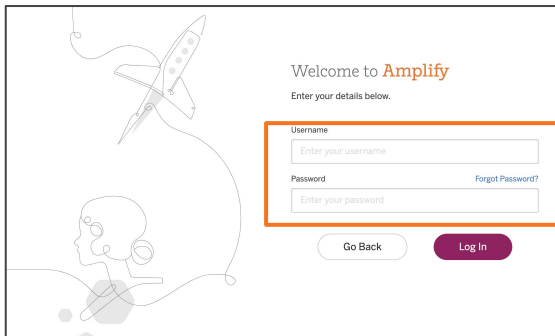
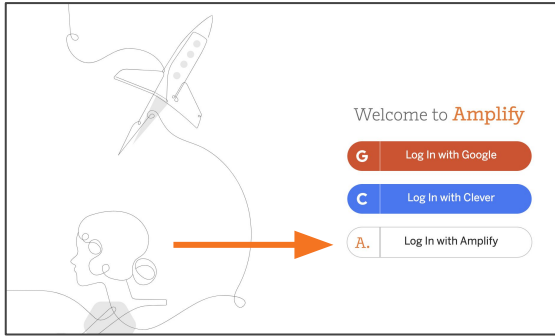
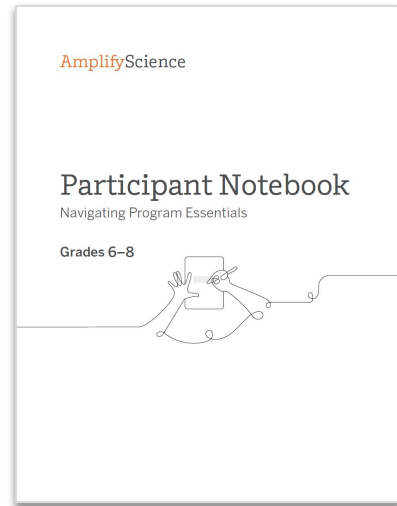


Welcome to Amplify Science!

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

Window #1

Meet - Etiwanda Grade 7 N x +
meet.google.com/hcs-dxpk-wrm?aut...

Miller Copy of Navigation Prop... x Amplify Curriculum
apps.learning.amplify.com/curriculum/#unit/8a31e095506df8a2015256f88ab544_californiaintegrated2019-2020#progress-build

Amplify Science CALIFORNIA > Plate Motion

OPEN PRINTABLE PROGRESS BUILD

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.

Underneath the soil, vegetation, and water that we see on the surface of Earth is the outer layer of Earth's geosphere, the solid part of our rocky planet. This outer layer of Earth is covered entirely with hard, solid rock that is divided into sections called plates. And, these plates can move.

Progress Build Level 2: The plates move on top of a soft, solid layer of rock called the mantle. At plate boundaries where the plates are moving away from each other, rock rises from the mantle and hardens, adding new solid rock to the edges of the plates. At plate boundaries where plates are moving toward each other, one plate moves underneath the other and sinks into the mantle.

Underneath the soil, vegetation, and water that we see on the surface of Earth is the outer layer of Earth's geosphere, the solid part of our rocky

Getting Ready to Teach
Materials and Preparation

Flexension Compilation
Investigation Notebook
NGSS Information for Parents and Guardians
Print Materials (11" x 17")
Print Materials (8.5" x 11")
Offline Preparation
Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.
Offline Guide

Window #2

Amplify Curriculum
apps.learning.amplify.com/curriculu...
Amplify Science CALIFORNIA > Plate Motion > Chapter 1 > Lesson 1.2

Lesson 1.2:
Using Fossils to Understand Earth

Lesson Brief (4 Activities) 1 WARM-UP Warm-Up T TEACHER-LED DISCUSSION Why Geologists Value Fossils 2 TEACHER-LED DISCUSSION Introducing Mesos

RESET LESSON GENERATE PRINTABLE LESSON

Lesson Brief

Overview
Materials & Preparation
Differentiation
Español rds

Digital Resources
All Projections
Completed Scientific Argumentation Wall Diagram
Video: Meet a Paleontologist
The Ancient Mesosaurus

New York City Resources Site

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



Amplify.

Amplify Science Resources for NYC (K-5)

Welcome! This site contains supporting resources designed for the New York City Department of Education Amplify Science adoption for grades K-5.

UPDATE: Summer 2020

Introduction

Getting started resources

Planning and implementation resources

Admin resources

Parent resources

COVID-19 Remote learning resources 2020

Professional learning resources

Questions

UPDATE: Summer 2020

Account Access: It's an exciting time for Amplify Science! We have access to the many updates and upgrades in our curriculum until late August/early September when we will update our rosters from STARS.

Any schools or teachers new to Amplify Science in 20/21 are encouraged to contact our Help Desk (1-800-823-1969) for access to your temporary login for summer planning.

Upcoming PL Webinars: Join us for our Summer 2020 Professional Learning opportunities in July for NEW teachers and administrators and August for RETURNING teachers and administrators. Links to register coming soon!

Site Resources

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

Amplify Science

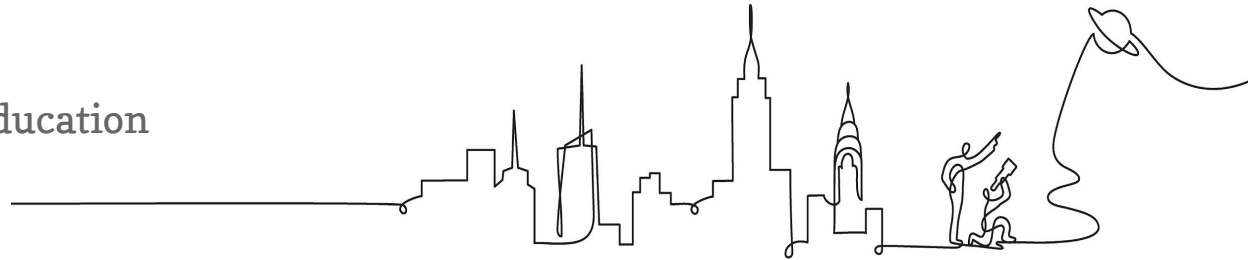
New York City

Introduction to Amplify Science NYC Summer Institute, Day 1

Grade 7: Microbiome and Metabolism

New York City Department of Education
July 21, 2020

Presented by

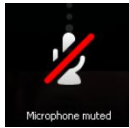


Remote Professional Learning Norms

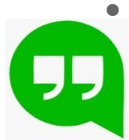


Orient yourself to the platform

- *“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

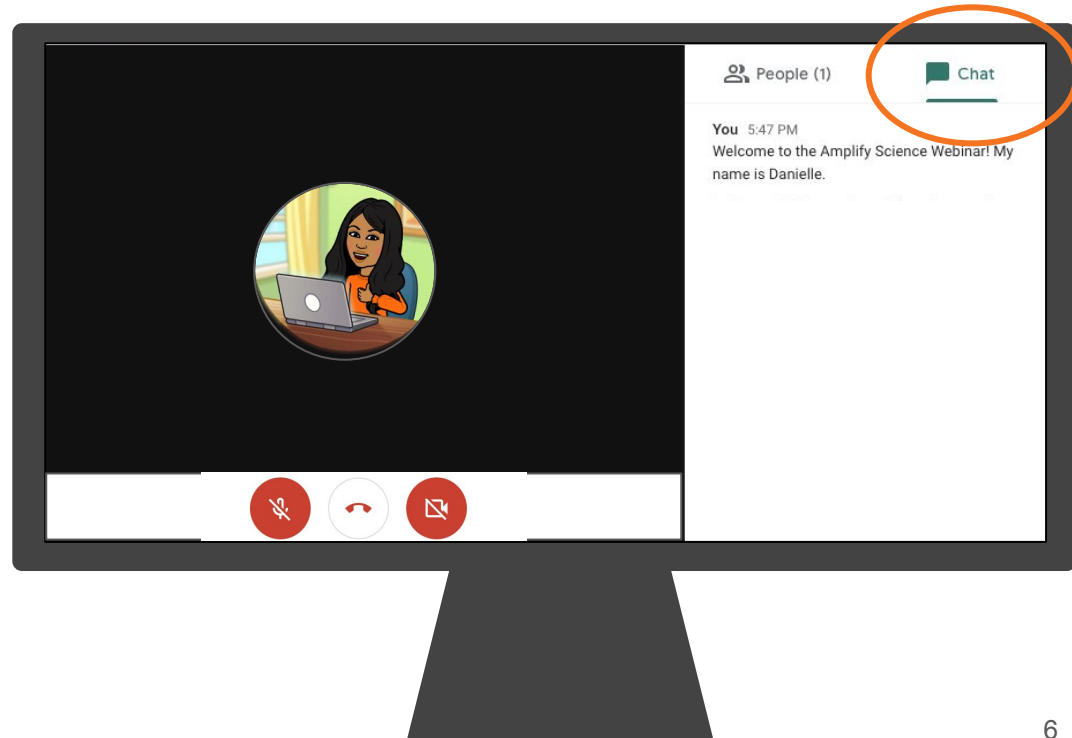


Engage at your comfort level - chat, ask questions, discuss.

Introductions!

Who do we have in the room today?

- **Question 1:** What do you love about teaching science?
- **Question 2:** What do you need to learn today and tomorrow to feel confident with this new curriculum?



Overarching goals

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

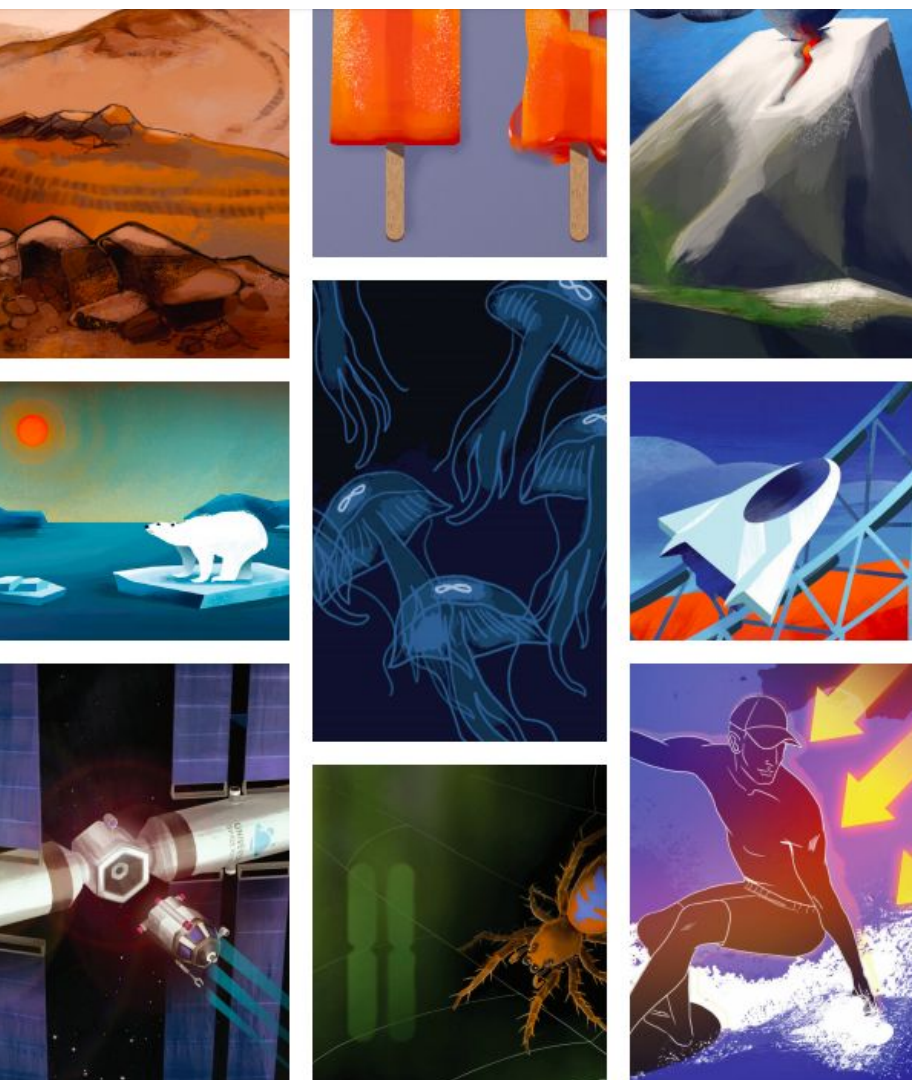
- Navigate the Amplify Science curriculum.
- Understand the program's multimodal approach and instructional materials.
- Apply program essentials to prepare to teach an Amplify Science unit.
- Make an informed decision about which of the Amplify Science Hybrid Learning Resources will best support your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



Day 1 Objectives

By the end of today you will be able to:

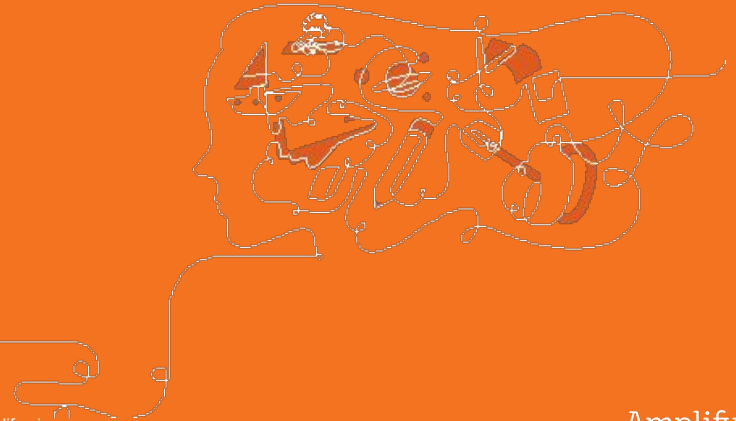
- Navigate the Amplify Science curriculum.
- Understand the program's phenomenon-based approach and instructional materials.



