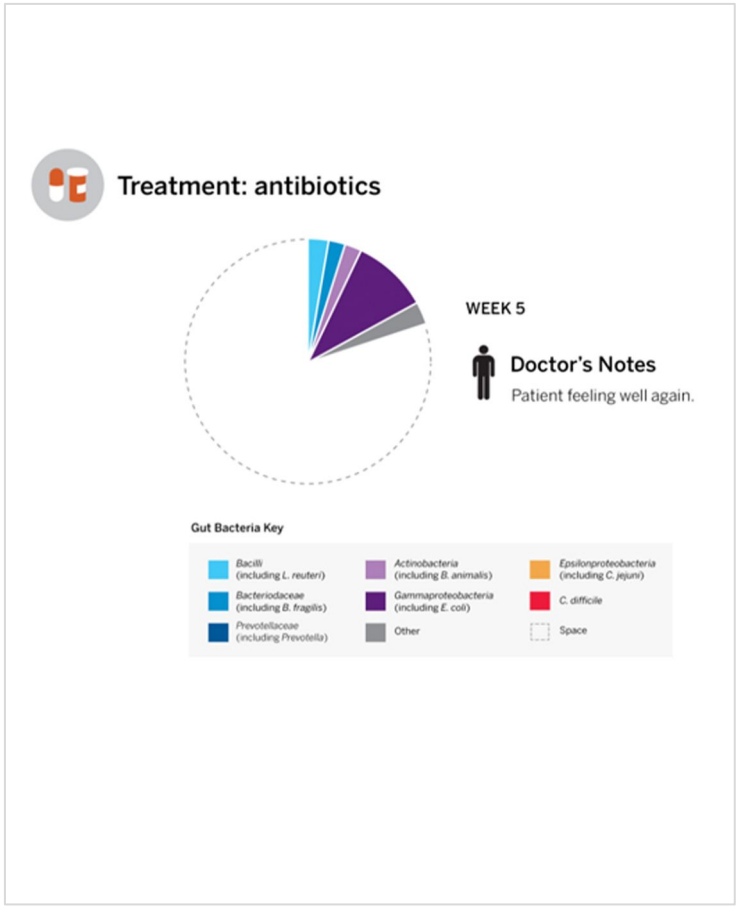
Returning to Patient 23

What will happen to Patient 23's gut microbiome after his antibiotics treatment?





You'll now have a chance to look at Patient 23's case study data from week 5.



Discuss and **record** your observations of Patient 23's case study data from week 5.

Activity 5

Homework

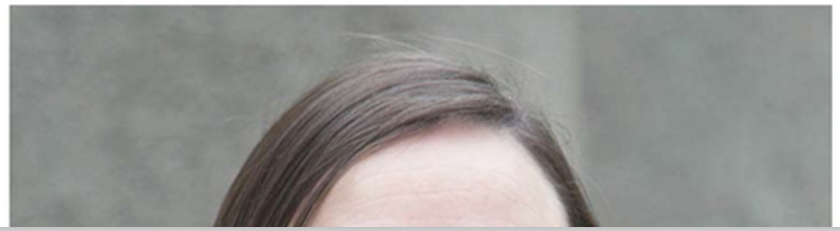
For this activity, you will learn about a **scientist** who studies the **human microbiome** by reading an article and responding to a question.

Homework

Reading "Meet a Scientist Who Studies the Human Microbiome"

Learn more about a scientist who studies the human microbiome. Open the "Meet a Scientist Who Studies the Human Microbiome" article in the Amplify Library. Read and answer the question below. Then, press HAND IN to submit your article.

Meet a Scientist Who Studies the Human Microbiome



What do scientists who study the human microbiome hope to achieve?

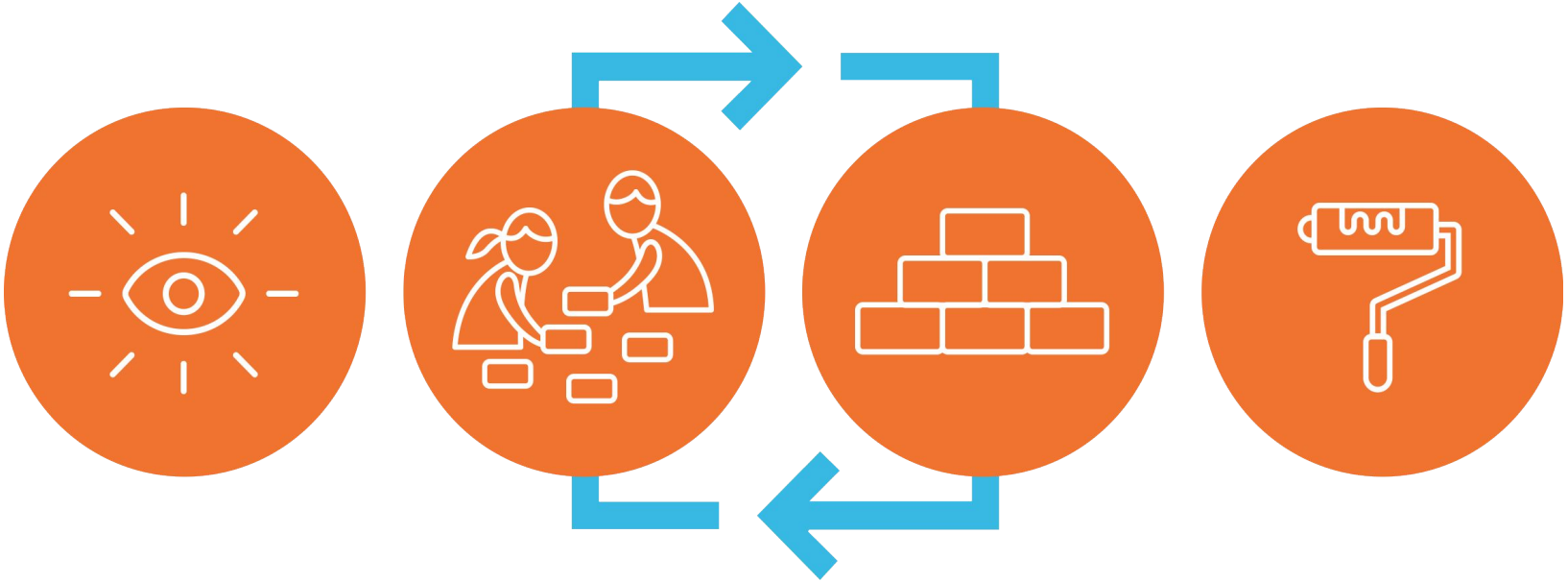
End of Lesson

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

Amplify.

Published and Distributed by Amplify. www.amplify.com

What aspects of the Amplify Science Instructional Approach did you experience in the Launch Unit?



Introduce a phenomenon and a related problem

Collect evidence from multiple sources

Build increasingly complex explanations

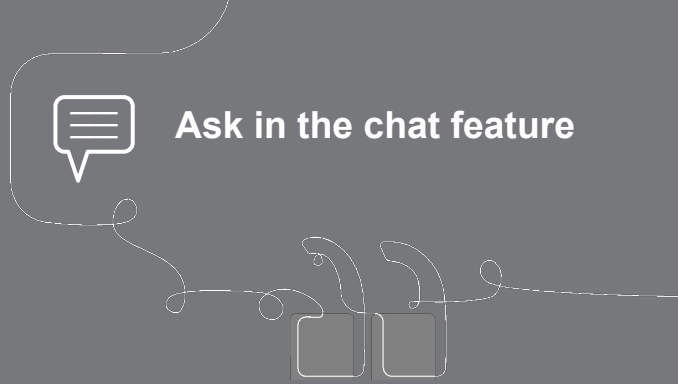
Apply knowledge to solve a different problem

Lesson Reflection

Answer in the chat feature

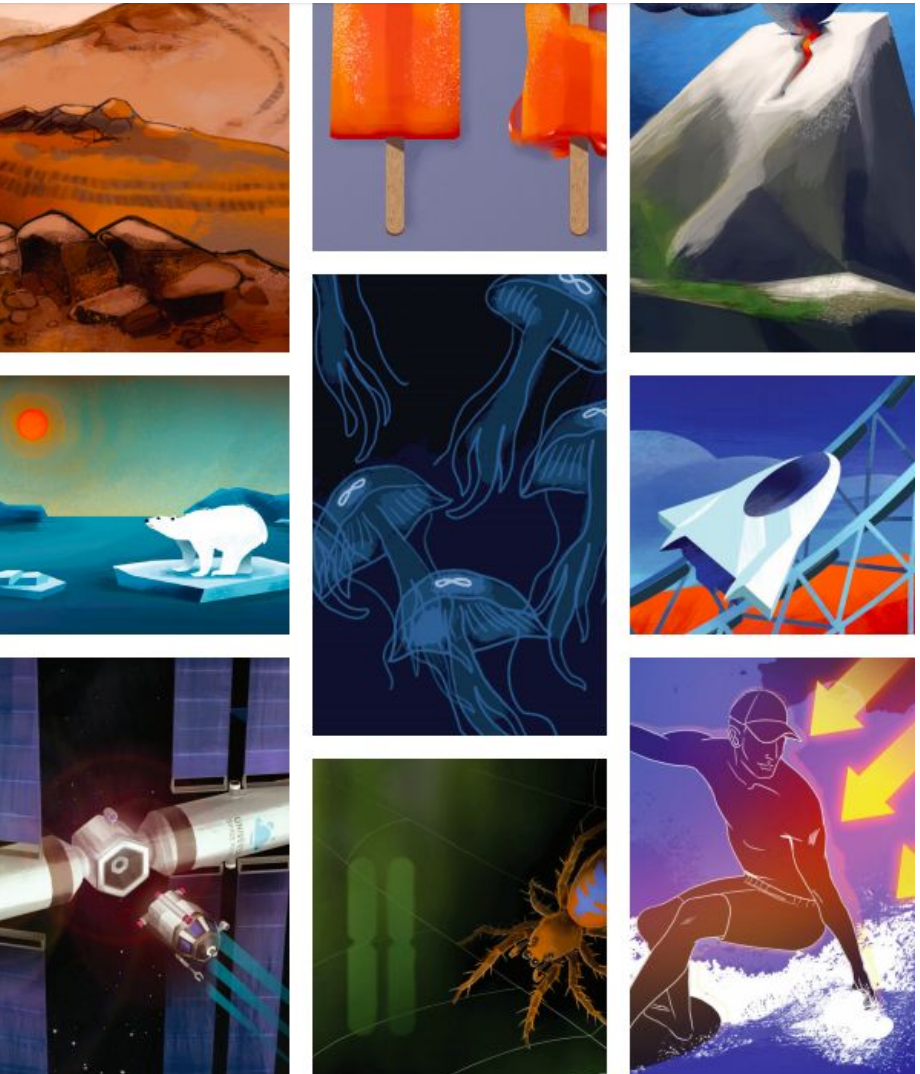
How is a launch unit lesson similar/different from a core unit lesson?

What questions do you have?



Questions?

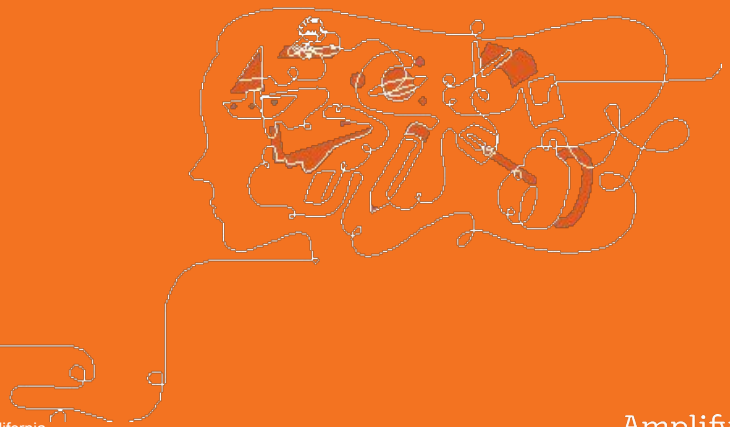
5 min break



Plan for the day

- ✔ Experiencing the Launch Unit
- Launch Unit Components
- Planning to Teach
- Remote/Hybrid Resources
- Closing and reflection

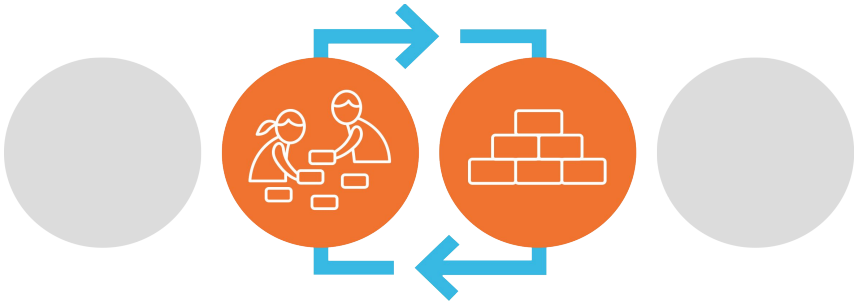
Launch Unit Components



Argumentation in Amplify Science

Goals for argumentation in Amplify Science

- To provide students an authentic opportunity to engage in the practice of argumentation
- To make clear to students the purpose of argumentation and the role it plays in building and communicating scientific knowledge
- To help students build their own knowledge through argumentation



Specific goals for argumentation in launch units

- Introduce the **practice of argumentation** in science
- Introduce **tools** that will be used throughout the year to support students in getting better at specific aspects of oral and written argumentation:
  - **Card sorts**
  - **Evidence gradient**
  - **Reasoning tool**

Completed Scientific Argumentation Wall Diagram

Scientific Argumentation

2.3

The purpose of a scientific argument is to convince others, using evidence and reasoning.

2.3

Evaluating Evidence

2.3

Scientists use relevant evidence to support a claim.

2.3

Scientific Argument

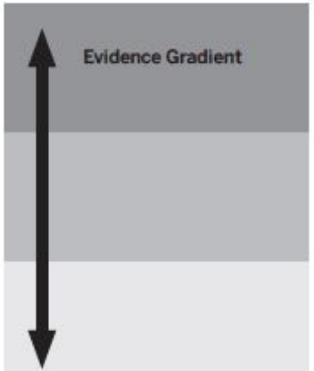
2.3

Reasoning Tool

Evidence and ideas	This matters because...	Therefore...

2.5

Evidence Gradient



2.6

Example Student Argument

A scientific argument . . .

- begins with a question.
- has a claim that proposes an answer to the question.
- has evidence that supports the claim.
- clearly explains how the evidence supports the claim (reasoning).

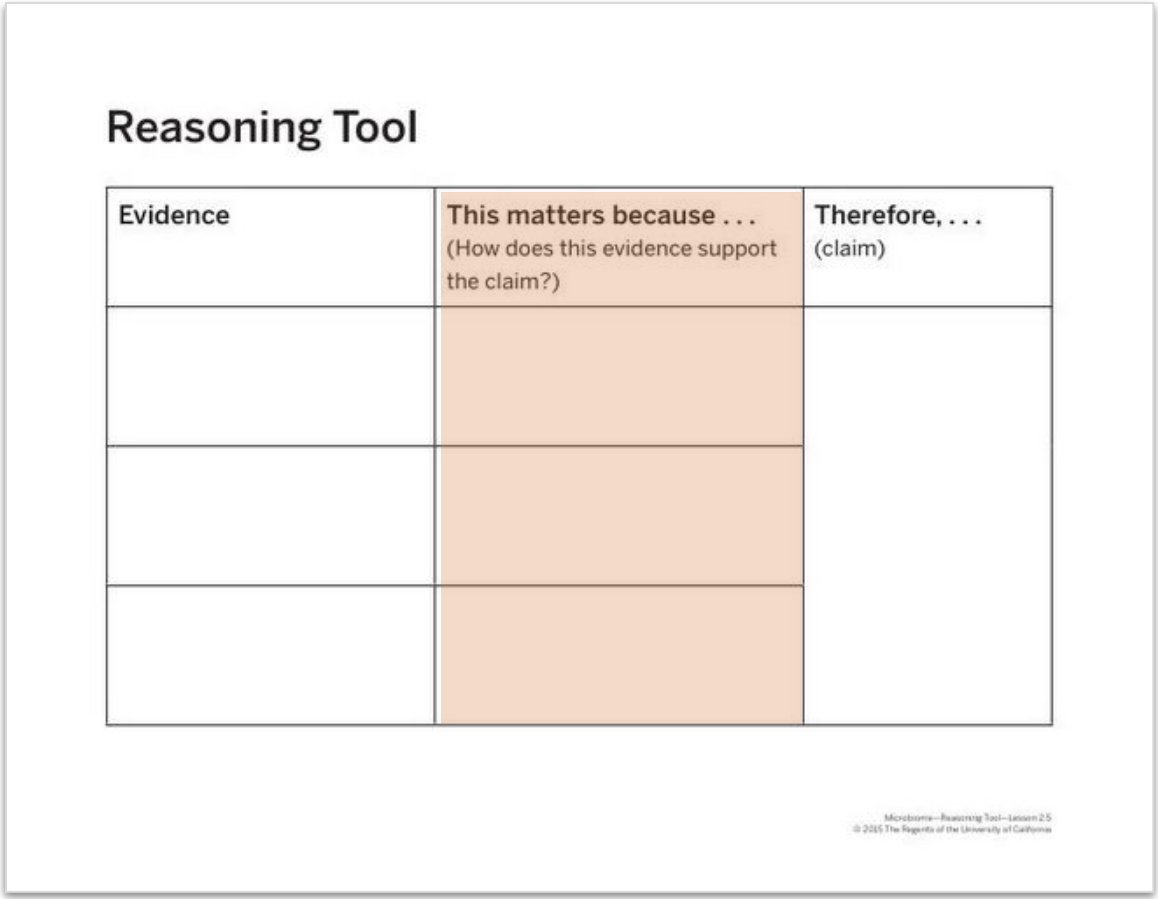
2.3

Argumentation Sentence Starters

- I think this evidence supports this claim because . . .
- I don't think this evidence supports this claim because . . .
- I agree because . . .
- I disagree because . . .
- Why do you think that?

2.3

Reasoning Tool

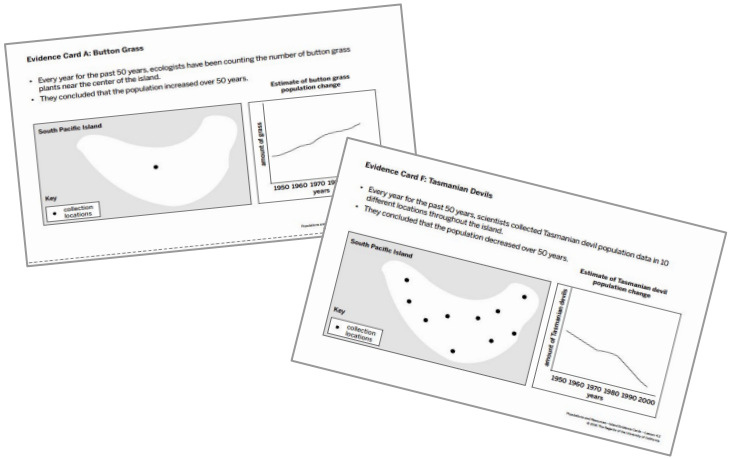


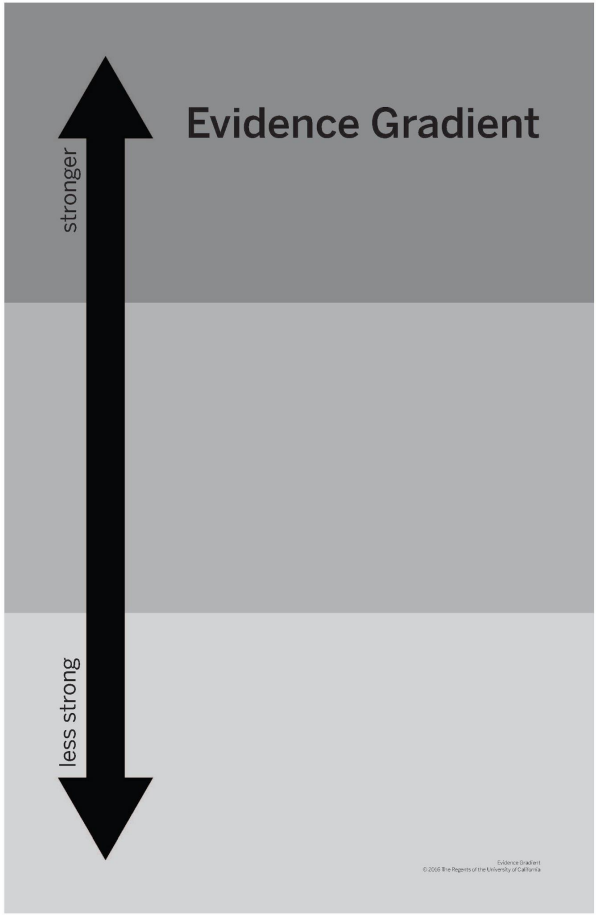
Reasoning Tool

Evidence	This matters because . . . (How does this evidence support the claim?)	Therefore, . . . (claim)

Evidence Gradient

Evidence is higher quality if it comes from a reliable source.