Plan for the day

- What is Amplify Science?
- Navigation essentials
- Teaching a phenomenon-based lesson
- Unit Guide Resources
- Assessments
- Closing and reflection

What is Amplify Science?





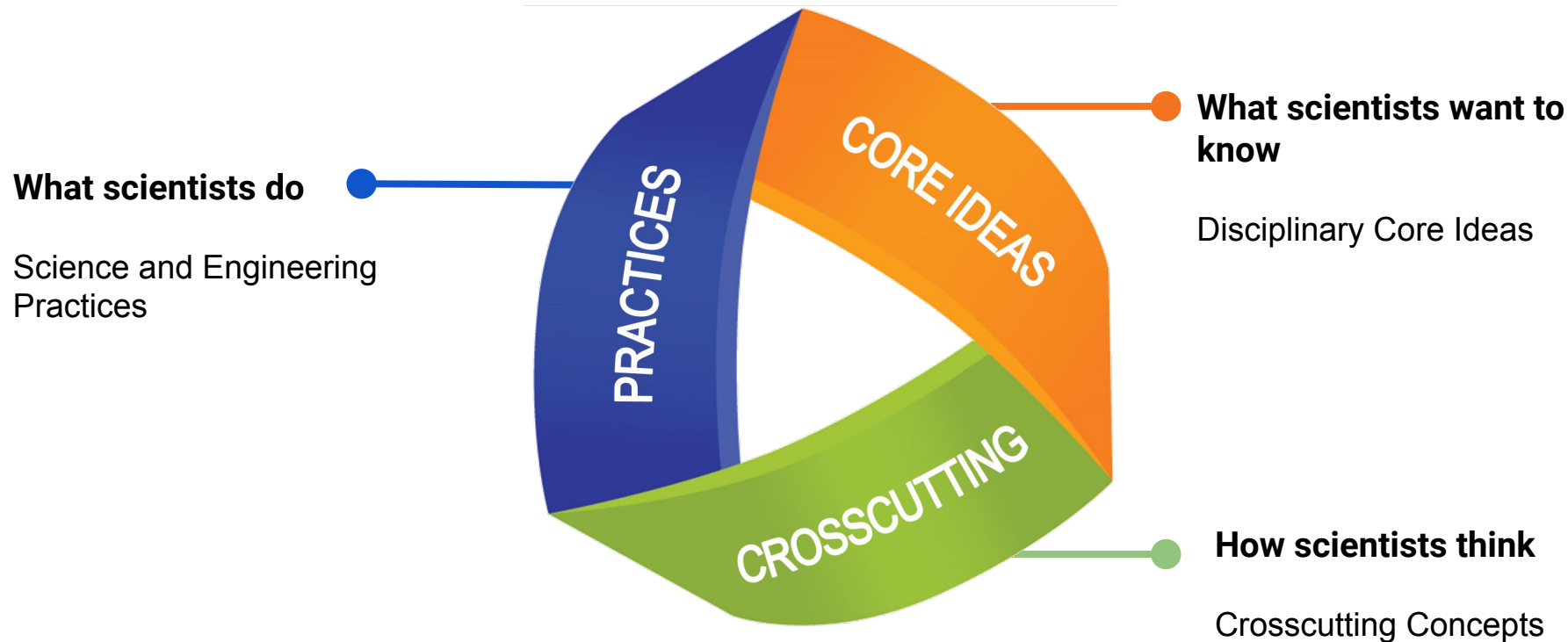
THE LAWRENCE
HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

+ Amplify.

Amplify Science

Next Generation Science Standards

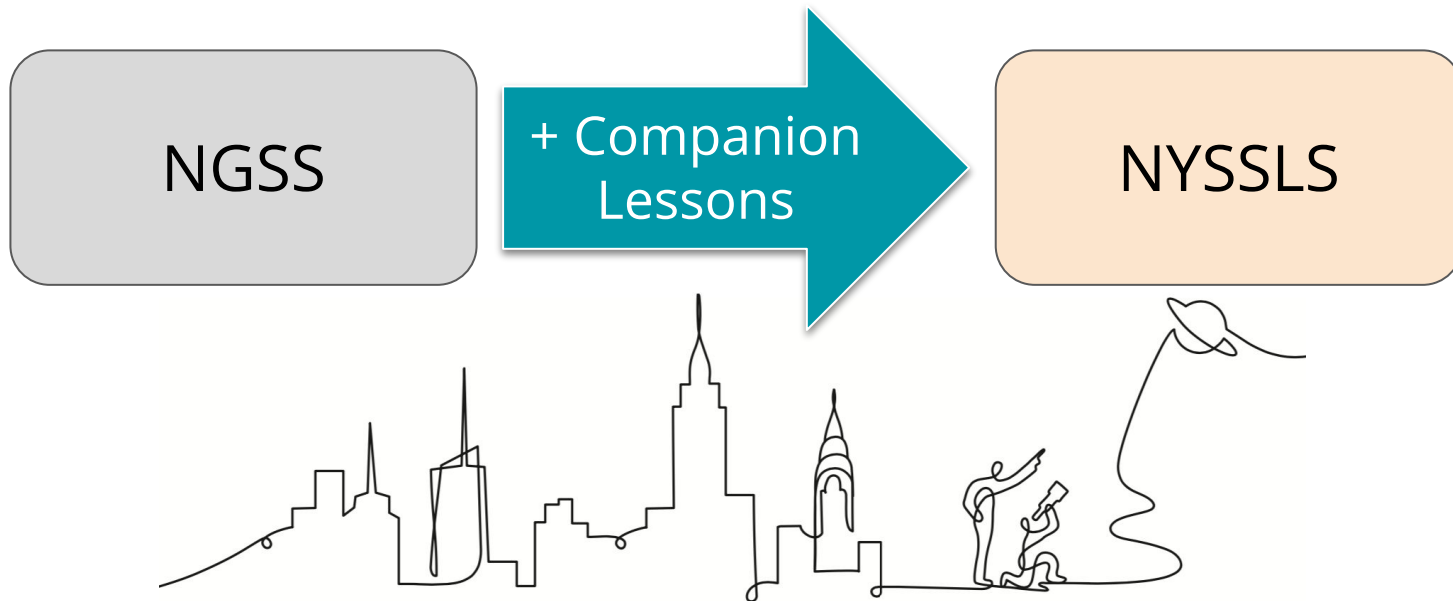
Designed to help students build a cohesive understanding of science



NYC Companions

Amplify Science

Amplify Science NYC Edition



NYC Companion Lesson Slides, Grade 7

<https://amplify.com/resources-page-for-nyc-6-8/>

Grade 7 lesson guides and copymasters

Metabolism: Reading “How You Are Like a Sneezing Iguana” >

Metabolism: Plant Growth Investigations >

Metabolism: Reading “How Do Trees Grow So Huge Without Eating?” >

Phase Change: Reading “Icy Heat” >

Chemical Reactions: Identifying Substances >

Chemical Reactions: Mixtures, Properties, and Separation >

Slides for the first unit will be available on the NYC Resources site in September.

Middle School Units: **Launch; Core; Internship**



11 Lessons
Geology on Mars



19 Lessons
Plate Motion



10 Lessons
Plate Motion Engineering Internship

AmplifyScience

authored by  THE LAWRENCE
HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

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Middle School Curriculum New York City Edition

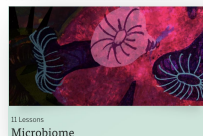
Grade 6

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



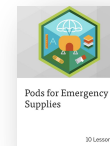
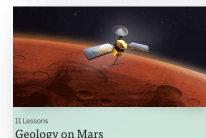
Grade 7




- 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

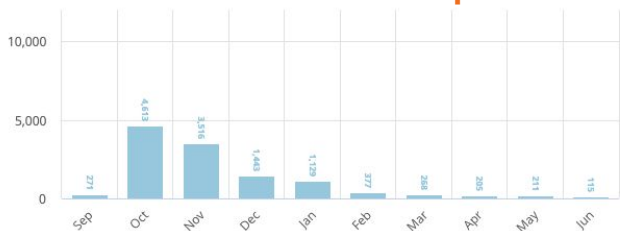


Sept.				Oct.				Nov.				Dec.				Jan.				Feb.				Mar.				Apr.				May				Jun.								
9/9	9/16	9/23	9/30	10/7	10/14	10/21	10/28	11/4	11/11	11/18	11/25	12/2	12/9	12/16	12/30	1/6	1/13	1/20	1/27	2/3	2/10	2/24				3/2	3/9	3/16	3/23	3/30	4/6	4/20	4/27				5/4	5/11	5/18	5/25	6/1	6/8	6/15	6/22
																																												
Launch Unit: Harnessing Human Energy				Thermal Energy				Populations and Resources				Matter and Energy in Ecosystems				Weather Patterns				Ocean, Atmosphere, and Climate				Earth's Changing Climate																				
																																												
Launch Unit: Microbiome				Metabolism				Phase Change				Chemical Reactions				Plate Motion				Engineering Internship: Plate Motion				Rock Transformations				Engineering Internship: Earth's Changing Climate																
																																												
Launch Unit: 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												
9/9	9/16	9/23	9/30	10/7	10/14	10/21	10/28	11/4	11/11	11/18	11/25	12/2	12/9	12/16	12/30	1/6	1/13	1/20	1/27	2/3	2/10	2/24				3/2	3/9	3/16	3/23	3/30	4/6	4/20	4/27				5/4	5/11	5/18	5/25	6/1	6/8	6/15	6/22

7th Grade Overview: Scope and Sequence

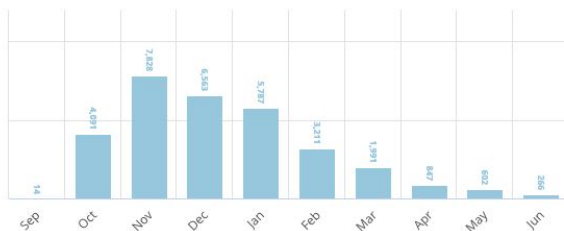
Microbiome

Sept



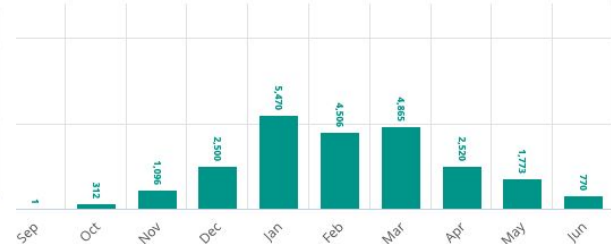
Metabolism

Oct-Nov



Phase Change

Nov-Dec



Chemical Reactions

Jan-Feb

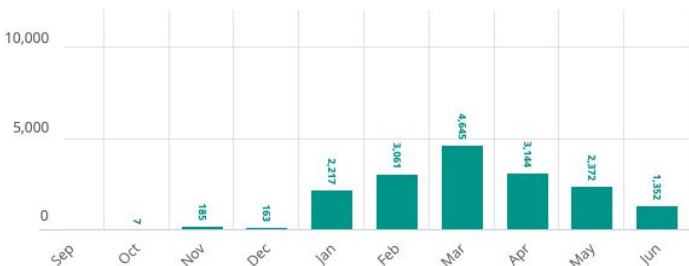
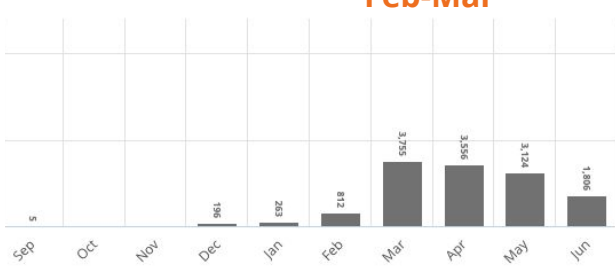


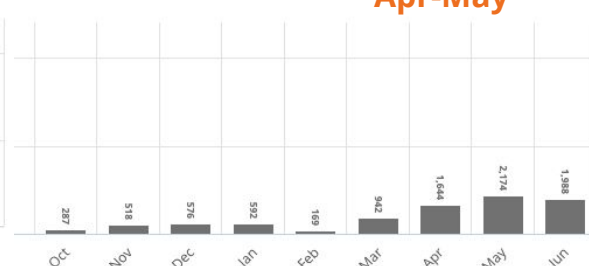
Plate Motion

Feb-Mar*



Rock Transformations

Apr-May



Unit at a Glance: Metabolism



Metabolism

16 lessons

45 minutes each

3 assessment days

Domain: Life Science

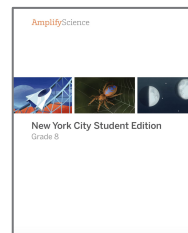
Unit type: Core

Student role: Medical Researchers

Phenomenon: Elisa, a young patient, feels tired all the time.

Middle School Unit Resources

NYC Print student editions



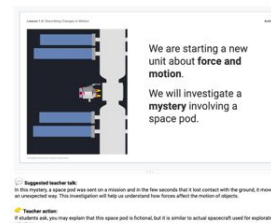
Investigation
Notebooks or digital
student experience



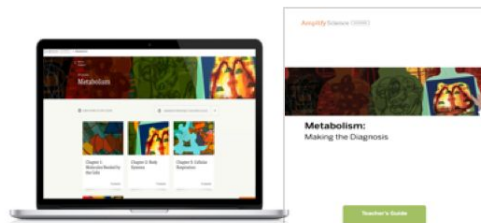
Articles
(digital or print)



Simulations and other
digital tools



Classroom Slides



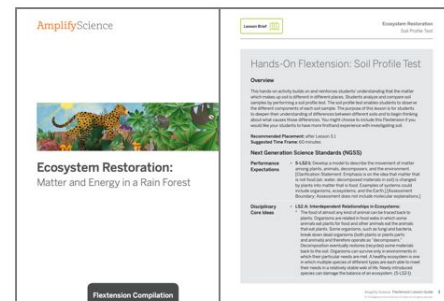
Teacher's Guide
(digital or print)

ACTIVITIES		LEVELS
SUBMISSIONS	LAST SUBMISSION	FEEDBACK
23/05	5:38 PM Max Atchley	0
23/05	5:00 PM Max Atchley	2 reading
23/05	4:57 PM Max Atchley	0
23/05	1:42 PM Max Atchley	0

Assessments and
Reporting



Hands-on and print
materials



Hands-on Flexensions

Classwork

8th Grade

ACTIVITIES LEVELS

UNIT: Force and Motion | CHAPTER: 1 | Force and Velocity | LESSON: 1 | Pre... X 2 | Des... X | ACTIVITY-TYPE: All

ACTIVITY	SUBMISSIONS	LAST SUBMISSION	FEEDBACK
CLASS Multiple Choice Lesson 1	26/26	5:38 PM Wed. 4/17/19	0
CLASS Written-Response Question #1 Lesson 1	23/26	5:00 PM Wed. 4/17/19	2 awaiting
CLASS Written-Response Question #2 Lesson 1	23/26	4:57 PM Wed. 4/17/19	0
WARM-UP Warm-Up Lesson 2	23/26	1:42 PM Thu. 4/18/19	0

Classwork

Pre-Unit Assessment
Plate Motion Lesson 1

← Zimba | Anthony Bryk

Multiple Choice

1. Which statement best describes what Earth's outer layer is like underneath the surface in the image?

a Underneath both the soil and the ocean, Earth's outer layer is made of sand and water.

b Underneath both the soil and the ocean, Earth's outer layer is made of hard, solid rock. ✓

c Underneath the soil, Earth's outer layer is made of hard, solid rock. Underneath the ocean, Earth's outer layer is made of sand.

d Hard-working

65% of students answered correctly.

2. Dr. Robie and her team of geologists have been studying GPS data that shows that two plates moved apart. Which diagram shows what happened between the two plates as they moved away from each other?

a Diagram A: A new plate from underneath filled in the gap that was created by the plates moving apart.

b Diagram B: Sand and dirt filled in the gap that was created by the plates moving apart.

c Diagram C: Ocean water filled in the gap that was created by the plates moving apart. ✓

d Diagram D: Soft, solid rock from underneath the plate's rose and hardened, adding solid rock to the edges of both plates.

87% of students answered correctly.

Send feedback

Annotations: Easily advance to the next student; Use the feedback panel to input rubric scores, comments, and award badges; Easily reference the total number of students who answered an automatically graded question correctly.

Classwork

Pre-Unit Assessment
Plate Motion Lesson 1

← Zimba | Anthony Bryk

Multiple Choice

Written Response #1

A team of geologists learned from GPS data that two continents that have an ocean between them are moving toward each other. Diego's little brother hears this and cannot believe that continents can move and is worried that those two continents are going to run into each other. How would you explain to him what is happening?

I would tell Diego's little brother that he doesn't have to worry about the two continents moving towards each other because **plate motion is a gradual process** that takes place over a very long period of time. Plate collisions don't happen suddenly. **The rate of plate motion** is so slow that the geologists discovered is probably an extremely small amount and Diego **wouldn't be able to detect that tiny change.**

Word Count: 70

Written Response #2

SCORES COMMENTS

Keep up the good work! 🍀🍀🍀

① You're right on track!

② Stay after school tomorrow so we can go over this in more detail.

③ This rate may seem slow by human standards, but because this process has been going on for millions of years, it has resulted in plate movement of thousands of kilometers. Seafloor spreading over the past 100 to 200 million years has caused the Atlantic Ocean to grow from a tiny inlet of water between the continents.

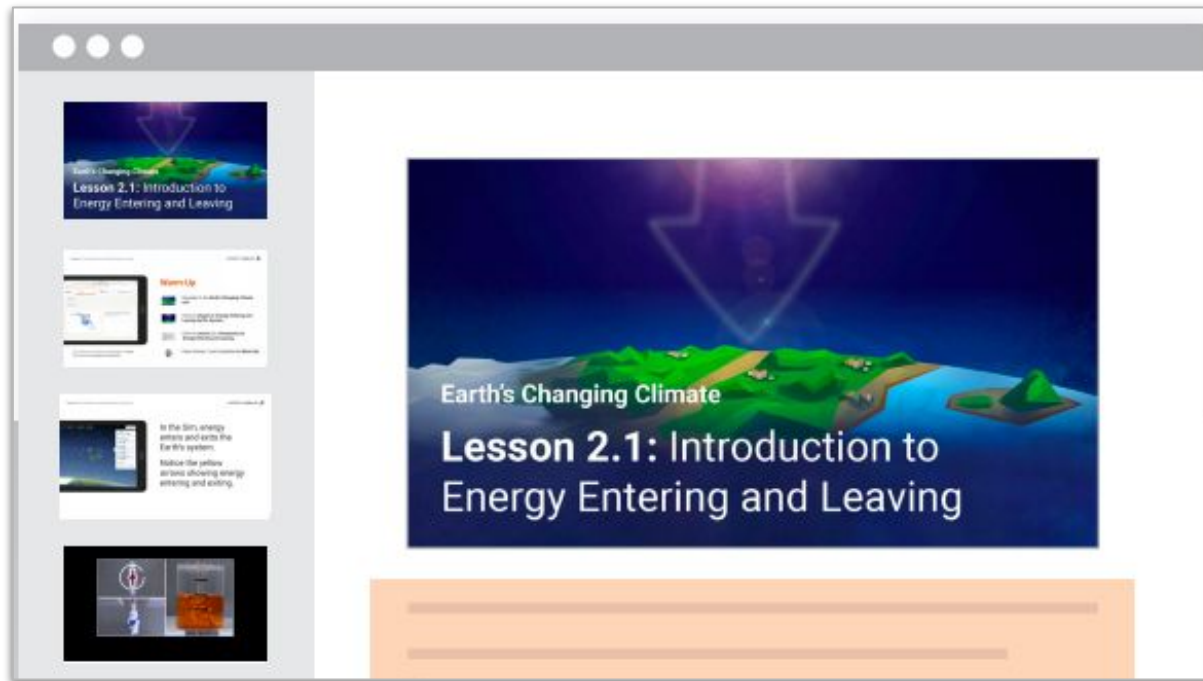
Send feedback

Annotation: Include emoji

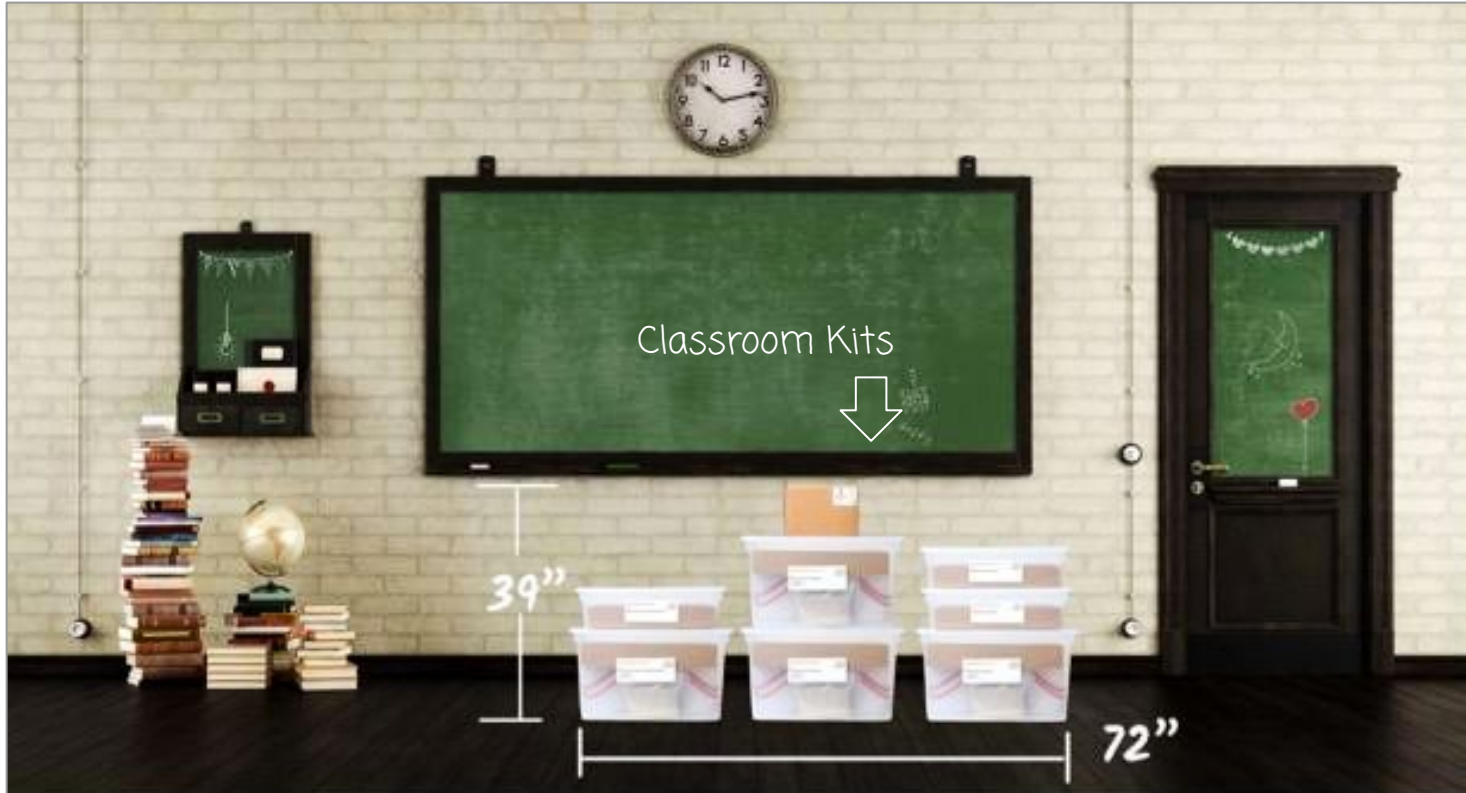
Coming Soon for Back to School!

Classroom Slides

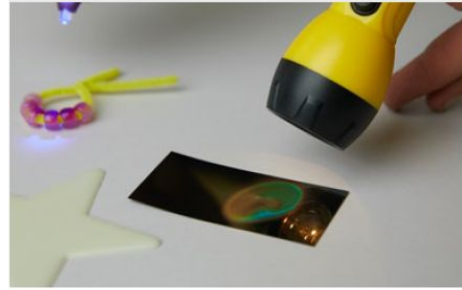
Each lesson will have a downloadable and editable PowerPoint file to help guide teachers and their students through the lesson.



Classroom Kits



Hands On Learning Materials



Classroom Wall Print Materials

Unit Question

How do the trillions of cells in the human body get what they need to function, and what do the cells do with the things they absorb?

Chapter 1 Question

Why does Elisa feel tired all the time?

Investigation Question

What does the human body need to function?

Key Concepts

1. A functioning human body has molecules from food (glucose and amino acids) and molecules from air (oxygen) in its cells.

Vocabulary

metabolism

molecule

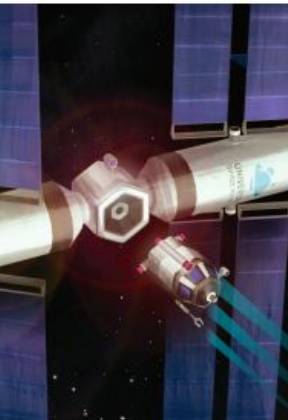
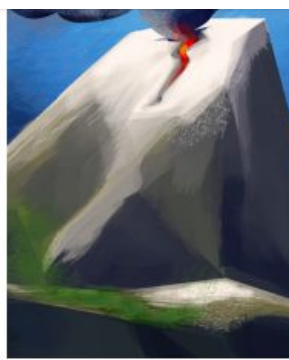
amino acid



Ask in the chat feature



Questions?

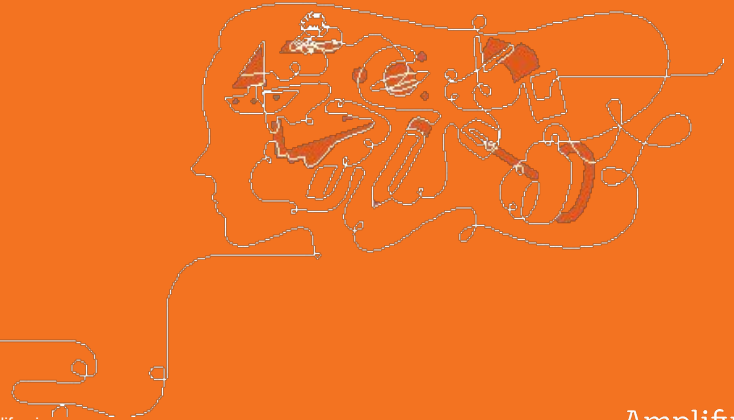


Plan for the day

✓ What is Amplify Science?