Introducing Argumentation, Lesson 2.3

Independent work time directions:

- Navigate to lesson 2.3
- Use the lesson materials to find out how argumentation is introduced.
- Be ready to share out.

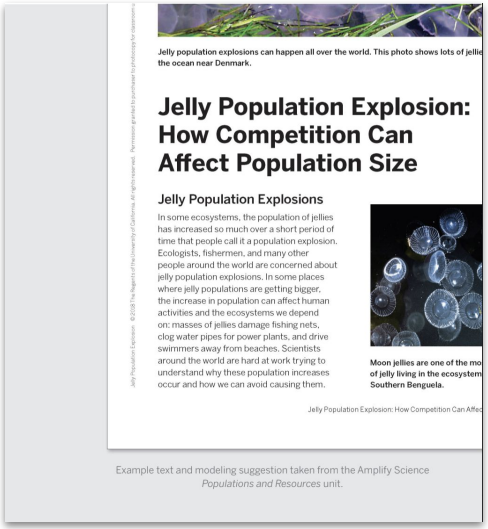
Reflection

- How is argumentation introduced? What tools/scaffolds are included to support students in developing this practice?
- Is there anything you anticipate your students will find challenging? What action will you take to support them?

Active Reading in Amplify Science

Active Reading

Teacher Modeling



Jelly population explosions can happen all over the world. This photo shows lots of jellies in the ocean near Denmark.

Jelly Population Explosion: How Competition Can Affect Population Size

Jelly Population Explosions

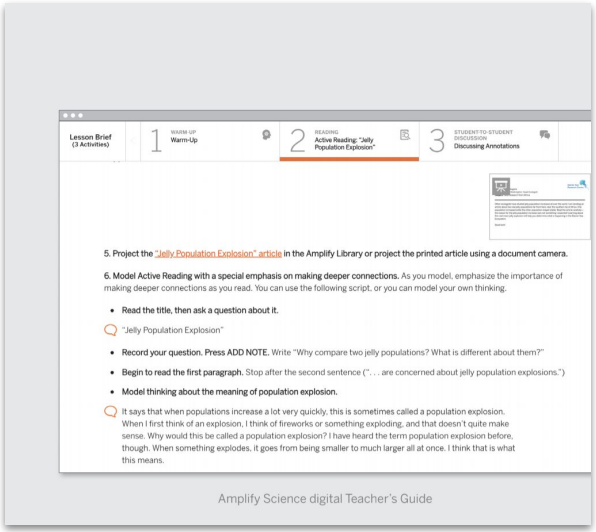
In some ecosystems, the population of jellies has increased so much over a short period of time that people call it a population explosion. Ecologists, fishermen, and many other people around the world are concerned about jelly population explosions. In some places where jelly populations are getting bigger, the increase in population can affect human activities and the ecosystems we depend on: masses of jellies damage fishing nets, clog water pipes for power plants, and drive swimmers away from beaches. Scientists around the world are hard at work trying to understand why these population increases occur and how we can avoid causing them.

Moon jellies are one of the mo… of jelly living in the ecosystem… Southern Benguela.

Jelly Population Explosion: How Competition Can Affec…

Example text and modeling suggestion taken from the Amplify Science *Populations and Resources* unit.

Step 1: An excerpt of student text is read aloud by the teacher



Lesson Brief (3 Activities)

1 WARM-UP Warm-Up

2 READING Active Reading: "Jelly Population Explosion"

3 STUDENT-TO-STUDENT DISCUSSION Discussing Annotations

5. Project the "Jelly Population Explosion" article in the Amplify Library or project the printed article using a document camera.

6. Model Active Reading with a special emphasis on making deeper connections. As you model, emphasize the importance of making deeper connections as you read. You can use the following script, or you can model your own thinking.

- Read the title, then ask a question about it.

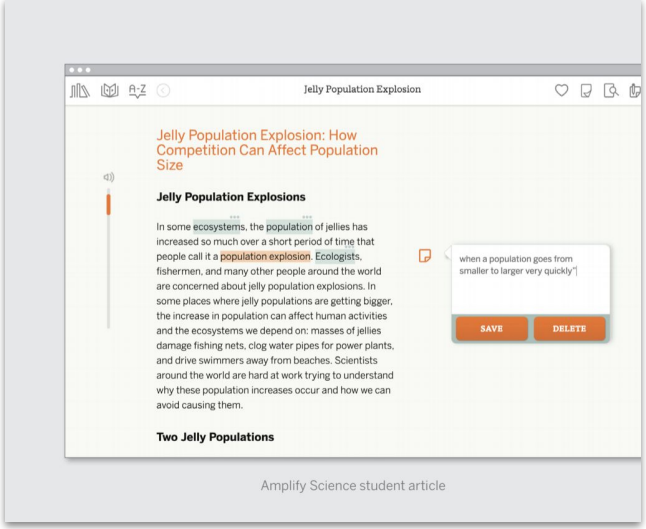
"Jelly Population Explosion"

- Record your question. Press ADD NOTE. Write "Why compare two jelly populations? What is different about them?"
- Begin to read the first paragraph. Stop after the second sentence (". . . are concerned about jelly population explosions.")
- Model thinking about the meaning of population explosion.

It says that when populations increase a lot very quickly, this is sometimes called a population explosion. When I first think of an explosion, I think of fireworks or something exploding, and that doesn't quite make sense. Why would this be called a population explosion? I have heard the term population explosion before, though. When something explodes, it goes from being smaller to much larger all at once. I think that is what this means.

Amplify Science digital Teacher's Guide

Step 2: The teacher models her thinking



Jelly Population Explosion

Jelly Population Explosion: How Competition Can Affect Population Size

Jelly Population Explosions

In some ecosystems, the population of jellies has increased so much over a short period of time that people call it a population explosion. Ecologists, fishermen, and many other people around the world are concerned about jelly population explosions. In some places where jelly populations are getting bigger, the increase in population can affect human activities and the ecosystems we depend on: masses of jellies damage fishing nets, clog water pipes for power plants, and drive swimmers away from beaches. Scientists around the world are hard at work trying to understand why these population increases occur and how we can avoid causing them.

when a population goes from smaller to larger very quickly"]

SAVE DELETE

Two Jelly Populations

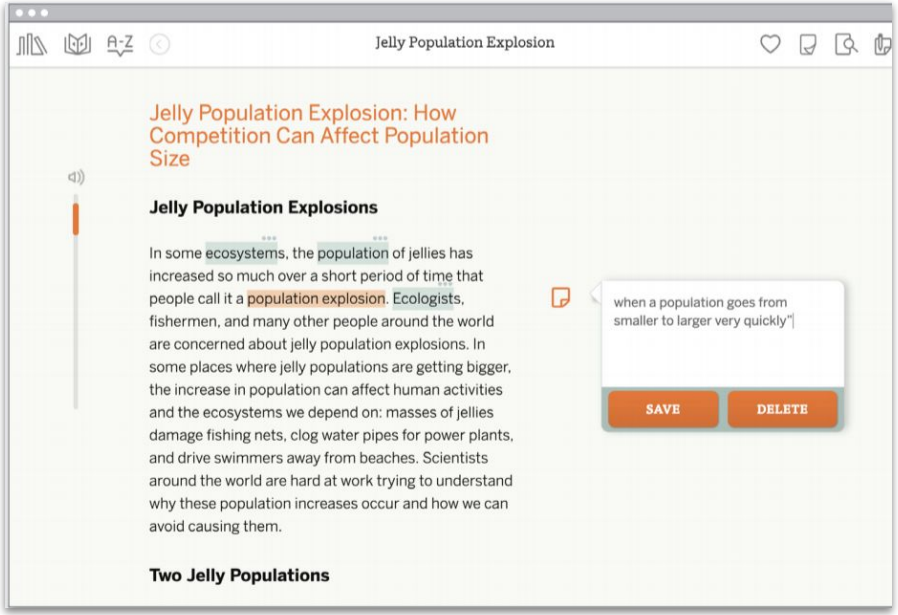
Amplify Science student article

Step 3: The teacher models annotating the text

Amplify.

Active Reading

The first read



Students individually annotate the text by taking notes, and recording questions.

Students discuss their ideas and annotations with partners and dig back into the text together.

Active Reading

The second read

Students reread a portion of the article for a particular purpose such as to examine a specific visual representation, answer a question, find evidence to support a claim or draw conclusions across texts.

Students discuss the text with a partner

Active Reading Guidelines

1. Think carefully about what you read. Pay attention to your own understanding.

2. As you read, annotate the text to make a record of your thinking. Highlight challenging words and add notes to record questions and make connections to your own experience.

3. Examine all visual representations carefully. Consider how they go together with the text.

4. After you read, discuss what you have read with others to help you better understand the text.

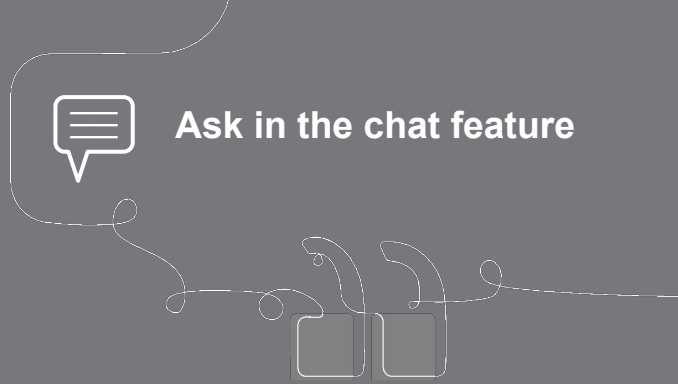
Introducing Active Reading, Lesson 2.1

Independent work time directions:

- Navigate to lesson 2.1
- Use the lesson materials to see how active reading is introduced.
  - Make sure to click on the article link to explore the digital text.
- Be ready to share out.

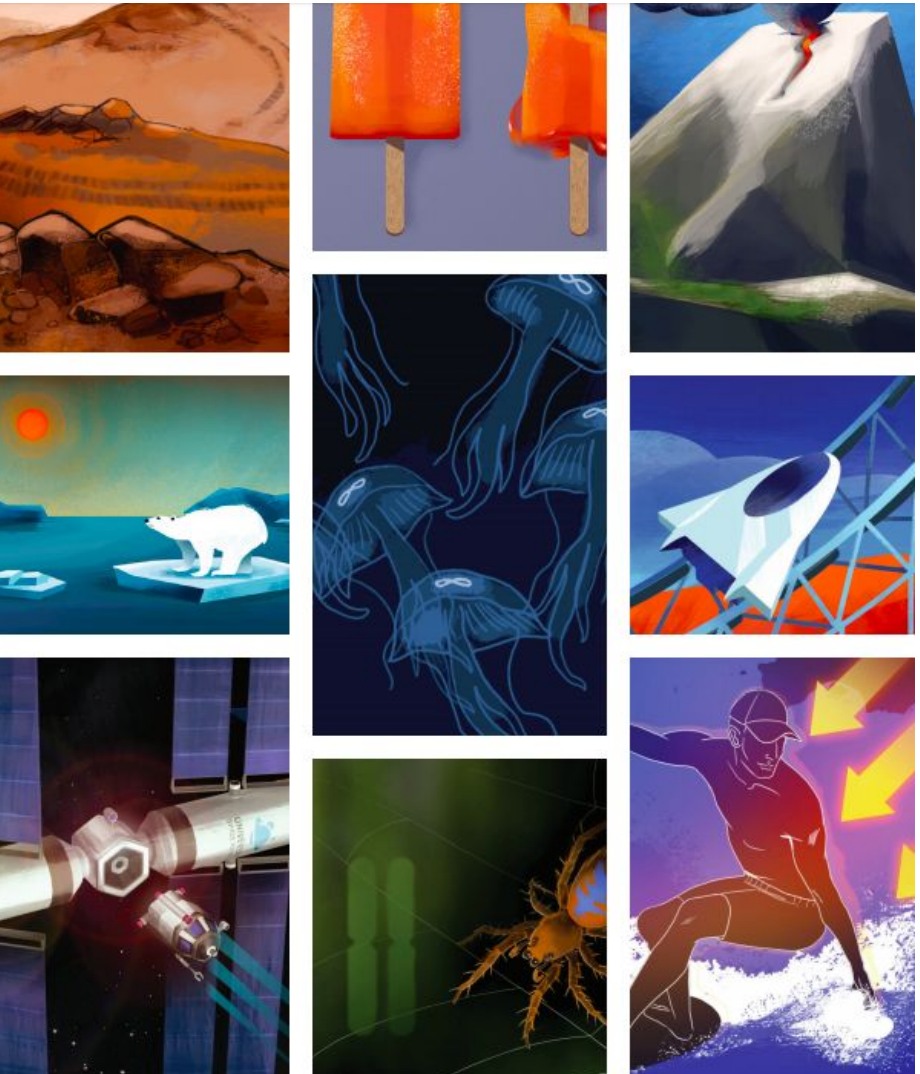
Reflection

- How is active reading introduced? What tools/scaffolds are included to support students?
- Is there anything you anticipate your students will find challenging? What action will you take to support them?



Questions?

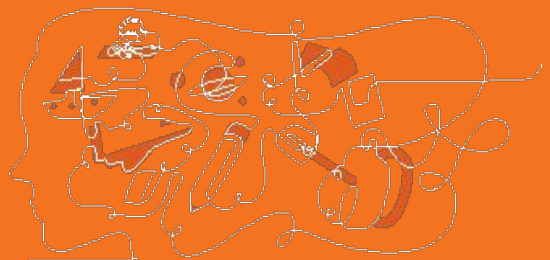
5 min break



Plan for the day

- ✔ Experiencing the Launch Unit
- ✔ Launch Unit Components
- **Planning to Teach**
- Remote/Hybrid Resources
- Closing and reflection

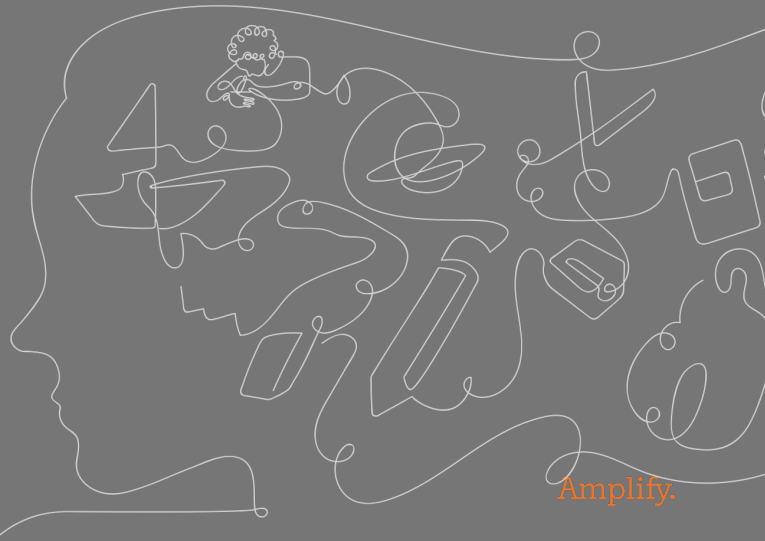
Planning to Teach



Answer in the chat feature

Group Talk

How do you typically prepare to teach a new unit?



Practice Planning a Lesson

What you need for this section:

Google or Word document

OR

Pen + paper

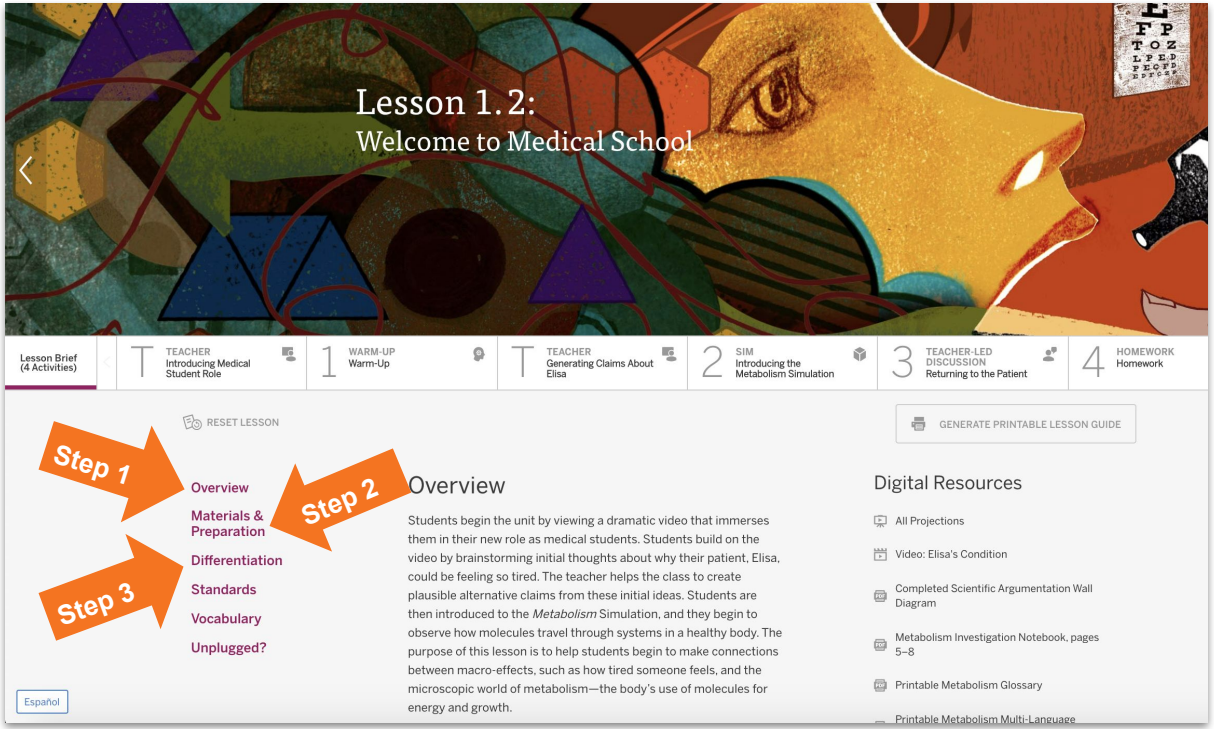
Your Turn!