- Navigation essentials
- Teaching a phenomenon-based lesson
- Unit Guide Resources
- Assessments
- Closing and Reflection

Navigation Essentials



Unit



Chapters



Lessons



Activities

19 Lessons
Metabolism

Chapter 1:
Molecules Needed by
the Cells

3 Lessons

Chapter 2: Body
Systems

7 Lessons

Chapter 3: Cellular
Respiration

5 Lessons

Chapter 4:
Metabolism and
Athletic
Performance

4 Lessons

Lesson 3.1:
Learning About
Energy Release in
the Body

Lesson 3.2:
Exploring Chemical
Reactions

Lesson 3.3:
Cellular Respiration,
Growth, and Repair

Lesson 3.4:
"Blood Doping:
Messing with
Metabolism to Win
Races"

Lesson 3.5:
Modeling Cellular
Respiration in an
Athlete's Body

1	WARM-UP Warm-Up	2	READING Examining Evidence About Jordan Jones's...	3	STUDENT-TO-STUDENT DISCUSSION Discussing Evidence About Jordan Jones's...	4	TEACHER-LED DISCUSSION Considering Claim 2
---	--------------------	---	--	---	--	---	---

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

Lesson 1.2:
Welcome to Medical School

Lesson Brief (4 Activities) | T TEACHER Introducing Medical Student Role | 1 WARM-UP Warm-Up | T TEACHER Generating Claims About Elisa | 2 SIM Introducing the Metabolism Simulation | 3 TEACHER-LED DISCUSSION Returning to the Patient | 4 HOMEWORK Homework

RESET LESSON

Step 1 Overview
Materials & Preparation

Step 2 Overview

Step 3 Differentiation
Standards
Vocabulary
Unplugged?

Español

GENERATE PRINTABLE LESSON GUIDE

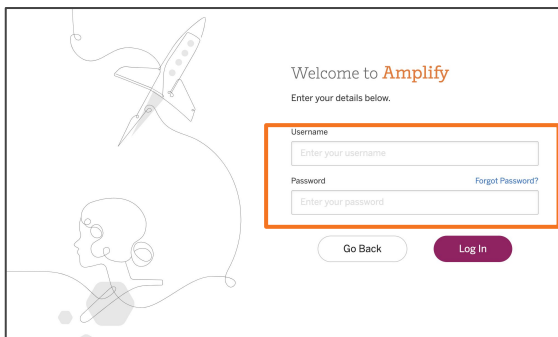
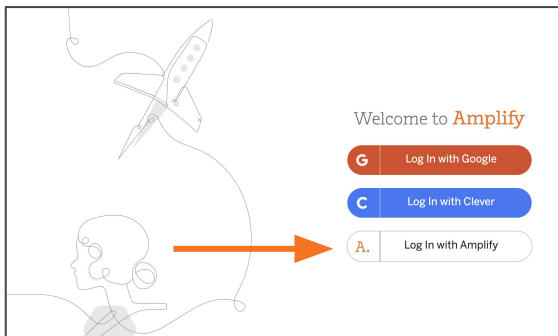
Digital Resources

- All Projections
- Video: Elisa's Condition
- Completed Scientific Argumentation Wall Diagram
- Metabolism Investigation Notebook, pages 5-8
- Printable Metabolism Glossary
- Printable Metabolism Multi-Language

Students begin the unit by viewing a dramatic video that immerses them in their new role as medical students. Students build on the video by brainstorming initial thoughts about why their patient, Elisa, could be feeling so tired. The teacher helps the class to create plausible alternative claims from these initial ideas. Students are then introduced to the *Metabolism* Simulation, and they begin to observe how molecules travel through systems in a healthy body. The purpose of this lesson is to help students begin to make connections between macro-effects, such as how tired someone feels, and the microscopic world of metabolism—the body's use of molecules for energy and growth.

Welcome to Amplify Science!

Do Now: Login



1. Go to **learning.amplify.com**
2. Select **Log in with Amplify**
3. Enter teacher demo account credentials

- xxxxxxxx@pd.tryamplify.net
- Password: xxxx

4. Explore as we wait to begin

Lesson Level Exploration

Scavenger Hunt

Lesson-level scavenger hunt

Goals:

- Practice navigating at the lesson level and deepen your understanding of the student role and anchor phenomenon in your unit.

PART 1: Lesson 1.1.

Task	Notes
Navigate to Lesson 1.1 in your Launch unit. Scroll down to the Lesson Brief and scroll/click to view the Overview. Skim the section then answer the following questions:	
What is the purpose of this lesson?	
How many activities are in the lesson?	
How long is the activity that introduces the students to the role they'll play in the unit? <ul style="list-style-type: none">Microbiome: Activity 1<ul style="list-style-type: none">Harnessing Human Energy: Teacher-only activity between activities 1 and 2.Geology on Mars: Teacher-only activity between activities 3 and 4.	

Task	Notes
Scroll/click to view Materials & Preparation.	
List the materials you'll need for this lesson.	
Describe one step of preparation you will need to do before this lesson, between classes, and at the end of the day.	

8 Grade 6-8
Navigating Program Essentials

6-8 Lesson-level scavenger hunt cont.

Task	Notes
Scroll up to the Lesson Map. Select the activity in which the student role is introduced. [Tip: Use the arrow at the end of the lesson map to reveal all activities.] Read the steps for teaching the activity listed in the Step-by-Step to gain a better understanding of the activity.	
What is the student role and how is it introduced?	

Task	Notes
Try the following navigation features: <ul style="list-style-type: none">Click on the Instructional Guide icon to see the student view of the lesson, and click on it again to toggle back to the teacher instructions.Click Next Activity or Next at the bottom to read the next activity in the lesson.	
What additional resources can you find on each page of the guide—what links, tabs, and other supports do you notice?	

PART 2: Introduction of the anchor phenomenon or design problem

Task	Notes
Use the breadcrumb (Unit-Chapter-Lesson) trail (top left) to navigate to the lesson and activity in which the anchor phenomenon is introduced. <ul style="list-style-type: none">Microbiome: Lesson 2.2: Teacher-only activity video message and Activity 3 message from the Microbiome Research InstituteGeology on Mars Lesson 1.2, Activity 3. (be sure to click NEXT at the bottom)Harnessing Human Energy: Lesson 1.1: Teacher-only activity video message (introduces both the student role and the design problem)	
How is the design problem or anchor phenomenon introduced to students? What ideas or questions do you think students will have about the problem they're asked to solve?	

9



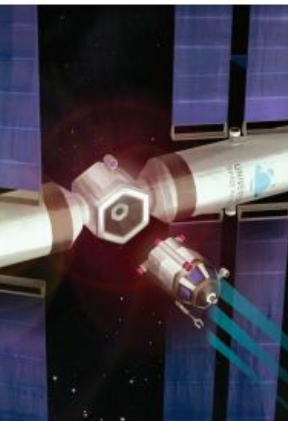
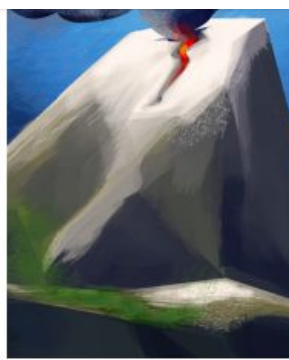
Ask in the chat feature



Questions?

5 min break





Plan for the day

✓ What is Amplify Science?

✓ Navigation essentials

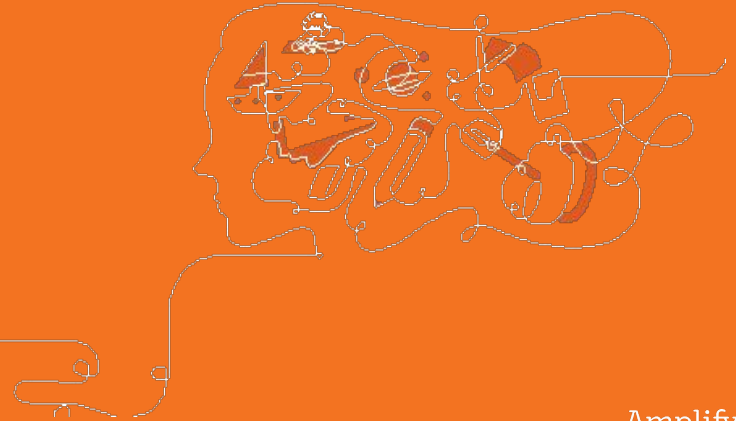
● Teaching a phenomenon-based lesson

● Unit Guide Resources

● Assessments

● Closing and Reflection

What is phenomenon-based instruction?



Next Generation Science Standards

Phenomenon-based teaching and learning

A scientific phenomenon is an **observable event** that occurs in the universe that we can use science ideas to explain or predict.



Next Generation Science Standards

Think-Type-Discuss: How might learning be different?

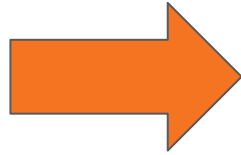
Topic-based	Phenomenon-based
What is the water cycle?	What caused the storms in this area to be severe?
What is an ecosystem?	Why are there suddenly so many moon jellies?
How does light energy interact with matter?	Why does Australia have an elevated skin cancer rate?

Comparing topics and phenomena

A shift in science instruction

from learning about

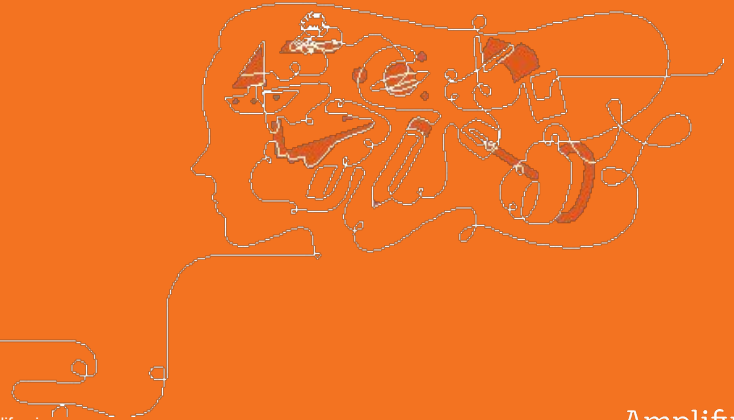
(like a student)



to figuring out

(like a scientist)

Teaching a phenomenon-based lesson



Go 'Live' to Model Preparing to Teach

Classroom Wall

Unit Question

How do the trillions of cells in the human body get what they need to function, and what do the cells do with the things they absorb?

Chapter 1 Question

Why does Elisa feel tired all the time?

Investigation Question

What does the human body need to function?

Key Concepts

1. A functioning human body has molecules from food (glucose and amino acids) and molecules from air (oxygen) in its cells.

Vocabulary

metabolism

molecule

amino acid

Transition to model lesson



Metabolism

**Lesson 1.2: Welcome to
Medical School**



Activity 1

Warm-Up



Warm-Up

Warm-Up

Why do you think your new patient, Elisa, is feeling tired all the time? Explain your ideas.

We will start with a Warm-Up each day to get us thinking about science ideas



Complete the Warm-Up by **writing your answers to the question.**

This activity can also be completed using **page 6 of the Investigation Notebook**

Why do you think your new patient, Elisa, is feeling tired all the time? Explain your ideas.



Discuss your ideas about the Warm-Up question.



Elisa is feeling tired:

because she isn't getting enough sleep.

because she is not eating enough food or not eating the right foods.

because she has a medical condition.

Let's summarize our ideas as a class.



What are possible reasons why Elisa feels tired?

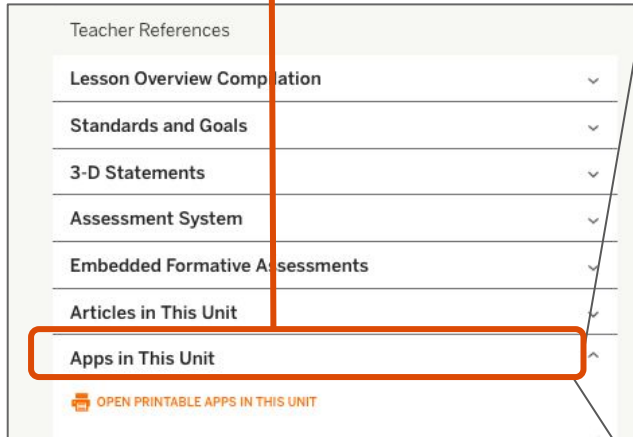
Activity 2

Introducing the Metabolism Simulation




Quick Tip! Teacher Resource for Sims

Use 'Apps in this Unit' in the teacher Unit Guide



Teacher References

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

 OPEN PRINTABLE APPS IN THIS UNIT

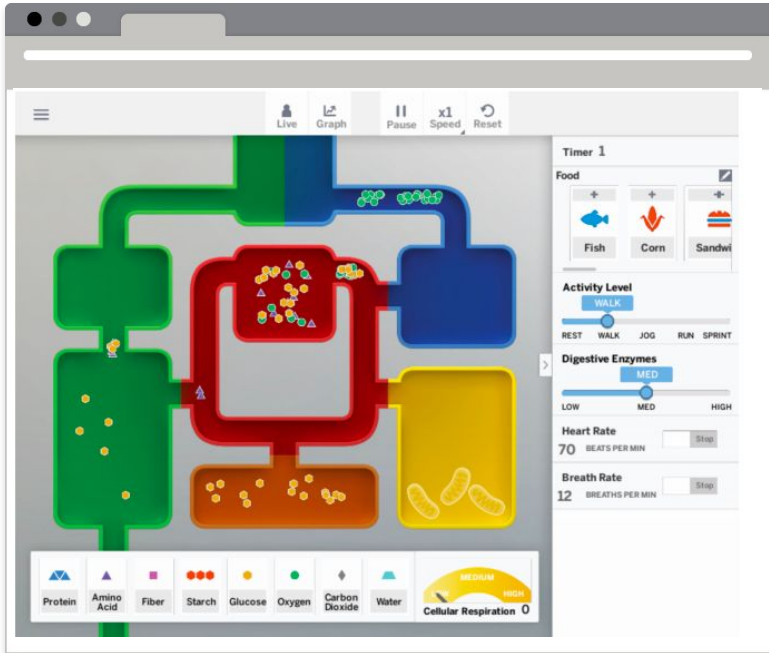
Apps in
This Unit



Metabolism
Teacher References

Using the *Metabolism* Sim

- Begin by selecting one of the model Bodies (for example, Healthy Body) in the menu accessible from the navigation bar in the upper left-hand corner.
- Select either Observe Mode (which allows you to observe and manipulate without a time limit) or Test Mode (which allows you to set up and run controlled experiments for a certain length of time). Students should begin in Observe Mode the first time they use the Simulation.
- In Live View, where you can observe the body systems directly, try the following:
 - Feed the body by selecting Fish, Corn, or Sandwich.
 - Adjust the Activity Level or the Digestive Enzymes using the sliders on the right.
 - Stop or start the heart or breath rate by selecting "Stop."
 - Hide or show molecules by selecting them in the lower bar.
 - Select a body system to isolate it and reveal the name of the system and labels for parts of the system.
 - Switch to Cell View by selecting the yellow Cell, then selecting the magnifying glass to zoom in.
 - Switch back and forth between Live View and Graph View by selecting their buttons on the top menu bar.
 - Speed up the Sim by selecting x1 and choosing a new speed.