Follow these 3 Easy Steps for lesson preparation

Step 1: Read the lesson overview

Step 2: Read the Materials and Preparation section

Step 3: Read the Differentiation section



Go ‘live’ to walk through lesson planning

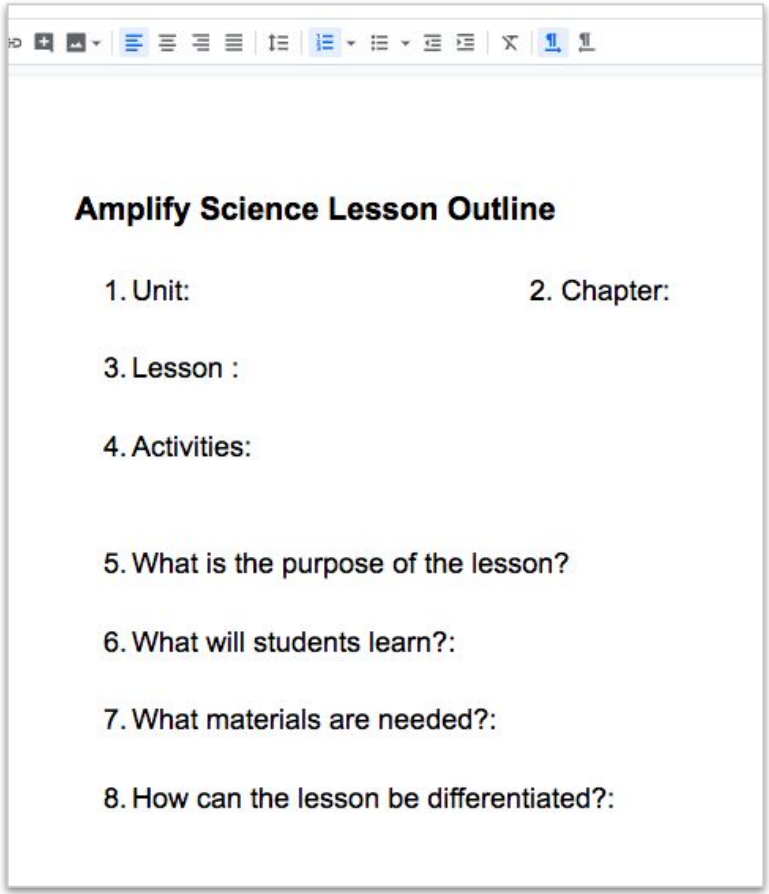
Outline your lesson

Follow these 3 Easy Steps for lesson preparation

Step 1: Read the lesson overview

Step 2: Read the Materials and Preparation section

Step 3: Read the Differentiation section



Amplify Science Lesson Outline

1. Unit: 2. Chapter:

3. Lesson :

4. Activities:

5. What is the purpose of the lesson?

6. What will students learn?:

7. What materials are needed?:

8. How can the lesson be differentiated?:

Reflect on planning a lesson

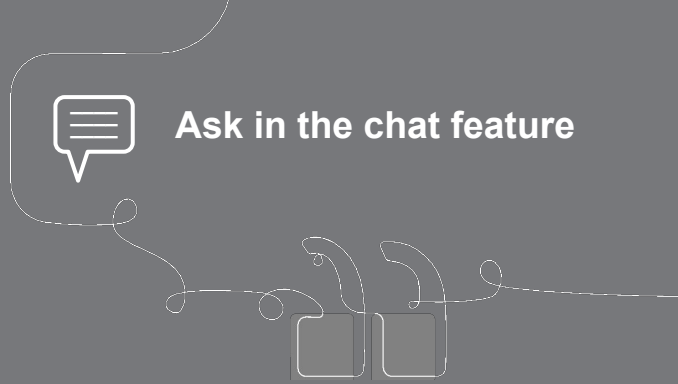
Reflecting on planning a lesson
How are students introduced to the unit's anchor phenomenon?
What are the big ideas students take away from the lesson?
What key vocabulary will students engage with?
What are a few learning modalities students engaged with during the lesson?
How are students thinking and solving problems like a scientist?

Debrief

Answer in the chat feature

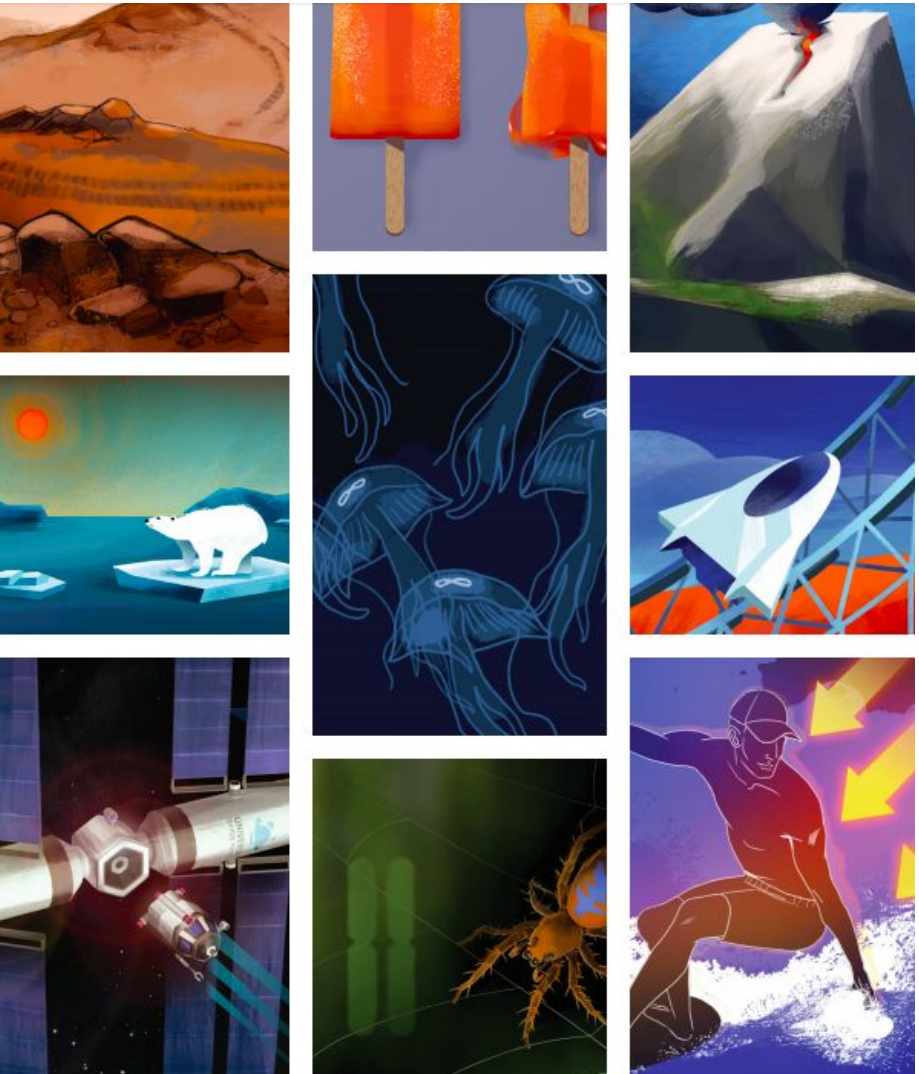
How are students thinking like scientists?

What might your students be challenged by?



Questions?

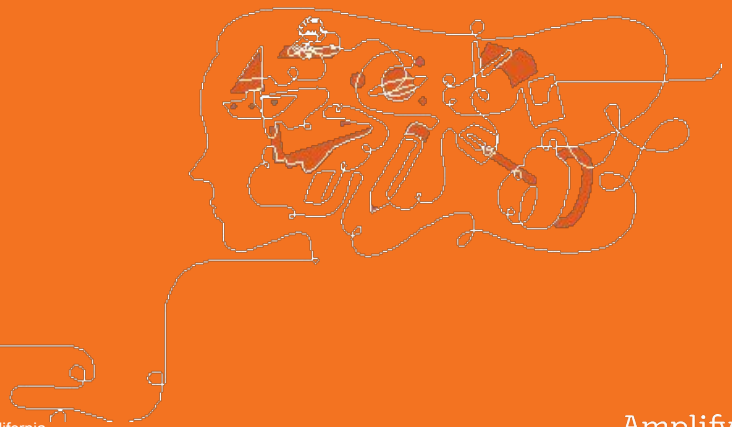
5 min break



Plan for the day

- ✔ Experiencing the Launch Unit
- ✔ Launch Unit Components
- ✔ Planning to Teach
- Remote/Hybrid Resources
- Closing and reflection

Remote/Hybrid Resources

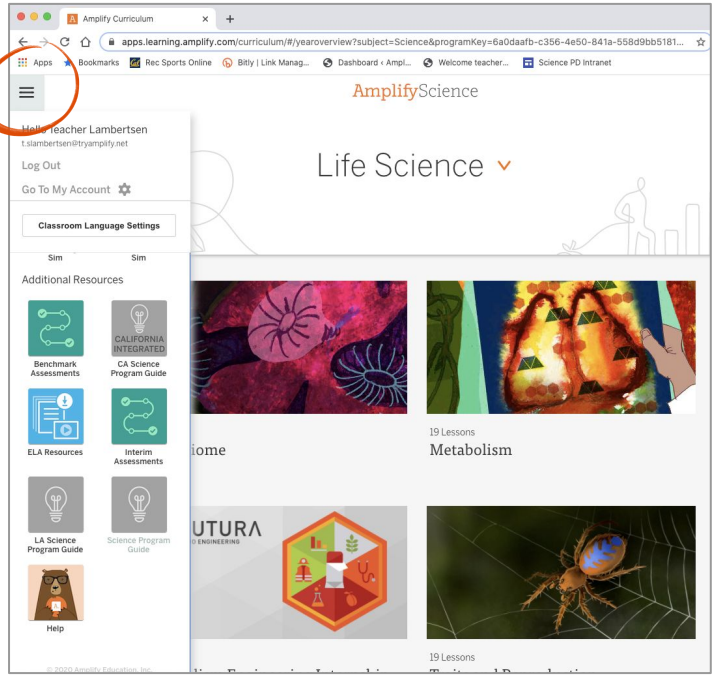


Amplify Science Program Hub

A new hub for Amplify Science resources

- Videos and resources to continue getting ready to teach
- Coming soon: Amplify@Home resources
- Keep checking back for updates

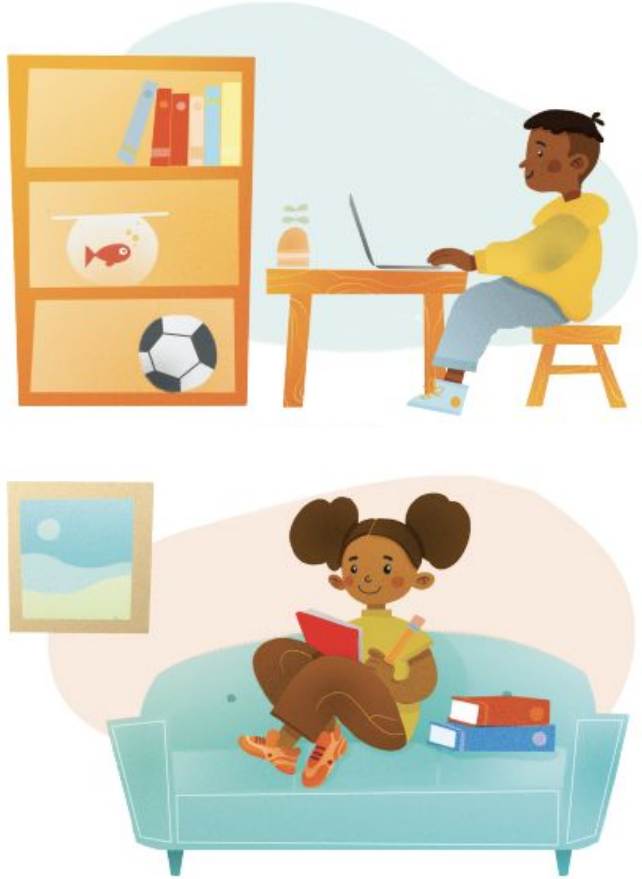
science.amplify.com/programhub



Amplify Science@Home

A suite of resources that...