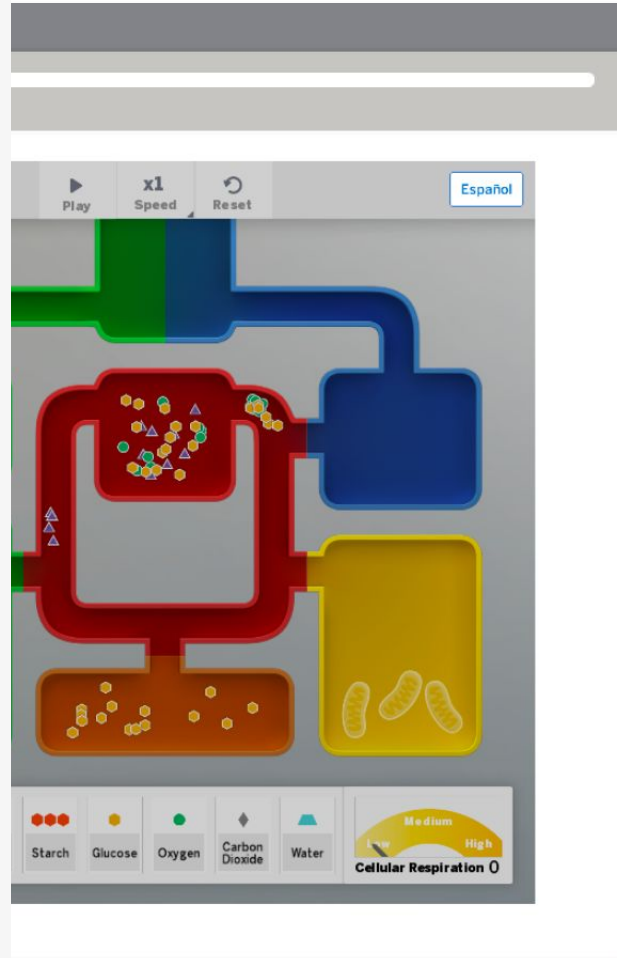


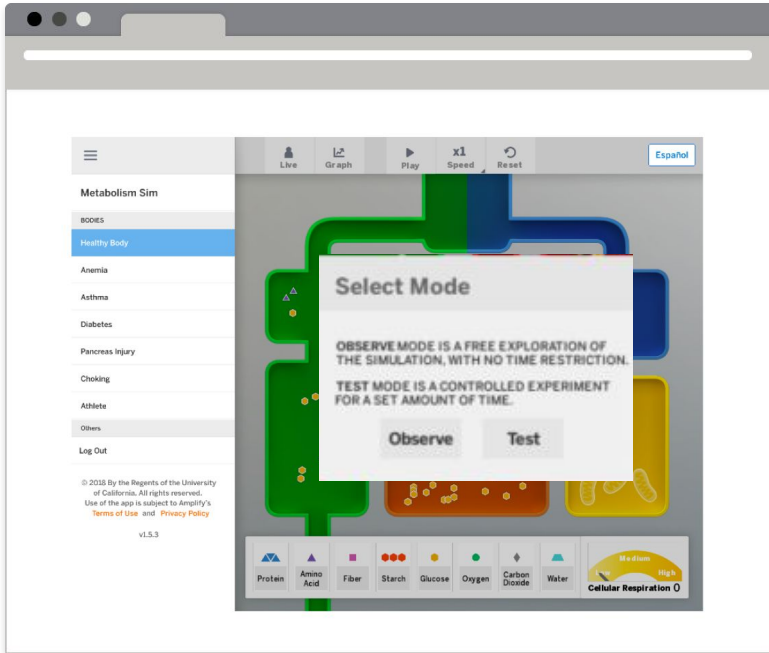
We will use a Simulation to help us learn more about how human body systems function.

Let's **review the directions** together.

Observing Molecules in the Sim

1. Launch the *Metabolism Simulation*.
2. Select HEALTHY BODY from the menu.
3. Select OBSERVE.
4. Explore with your partner.
5. Think about these questions:
 - How does the Simulation work?
 - What do you notice?





First, you will work in pairs to explore **Observe** mode of the Sim.



How does the Simulation work?

What do you notice?

This activity can also be completed using [page 7](#) of the **Investigation Notebook**.

Because Elisa feels tired all the time, this indicates that something might be wrong in her body.

To figure out what might be going wrong in her body, we first need to think about what we already know about how **healthy bodies function**. This will help us know what to look for in the Metabolism Simulation.

Partner Discussion

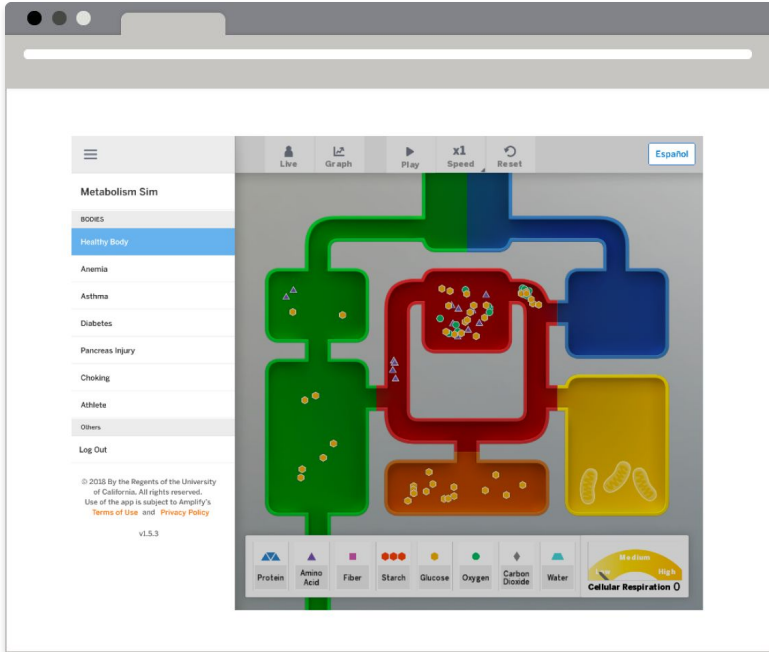
Discuss the following question with your partner.

1. What are some things you know the human body needs to function?

Partner Discussion

Discuss the next question with your partner.

2. What are signs you can observe when a human body is functioning properly?



You will now use the Sim to **observe** what happens to the food and air that enter this healthy Simulation body.

This activity can also be completed using **page 7 of the Investigation Notebook**.

Unit Question

How do the trillions of cells in the human body get what they need to function, and what do the cells do with the things they absorb?



Chapter 1 Question

Why does Elisa feel tired all the time?

The interface features a top toolbar with icons for Live, Graph, Pause, Speed (x1), and Reset, along with a language selector set to 'Español'. The main workspace contains a large play button and a yellow container labeled 'Cells in the Body' which houses several mitochondria. A 'MITOCHONDRIA' label is positioned below the container. At the bottom, a toolbar provides icons for Protein, Amino Acid, Fiber, Starch, Glucose, Oxygen, Carbon Dioxide, and Water, alongside a 'Cellular Respiration' gauge showing a 'Medium' level.

Timer 38

Food

- Fish
- Corn
- Sand

Activity Level

WALK

REST WALK JOG SPRINT

Digestive Enzymes

MEDIUM

LOW MEDIUM HIGH

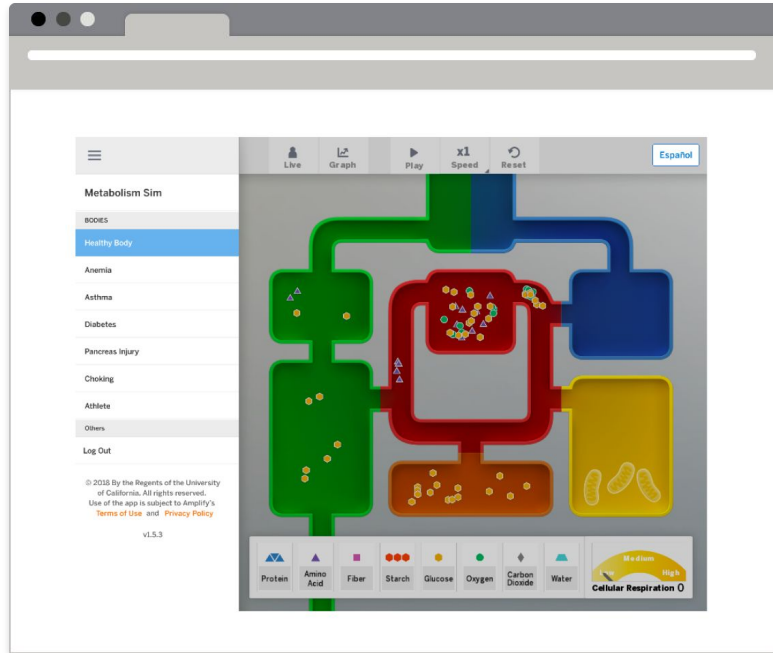
Heart Rate
74
Beats Per Min

Breath Rate
12
Breaths Per Min

Protein Amino Acid Fiber Starch Glucose Oxygen Carbon Dioxide Water

Cellular Respiration 0

The screenshot shows a virtual lab interface for a cellular respiration simulation. The main area is a yellow container representing a cell, with the text "One of the Trillions of Cells in the Human body" on the left. Inside the cell, there are green circles representing oxygen, purple triangles representing carbon dioxide, and three yellow mitochondria. A play button is in the center of the cell. Below the cell is a label "MITOCHONDRIA" with a right-pointing arrow. At the top of the interface are controls: a menu icon, "Live" (person icon), "Graph" (line graph icon), "Pause" (two vertical bars icon), "Speed" (x1 icon), and "Reset" (circular arrow icon). A "Español" button is in the top right. On the right side, there are several control panels: "Timer 51", "Food" (with buttons for Fish, Corn, and Sand), "Activity Level" (with a slider set to WALK, and options REST, WALK, JOG, RUN, SPRINT), "Digestive Enzymes" (with a slider set to MEDIUM, and options LOW, MEDIUM, HIGH), "Heart Rate 68 Beats Per Min" (with a "Stop" button), and "Breath Rate 12 Breaths Per Min" (with a "Stop" button). At the bottom, there is a row of substance buttons: Protein (blue triangle), Amino Acid (purple triangle), Fiber (pink square), Starch (red circles), Glucose (yellow circle), Oxygen (green circle), Carbon Dioxide (grey diamond), and Water (blue square). To the right of these buttons is a "Cellular Respiration 2" gauge with a needle pointing to "Medium" on a scale from "Low" to "High".



You will now use the Sim to observe which molecules are entering the cell.

This activity can also be completed using **page 7 of the Investigation Notebook**.

Activity 3

Returning to the Patient



Vocabulary



Metabolism

The body's use of molecules for energy and growth

Think about the claims we generated about the possible reasons why Elisa is feeling tired

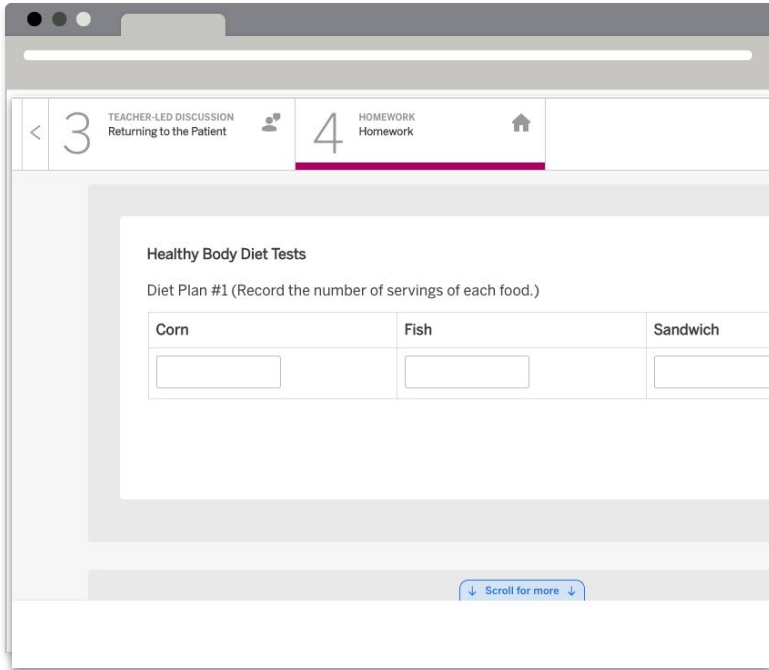


Do you have any new insights or changes in thinking about these claims after observing the Simulation.

Activity 4

Homework





The screenshot shows a web browser window with a navigation bar at the top. The navigation bar has two tabs: tab 3 is labeled 'TEACHER-LED DISCUSSION Returning to the Patient' and tab 4 is labeled 'HOMEWORK Homework' and is currently selected. Below the navigation bar, the main content area is titled 'Healthy Body Diet Tests' and contains the instruction 'Diet Plan #1 (Record the number of servings of each food.)'. Below this instruction is a table with three columns: 'Corn', 'Fish', and 'Sandwich'. Each column has a text input field below it. At the bottom of the content area, there is a blue button with the text 'Scroll for more' and a downward arrow on each side.

Corn	Fish	Sandwich
<input type="text"/>	<input type="text"/>	<input type="text"/>



For homework, **experiment** with different diets in the Sim to see how the diet affects the number of molecules getting to the cells.

Name: _____ Date: _____

Homework: Testing Diets in the Sim

In this homework, you will experiment with different diets in the Simulation to see how the diet affects the number of molecules getting to the cells.

1. Launch the *Metabolism* Simulation.
2. Select HEALTHY BODY and then select TEST.
3. Plan at least three different tests of the diet for the healthy body. Record your plans in the Diet Plan tables below.
4. Run your tests and record your results: the number of molecules absorbed by the cells.

How to Use Test Mode:

- Set up a pre-planned diet by pressing on items under Add Food Source. Then, press play and observe the Simulation. The diet you selected is fed to the body automatically, and the test runs until the timer reaches 200. During the test, you can observe the Sim in the Live View or switch to the Graph View. In the Graph View, you can see the final results for Total Molecules Absorbed by Cells, which is the data you will record below.
- **Note:** With some diets, your Simulation body will run out of energy before you reach 200 seconds. You'll need to reset and try a new diet.

Healthy Body Diet Tests**Diet Plan #1**

Food	Number of servings
corn	
fish	
sandwich	

Results of Diet Plan #1

Molecule	Number of molecules absorbed by cells
glucose	
amino acids	
oxygen	

Diet Plan #2

Food	Number of servings
corn	
fish	
sandwich	

Results of Diet Plan #2

Molecule	Number of molecules absorbed by cells
glucose	
amino acids	
oxygen	

Diet Plan #3

Food	Number of servings
corn	
fish	
sandwich	

Results of Diet Plan #3

Molecule	Number of molecules absorbed by cells
glucose	
amino acids	
oxygen	

8

Metabolism—Lesson 1.2—Activity 4

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For homework,
experiment with different
diets in the Sim to see
how the diet affects the
number of molecules
getting to the cells.

End of Lesson



THE LAWRENCE
HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

Amplify.

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End model lesson

I notice, I wonder...



Answer in the chat feature



What did you **notice** about the model lesson?

What do you now **wonder** ?

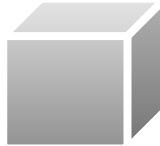
Chapter 1: Why does Elisa feel tired all the time?



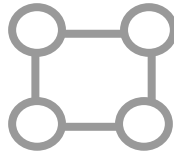
Investigation Question:
What does the human body need to function?



Multiple sources of evidence



Simulation



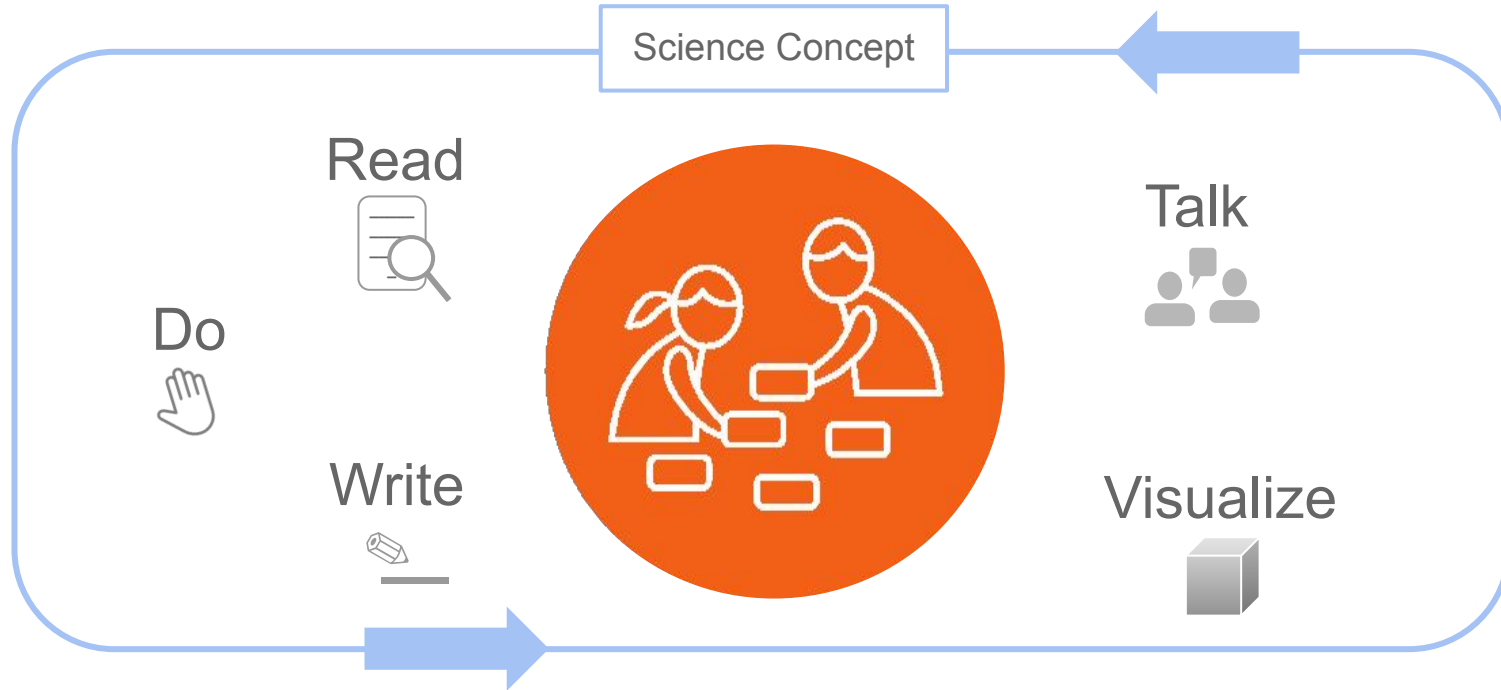
Modeling tool



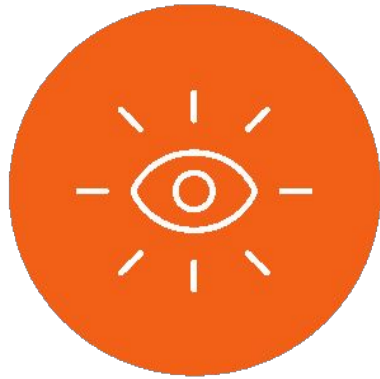
Article

Multimodal learning

Gathering evidence from different sources



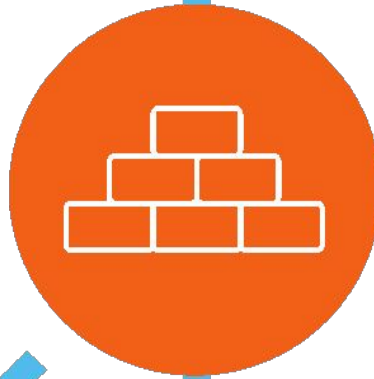
Amplify Science approach



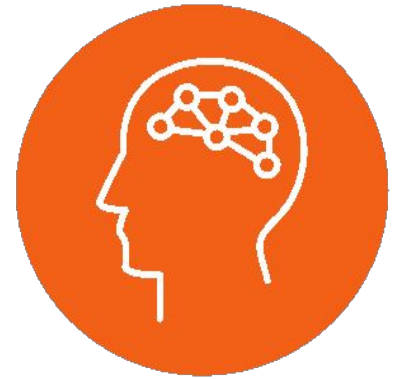
Introduce a real world problem



Collect evidence from multiple sources



Build increasingly complex explanations



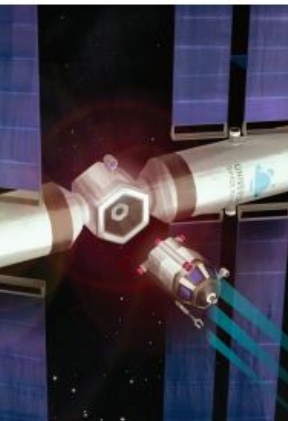
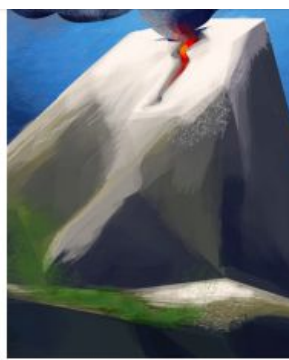
Apply knowledge to solve a different problem



Ask in the chat feature



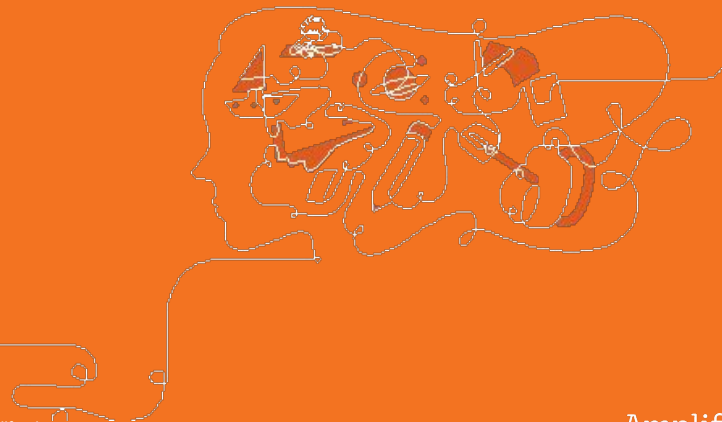
Questions?



Plan for the day

- ✔ What is Amplify Science?
- ✔ Navigation essentials
- ✔ Teaching a phenomenon-based lesson
- Unit Guide Resources
- Assessments
- Closing and reflection

Unit Guide Resources



Unit Guide Resources

Planning for the Unit

Unit Overview

Unit Map

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Books in This Unit

Apps in This Unit

Flexextensions in This Unit


Printable Resources


 Coherence Flowcharts

 Copymaster Compilation

 Flexextension Compilation

 Investigation Notebook

 Multi-Language Glossary

 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)
Flexextensions 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

Unit Guide Exploration

Scavenger Hunt

Unit Guide scavenger hunt

The purpose of this optional activity is to practice utilizing the Unit Guide resources to answer questions. Practicing now will help you determine which Unit Guide resources to use when questions arise as you're teaching. Use the Unit Guide Resources document to help decide and record which resource you would use to answer each question. For additional practice, open the resource you've identified, and record your answer in the space provided.

What do students do in the first activity of Lesson 3.1?

Unit Guide document to reference:	Answer:

Which lesson will take the most time to prepare for Chapter 1?

Unit Guide document to reference:	Answer:

Describe one piece of evidence students can get using the Simulation.

Unit Guide document to reference:	Answer:

What is some background information pertaining to the science content of the unit?

Unit Guide document to reference:	Answer:

Unit Guide scavenger hunt cont.

List some of the NGSS crosscutting concepts emphasized in the unit.

Unit Guide document to reference:	Answer:

Describe one material you will print and make copies of during this unit.

Unit Guide document to reference:	Answer:

What is one article that students read in this unit?

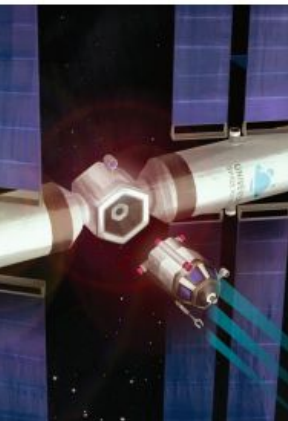
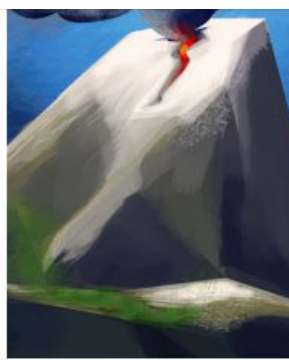
Unit Guide document to reference:	Answer:

Which lessons in Chapter 2 include On-the-Fly Assessments?