- Are designed for students to complete independently
- Require no materials except a pencil and paper
- Include digital and print-only options
- Can be leveraged in a variety of remote and hybrid instructional formats



Amplify Science@Home

@Home Units

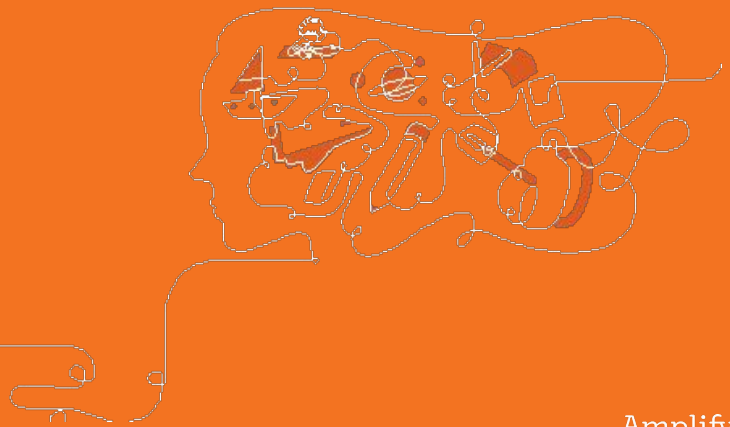
- Packet or slide deck versions of Amplify Science units condensed by about 50%

@Home Videos

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

@Home Units

Tips for selecting and using the resource



Selecting @Home Units

You might use this resource if...

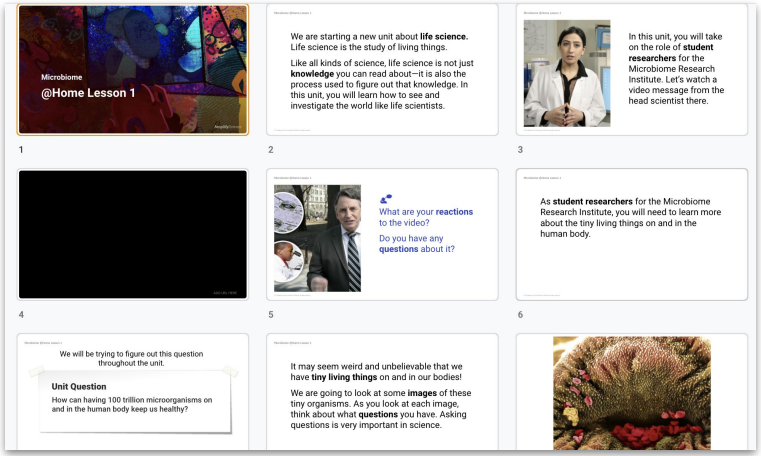
- You have **less instructional time** for science than you normally would
- You need a solution for remote, asynchronous student learning some or all of the time

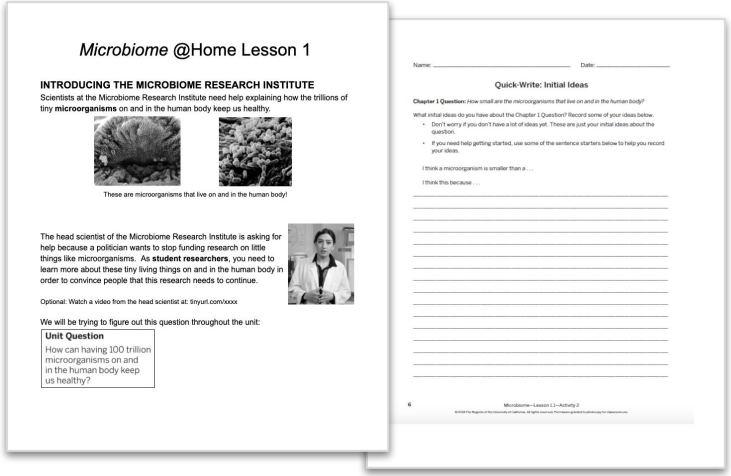
@Home Units

Two options for student access

For students with consistent access to technology at home, use **@Home Slides**

For a print-only option, use **@Home Packets**





@Home Unit resources

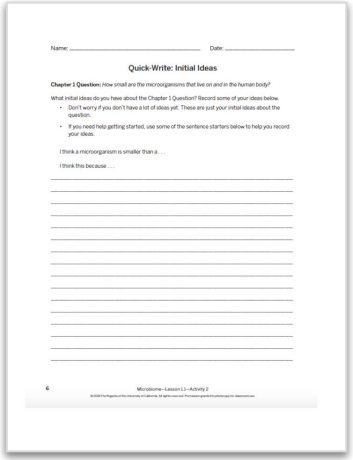
All resources are fully editable and customizable

- Teacher Overview
  - Outlines the unit and summarizes each lesson
- Family Overview
  - Provides context for families
- Student materials
  - 30-minute lessons featuring subsets of activities from Amplify Science curriculum

@Home Units

Student materials

- Brief narrative sections providing key content
- Activity instructions
- Vocabulary support
- Student sheets for writing, drawing, and diagramming
- Packets available in Word or .pdf
- Slides available in PowerPoint or .pdf


Name: _____ Date: _____

Quick-Write: Initial Ideas

Chapter 1 Question: *How small are the microorganisms that live on and in the human body?*

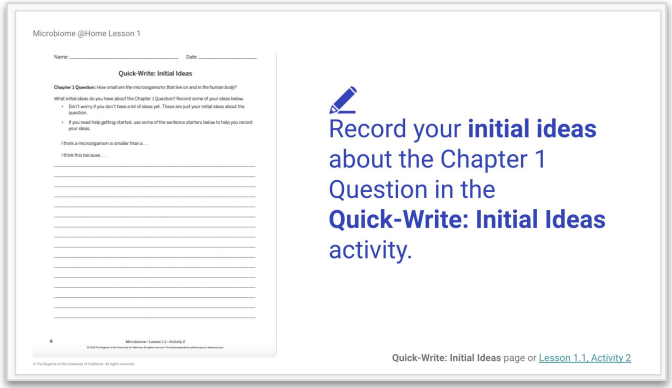
What initial ideas do you have about the Chapter 1 Question? Record some of your ideas below.

- Don't worry if you don't have a lot of ideas yet. These are just your initial ideas about the question.
- If you need help getting started, use some of the sentence starters below to help you record your ideas.

I think a microorganism is smaller than a ….

I think this because ….

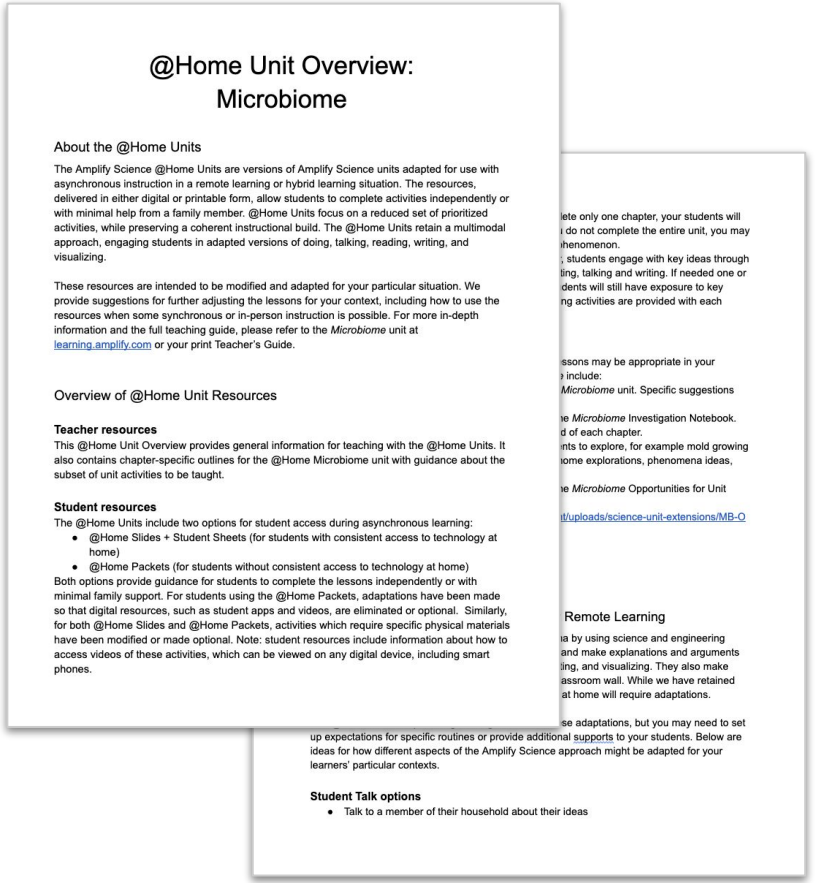
6 Microbiome–Lesson 1.1–Activity 2



@Home Units

Teacher Overview

- Instructions for establishing key routines
- Pacing suggestions for expanding or further condensing
- Assessment considerations for each chapter
- Guidance for synchronous and in-person learning for each lesson



@Home Unit Overview:
Microbiome

About the @Home Units

The Amplify Science @Home Units are versions of Amplify Science units adapted for use with asynchronous instruction in a remote learning or hybrid learning situation. The resources, delivered in either digital or printable form, allow students to complete activities independently or with minimal help from a family member. @Home Units focus on a reduced set of prioritized activities, while preserving a coherent instructional build. The @Home Units retain a multimodal approach, engaging students in adapted versions of doing, talking, reading, writing, and visualizing.

These resources are intended to be modified and adapted for your particular situation. We provide suggestions for further adjusting the lessons for your context, including how to use the resources when some synchronous or in-person instruction is possible. For more in-depth information and the full teaching guide, please refer to the *Microbiome* unit at learning.amplify.com or your print Teacher's Guide.

Overview of @Home Unit Resources

Teacher resources
This @Home Unit Overview provides general information for teaching with the @Home Units. It also contains chapter-specific outlines for the @Home Microbiome unit with guidance about the subset of unit activities to be taught.