Unit Guide document to reference:	Answer:

5 min break





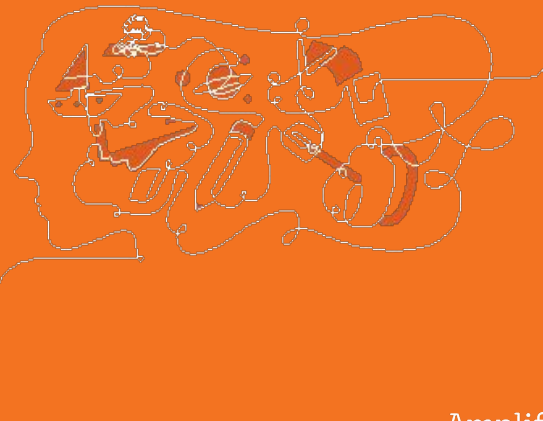
Plan for the day

- ✔ What is Amplify Science?
- ✔ Navigation essentials
- ✔ Teaching a Lesson
- ✔ Unit Guide Resources

- Assessments
- Closing and Reflection

Progress Build

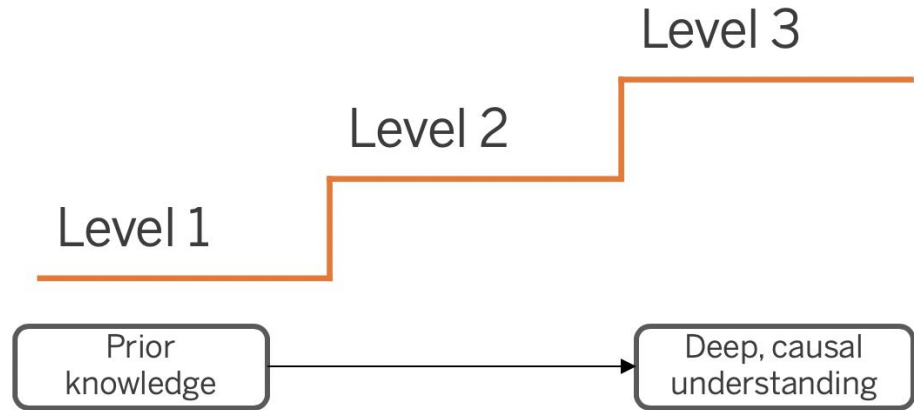
A unit-specific learning progression



Progress Build

Teaching tip

Being familiar with your unit's Progress Build means you know what's coming. This will help you avoid giving ideas away too early in the unit!



Metabolism

How do these ideas relate to one another?

- Cells in the body need molecules from outside to function.
- Systems in the body work together to take in, break down, and deliver needed molecules to the cells.



Metabolism

Building upon a foundation

Chapter 1

Cells in the body need molecules from outside to function.

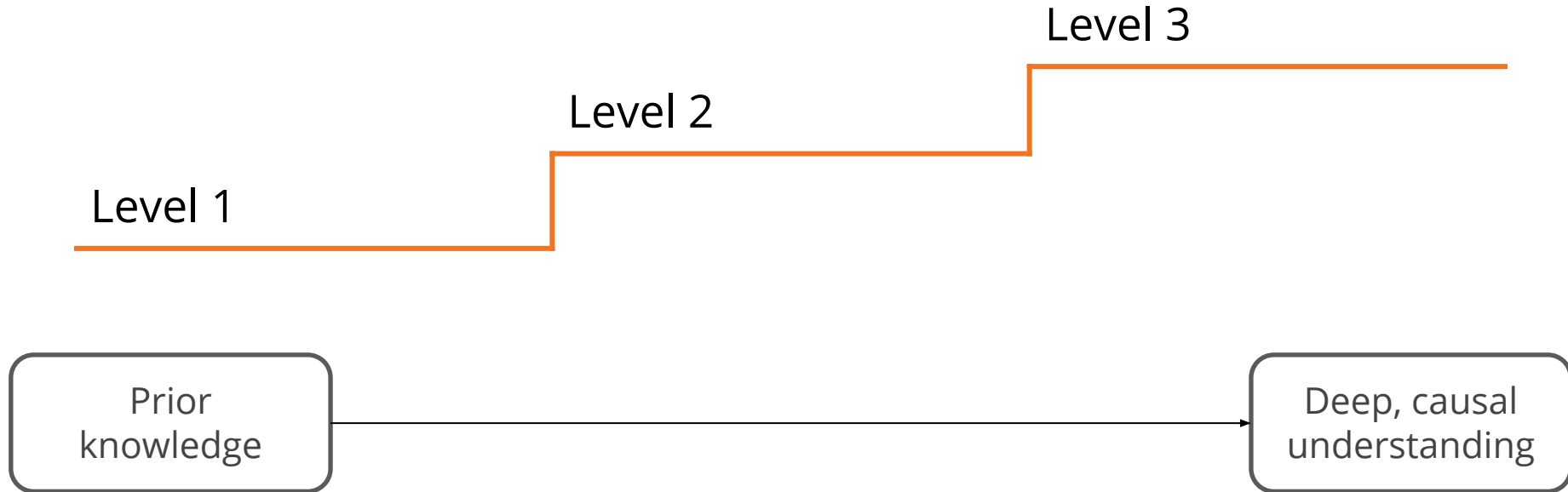
Chapter 2

Systems in the body work together to take in, break down, and deliver needed molecules to the cells.



Progress Build

A unit-specific learning progression



Metabolism Progress Build

Level 1

Cells in the body need molecules from outside to function.

Level 2

Systems in the body work together to take in, break down, and deliver needed molecules to the cells.

Level 3

Cells can use these molecules to release energy for the body to function.

Prior knowledge

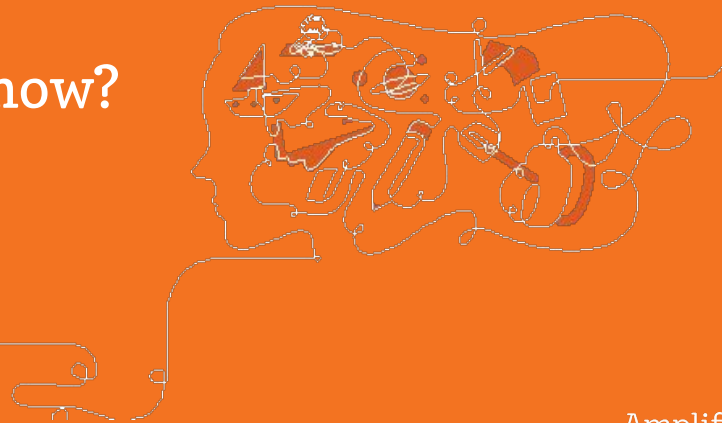
Deep, causal understanding

5 min break



Assessment System

Think to yourself: How do your students show you what they know?