Student resources
The @Home Units include two options for student access during asynchronous learning:

- @Home Slides + Student Sheets (for students with consistent access to technology at home)
- @Home Packets (for students without consistent access to technology at home)

Both options provide guidance for students to complete the lessons independently or with minimal family support. For students using the @Home Packets, adaptations have been made so that digital resources, such as student apps and videos, are eliminated or optional. Similarly, for both @Home Slides and @Home Packets, activities which require specific physical materials have been modified or made optional. Note: student resources include information about how to access videos of these activities, which can be viewed on any digital device, including smart phones.

Remote Learning

up expectations for specific routines or provide additional supports to your students. Below are ideas for how different aspects of the Amplify Science approach might be adapted for your learners' particular contexts.

Student Talk options

- Talk to a member of their household about their ideas

@Home Units

Family Overview

- Introduction to the unit and types of activities
- List of key ideas and vocabulary
- Suggestions for supporting students working at home

Selecting @Home Units

Different ways to use the resource

- Assign students @Home Lessons to work through independently at home
- Teach live during in-person or online synchronous time
  - Refer to Teacher Overview resources for suggestions for synchronous instruction, or
  - Revisit hands-on activities, digital tool uses, or discussion moments

@Home Units example use case

Remote Asynchronous Model: Students work flexibly through content

Monday-Thursday

Assign @Home Lessons 1-2 (Packets or Slides)

Friday

Students submit work product through email, or by writing on paper and texting the teacher a photo of their work

@Home Units example use case

Hybrid Model: Teach live during in-person time





Monday-Tuesday

Remote

Assign: @Home Lesson 1 (Packet or Slides)

Wednesday

In-person

Teach: @Home Lesson 1: Ideas for synchronous or in-person instruction

Thursday-Friday

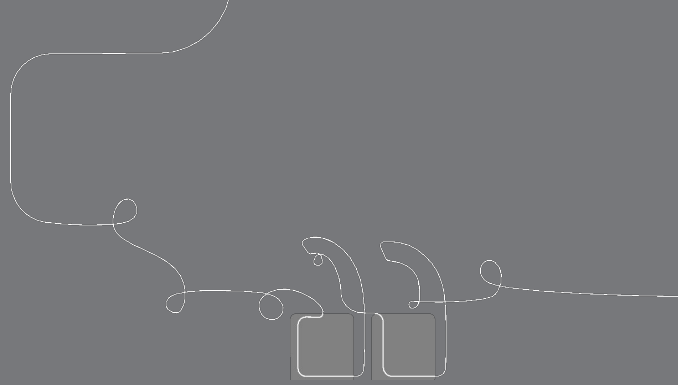
Remote

Assign: @Home Lesson 3 (Packet or Slides)

Planning to use @Home Units

- Download and read your unit's **Teacher Overview** on the Program Hub
- Plan for establishing **key routines** for talk, writing, reading, hands-on, and classroom wall references
    - (See: *Adapting the Amplify Science Approach for Remote Learning* in your unit's Teacher Overview)
- Determine **how students will access** slides or packets, and how they will **submit work**
- Consider **pacing**, including when you have synchronous science time with your students (if applicable)

Reflection

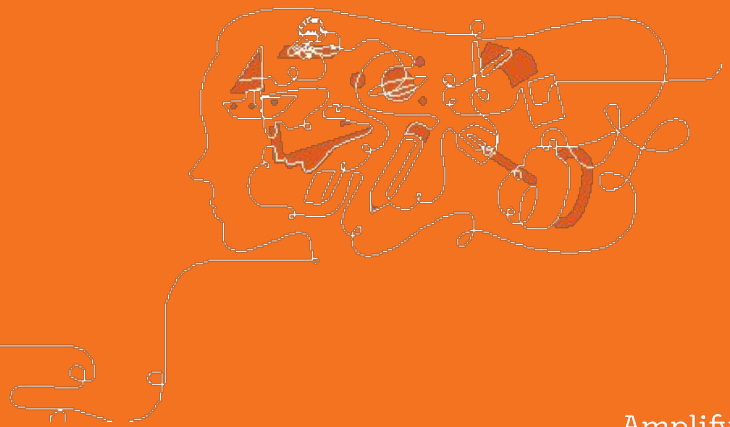


What other ideas do you have for using @Home Units?

How could you make this resource work for your learning scenario?

@Home Videos

Tips for selecting and using the resource



Selecting @Home Videos

You might use this resource if...

- Your students have **access to internet-connected devices** at home
- You have **about the same amount of instructional time** for science as you normally would
- You need a solution for remote, asynchronous student learning some or all of the time

Selecting @Home Videos

Different ways to use the resource

- Assign students video lessons to watch at home
- Teach live during in-person or online synchronous time!
  - Teach full lessons, or
  - Revisit parts of lessons in the videos students have already watched
- Watch the videos yourself as a model, then make videos of yourself teaching to send to your students

@Home Videos example use case

Hybrid Model: Teach live during in-person time

Monday

Remote

Assign: Lesson 1.1 Video

Tuesday

In-person

Teach: Lesson 1.2 live

Wednesday

Remote

Assign: Lesson 1.3 Video

Thursday

Remote

Assign: Lesson 1.4 Video

Friday

In-person

Revisit: hands-on or discourse-based activities the week's lessons

@Home Videos example use case

Remote Synchronous Model: Discussions during online class

Monday

Asynchronous

Assign: Lesson 1.1 Video

Tuesday

Asynchronous

Assign: Lesson 1.2 Video

Wednesday

Synchronous

Teach: Lead class discussion to review key ideas from 1.1 and 1.2

Thursday

Asynchronous

Assign: Lesson 1.3 Video

Friday

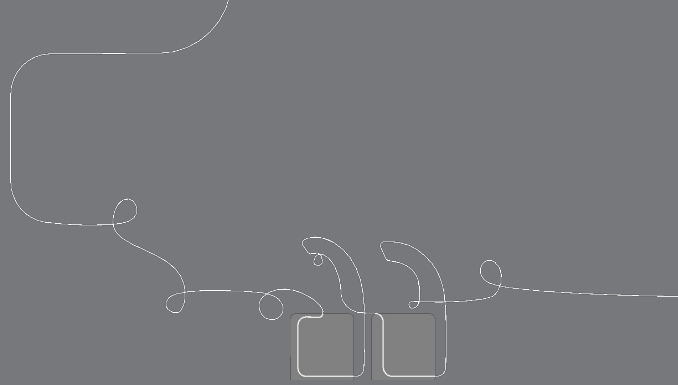
Asynchronous

Assign: Independent written reflection about week's lessons

Planning to use @Home Videos

- Determine **how students will access** videos, and how they will **submit work**
- Consider **pacing**, including when you have synchronous science time with your students (if applicable)
- Plan for **student access to digital tools** and/or digital books and articles (if applicable)
- Consider how you'll **communicate with families** about this resource

Reflection



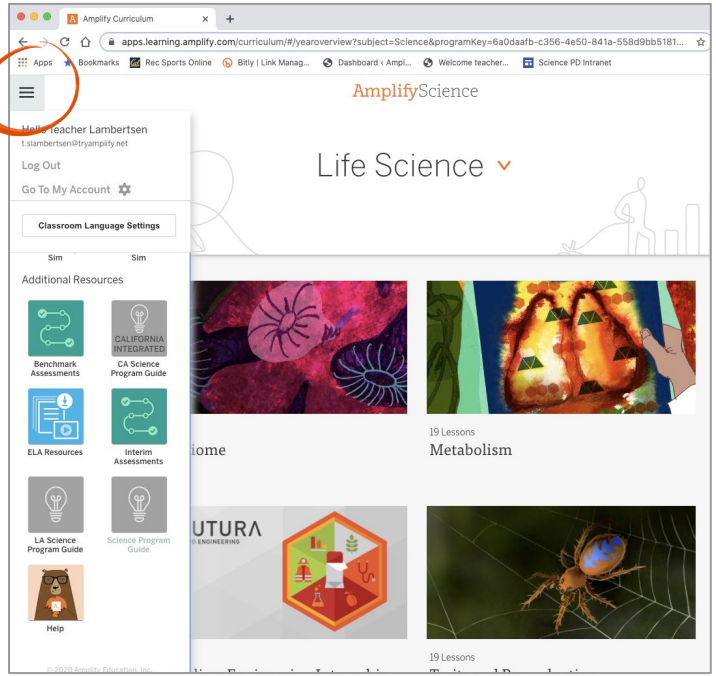
What other ideas do you have for using @Home Videos?

How could you make this resource work for your learning scenario?

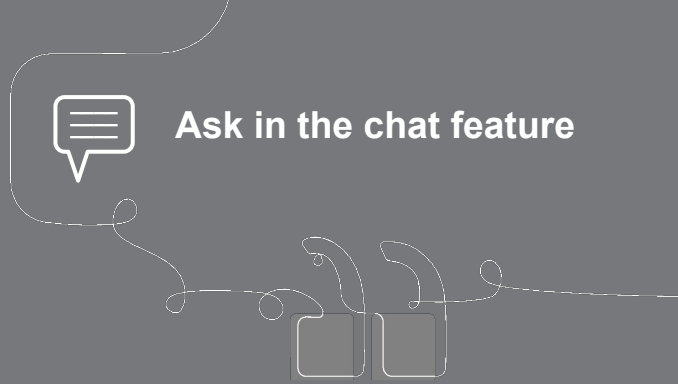
Amplify Science Program Hub

A new hub for Amplify Science resources

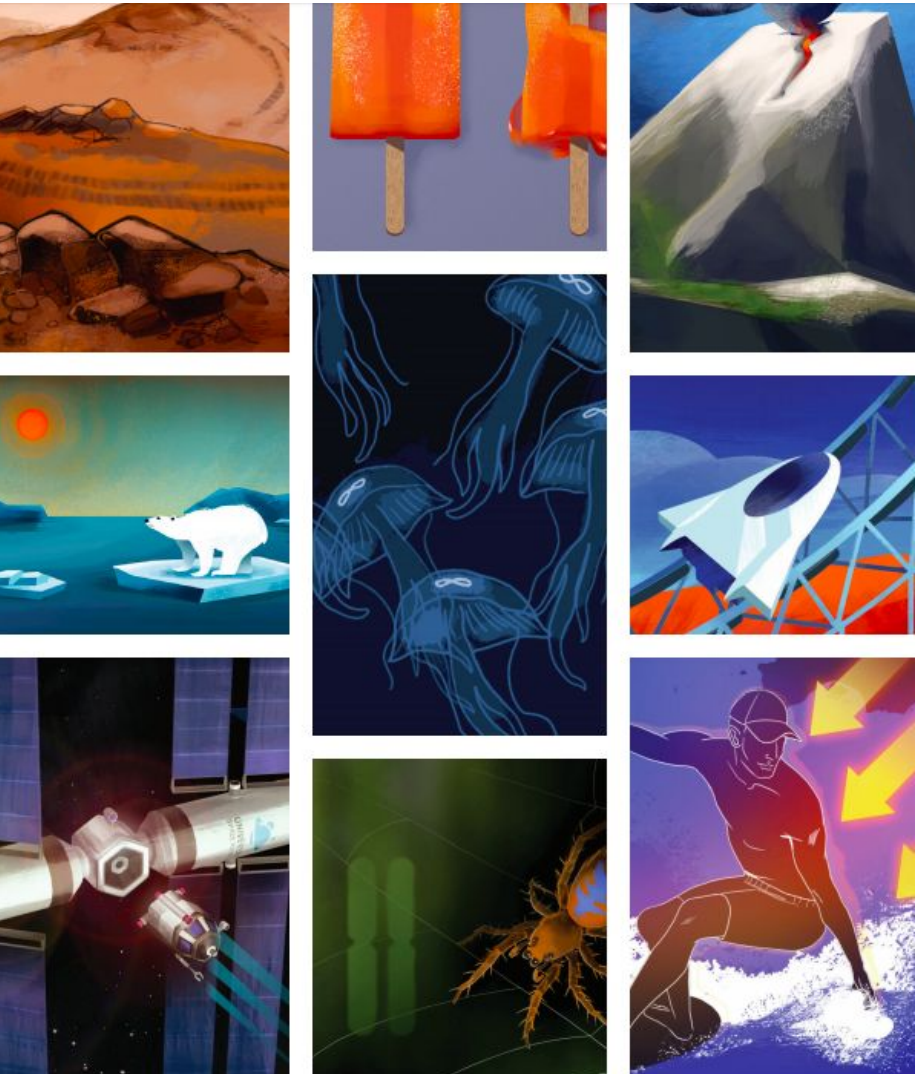
- Click on Global Navigation
- Scroll down and click on Program Hub
- Take some time to explore the resources here.



science.amplify.com/programhub



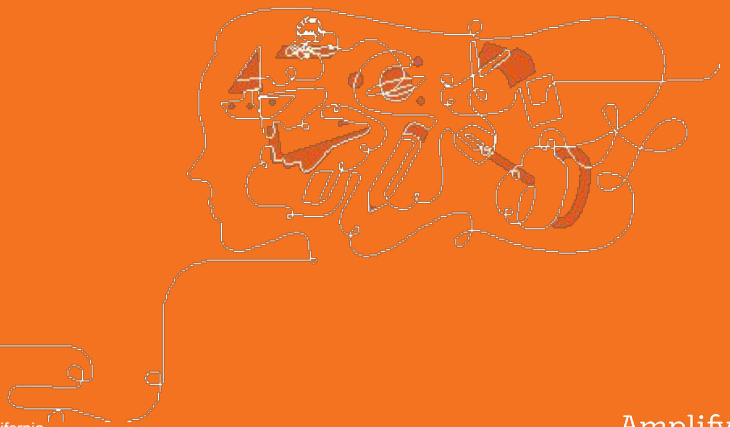
Questions?

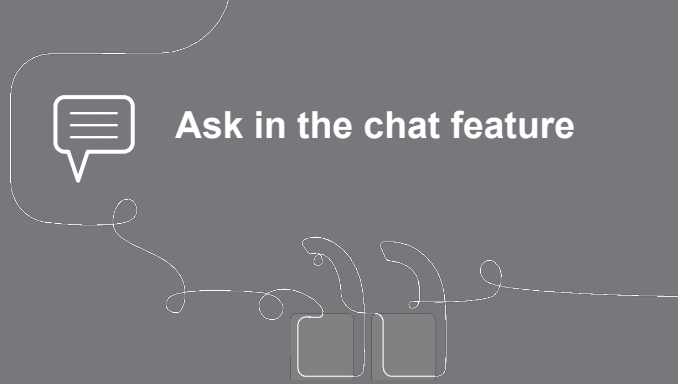


Plan for the day

- ✔ Experiencing the Launch Unit
- ✔ Launch Unit Components
- ✔ Planning to Teach
- ✔ Remote/Hybrid Resources
- Closing and reflection

Closing and Reflection





Questions?

Revisiting Day 2 Objectives

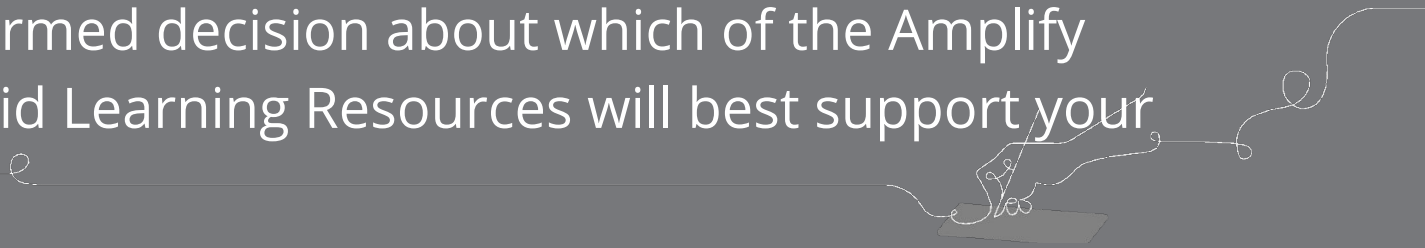
Are you able to...

- Understand the purpose of Launch Units?
- Apply program essentials to prepare to teach an Amplify Science Launch Unit?
- Make an informed decision about which of the Amplify Science Hybrid Learning Resources will best support your students?

Overarching goals

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

- Navigate the Amplify Science curriculum.
- Understand the program's multimodal approach and instructional materials.
- Apply program essentials to prepare to teach an Amplify Science unit.
- Make an informed decision about which of the Amplify Science Hybrid Learning Resources will best support your students.



Closing reflection

Answer in the chat feature

Based on our work today, share:

Brain: something you'll keep in mind

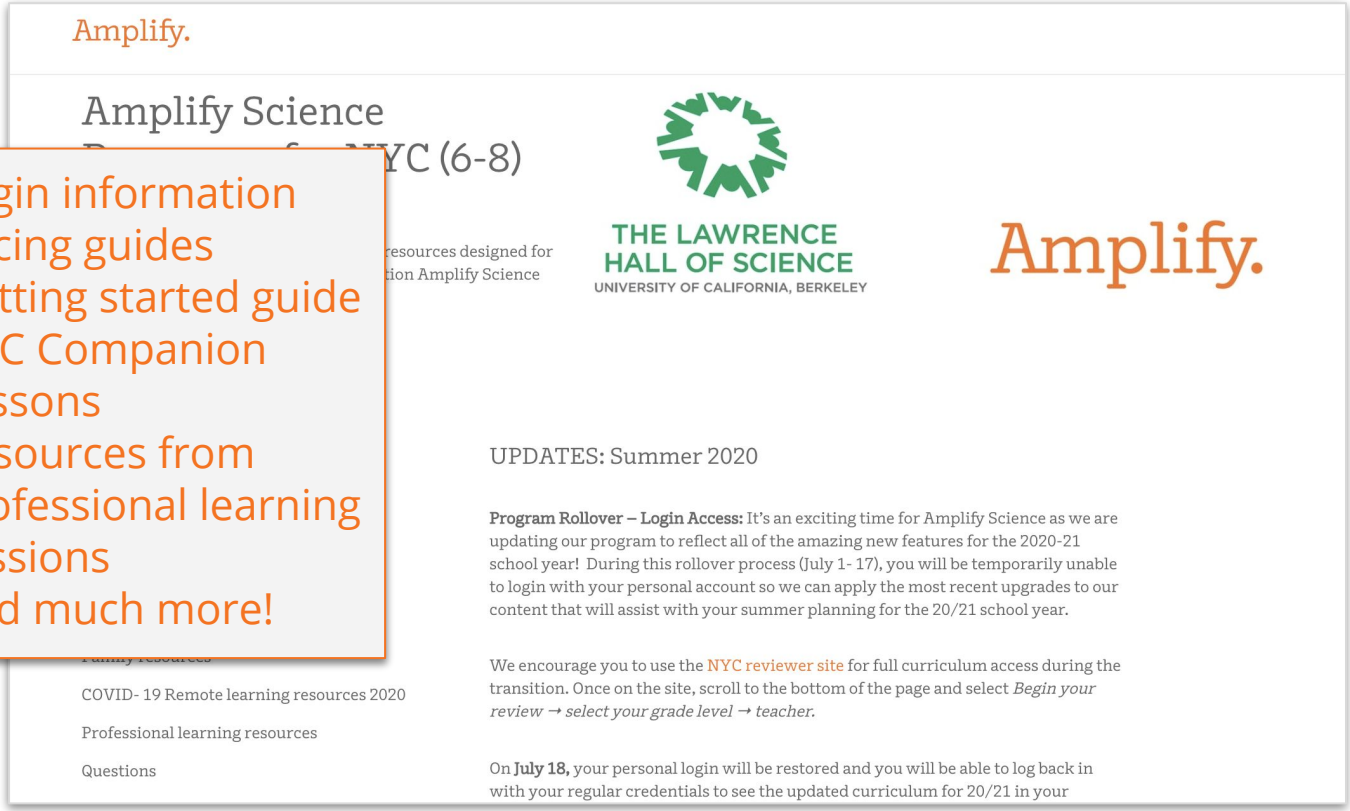
Heart: something you're feeling

Feet: something you're planning to do

New York City Resources Site

https://amplify.com/amplify-science-nyc-doe-resources/

- Login information
- Pacing guides
- Getting started guide
- NYC Companion Lessons
- Resources from professional learning sessions
- And much more!



Additional Amplify resources

CALIFORNIA DISCIPLINE

CA Science Program Guide

Program Guide

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

my.amplify.com/programguide

Amplify Help

Find advice and answers from the Amplify team.

my.amplify.com/help

Additional Amplify support

Customer Care

Access 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

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/InitialAmplifySciPL

Presenter name: XXX

Workshop title: Navigating Program Essentials 6-8

Modality: Remote