Pre- and End-of-Unit Assessments

Pre-Unit
Assessment

End-of-Unit
Assessment

Level 3

Level 2

Level 1

Critical Juncture Assessments

Pre-Unit
Assessment



Critical Juncture

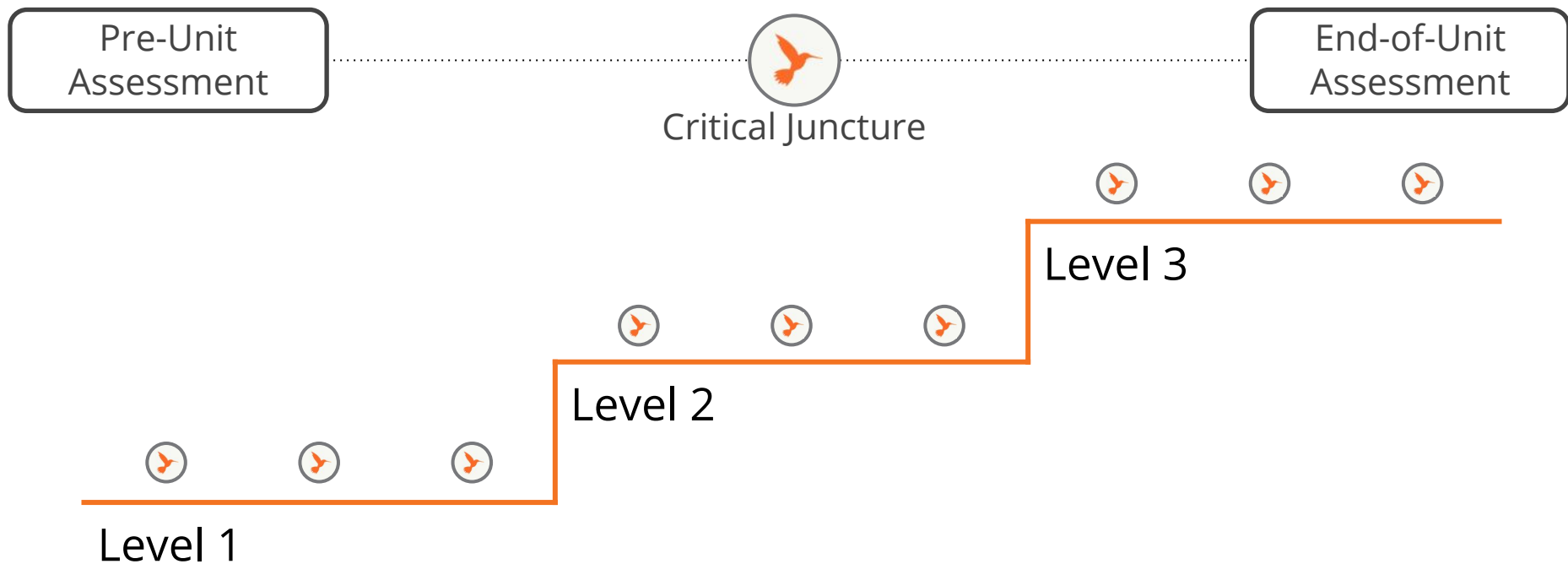
End-of-Unit
Assessment

Level 3

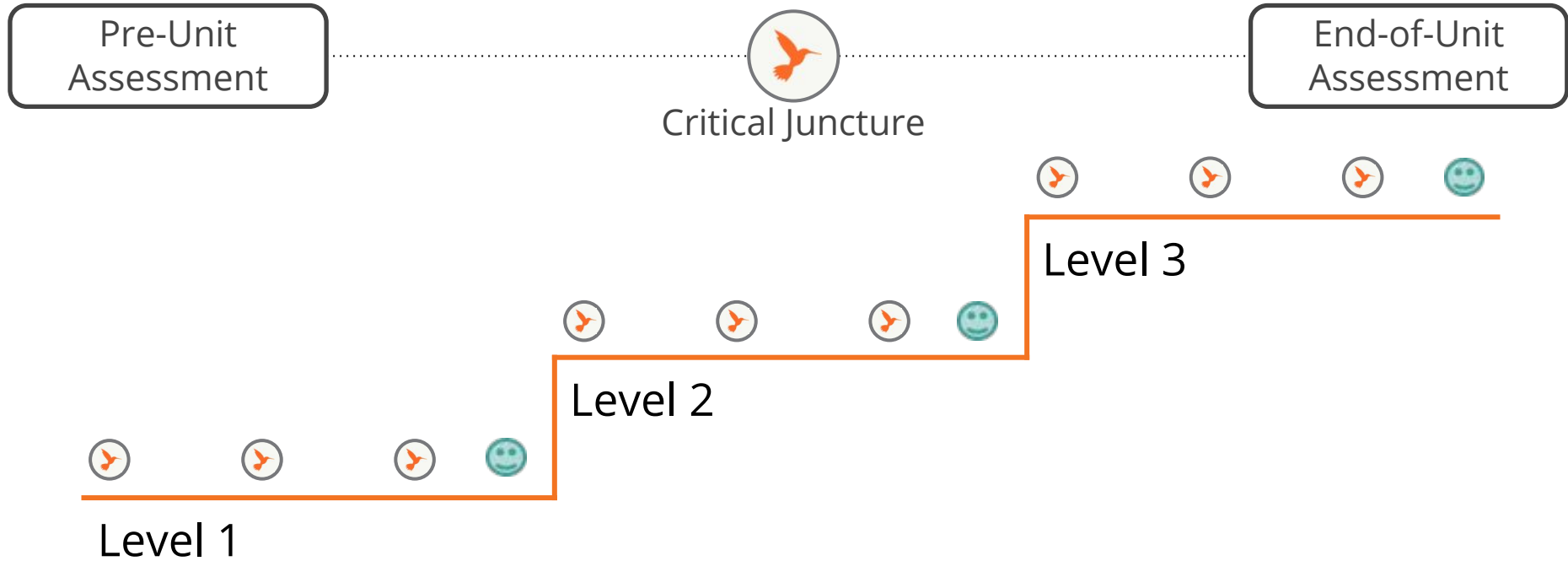
Level 2

Level 1

On-the-Fly Assessments

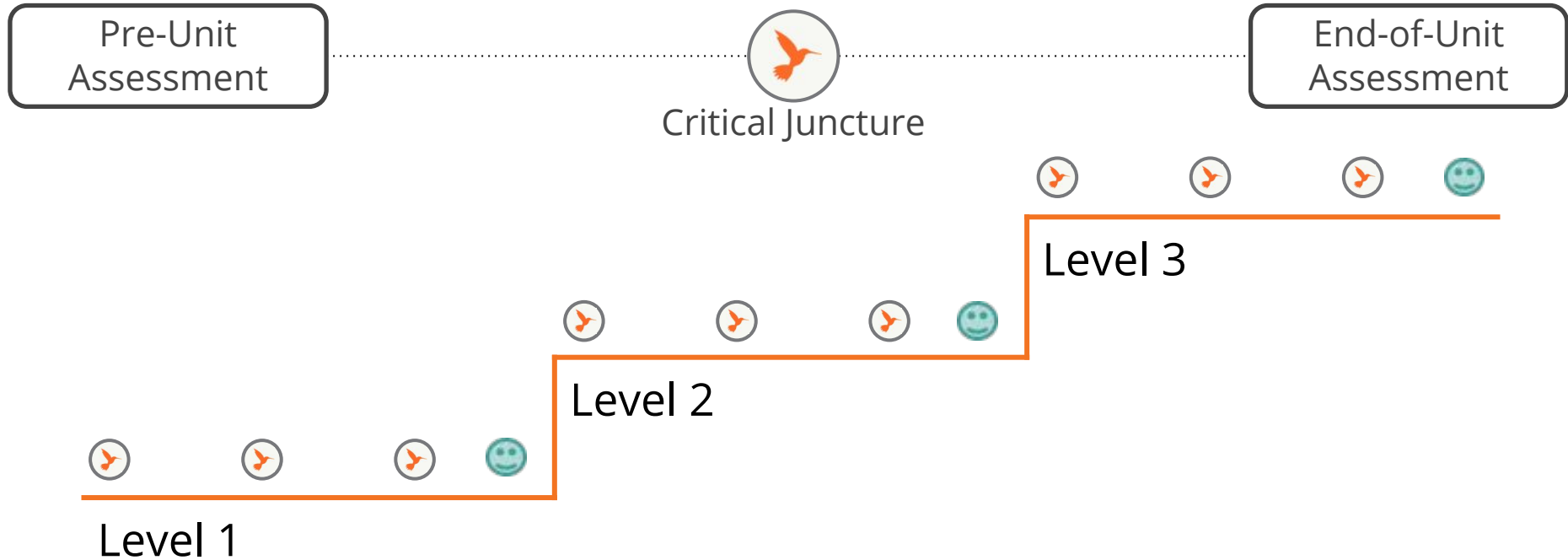


Student Self-Assessments



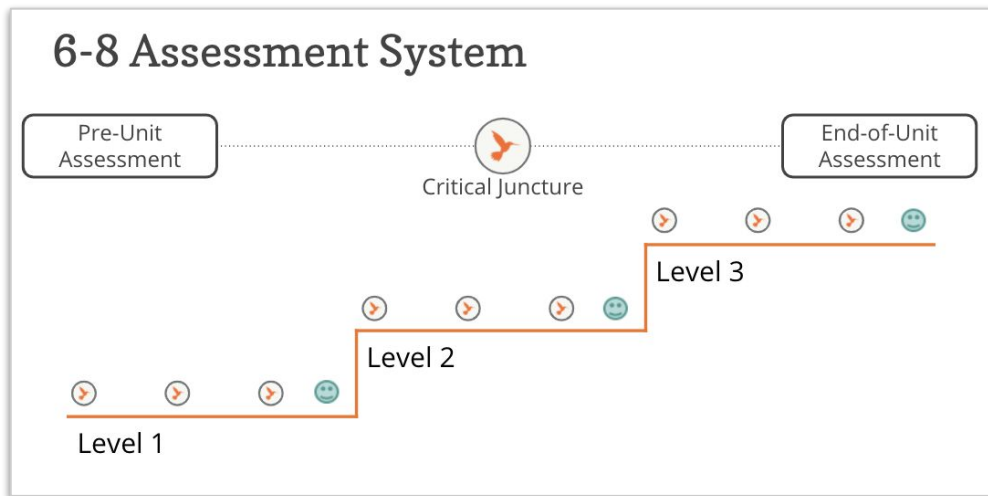
6-8 Assessment System

Pages 11-12



Capture your thinking!

- How will you use these embedded assessment opportunities?



Unit Level Assessment Documents

Assessment System:

- explains the organization of the assessment system
- lists out each assessment in the unit with key information
- goes into an explanation of each type of assessment found in the unit

Assessment Opportunity	Next Generation Science Standards	Printable Resources
Lesson 1.1: 3-D Performance Task: Scientific Explanation	DCI: <ul style="list-style-type: none">• PS3.A: Definitions of Energy SEPs: <ul style="list-style-type: none">• Practice 1: Asking Questions and Defining Problems• Practice 6: Constructing Explanations and Designing Solutions CCC: <ul style="list-style-type: none">• Systems and System Models	Coherence Flowcharts
Assessment Type: Pre-Unit Assessment		Copymaster Compilation
Evaluation Guidance: <ul style="list-style-type: none">• Assessment Guide (in Digital Resources for Lesson 1.1), with support for revealing students' prior knowledge, preconceptions, and to gauge their facility for using the SEPs and CCCs.• Possible Student Responses		Flextension Compilation
		Investigation Notebook
		Multi-Language Glossary
		NGSS Information for Parents and Guardians

Embedded Formative Assessments:

- explains what to look for at each assessment opportunity
- gives guidance for instructional next steps



Standards and Goals
3-D Statements
Assessment System
Embedded Formative Assessments
Books in This Unit
Apps in This Unit
Flextensions in This Unit

Lesson 1.2, Activity 4

On-the-Fly Assessment 1: Synthesizing Information

Look for: This lesson provides students' first opportunity to learn about and discuss how to synthesize information as a reading strategy. They will continue to develop facility with this strategy throughout the unit through repeated practice. As you circulate, make note of what students are connecting to the reading and what deeper understanding they come to as a result. Are they connecting together relevant pieces of information from different sources? Are they using these connections to help them better understand systems?

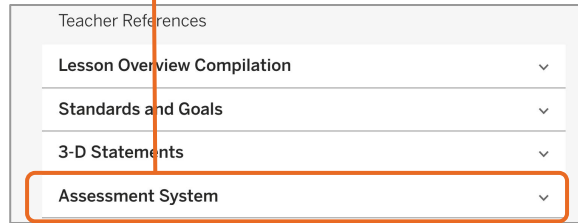
Now what? If students are having trouble getting started with synthesizing, or if they are connecting the reading to unrelated information, provide some additional models. You may wish to provide examples that combine information from the first section of *Systems* with information from other sources. Depending on how many students need this support, you could either coach a few students individually during the reading or you could work with a small group or the whole class. Be sure to remind students to keep in mind the goal of connecting pieces of information in order to come to a deeper understanding of the concept of systems.

Go 'live' to show assessment resources and assessments

Review an assessment

Part 1: Choose an Assessment Opportunity

1. Navigate to the *Assessment System* reference in the Unit Guide

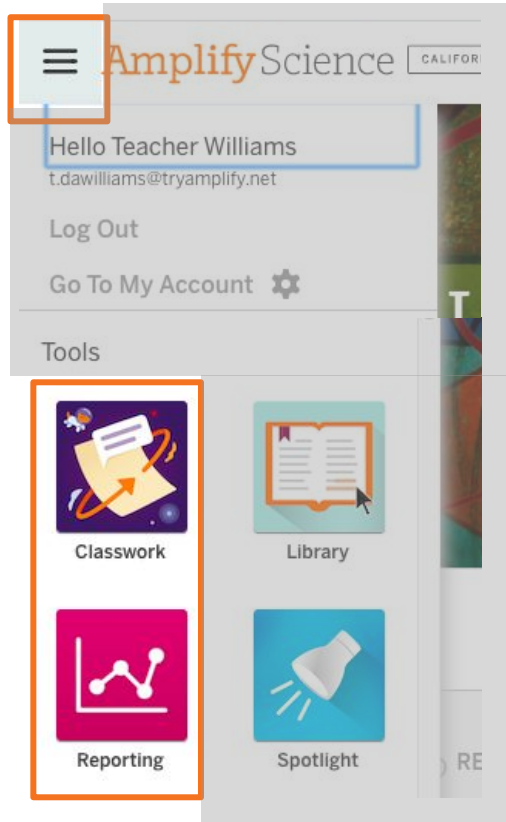


2. Choose an 'Assessment opportunity' to preview.
i.e. Pre-Unit, On-the-Fly, Critical Juncture, or End-of-Unit
3. Navigate to the lesson and review the assessment

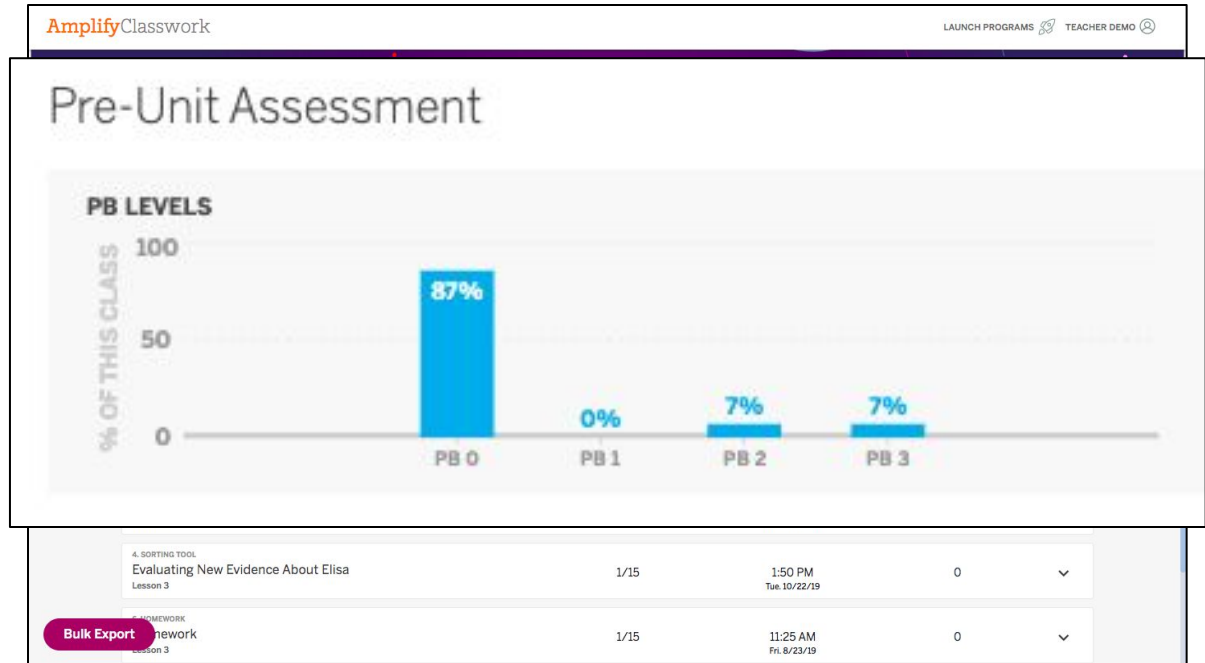
Part 2: Review the Assessment

4. As you review the assessment, answer these questions:
 - a. What are students doing?
 - b. What would student performance tell me about student understanding?
 - c. How could I adjust instruction based on student performance?
 - d. How could I record student data?

Classwork and Reporting



The sidebar of the AmplifyScience interface includes a hamburger menu icon, the user's name 'Hello Teacher Williams', email 't.dawilliams@tryamplify.net', and options for 'Log Out' and 'Go To My Account'. Below these are 'Tools' icons for 'Classwork', 'Library', 'Reporting', and 'Spotlight'. The 'Classwork' and 'Reporting' icons are highlighted with orange boxes.



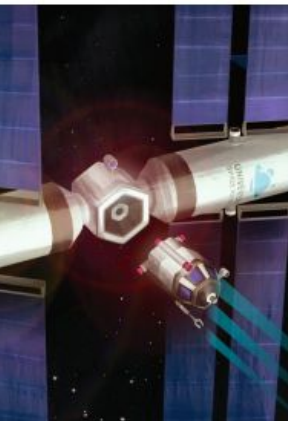
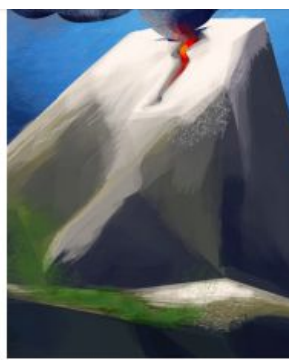
Go 'live' to show classwork and reporting tool



Ask in the chat feature



Questions?



Plan for the day

- ✓ What is Amplify Science?
- ✓ Navigation essentials
- ✓ Teaching a phenomenon-based lesson
- ✓ Unit Guide Resources
- ✓ Assessments
- Closing and reflection

Navigation Temperature Check

Rate yourself on your comfort level accessing Amplify Science materials and navigating a digital curriculum.

1 = Extremely Uncomfortable

2 = Uncomfortable

3 = Mild

4 = Comfortable

5 = Extremely Comfortable



Ask in the chat feature



Questions?

Revisiting Day 1 Objectives

Are you able to...

- Navigate the Amplify Science curriculum?
- Understand the program's phenomenon-based approach and instructional materials?

Day 2 Objectives

By the end of day 2 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.

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

Based on our work today, share:



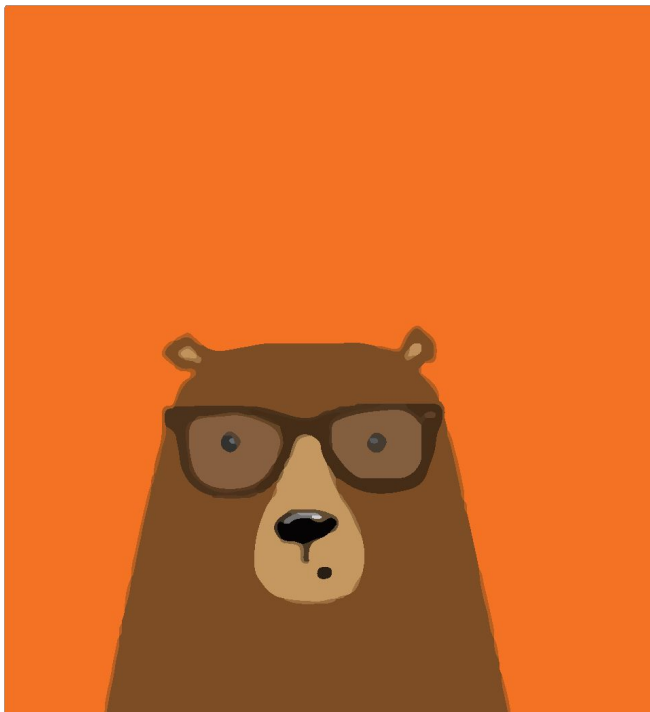
Answer in the chat feature

Brain: something you'll keep in mind

Heart: something you're feeling

Feet: something you're planning to do

Additional Amplify resources



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.

Thank you for your participation in day 1.
See you tomorrow for day 2!

