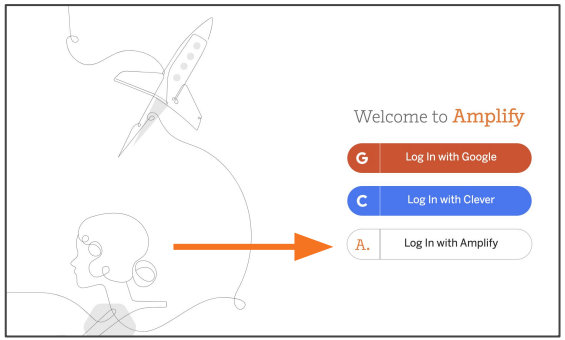
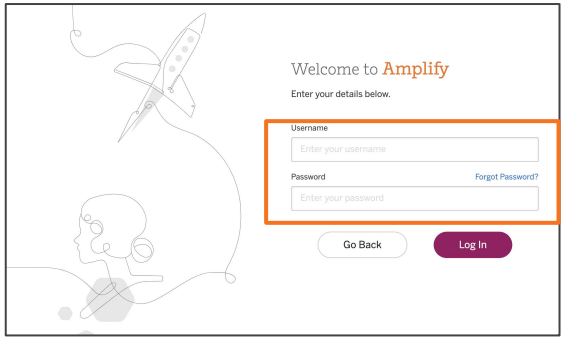
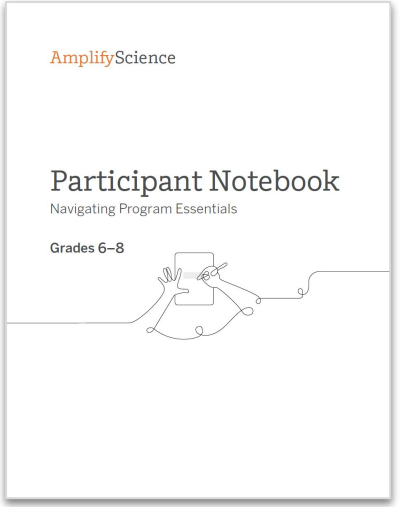
Welcome to Amplify Science!

Do Now: Login and open your digital participant packet

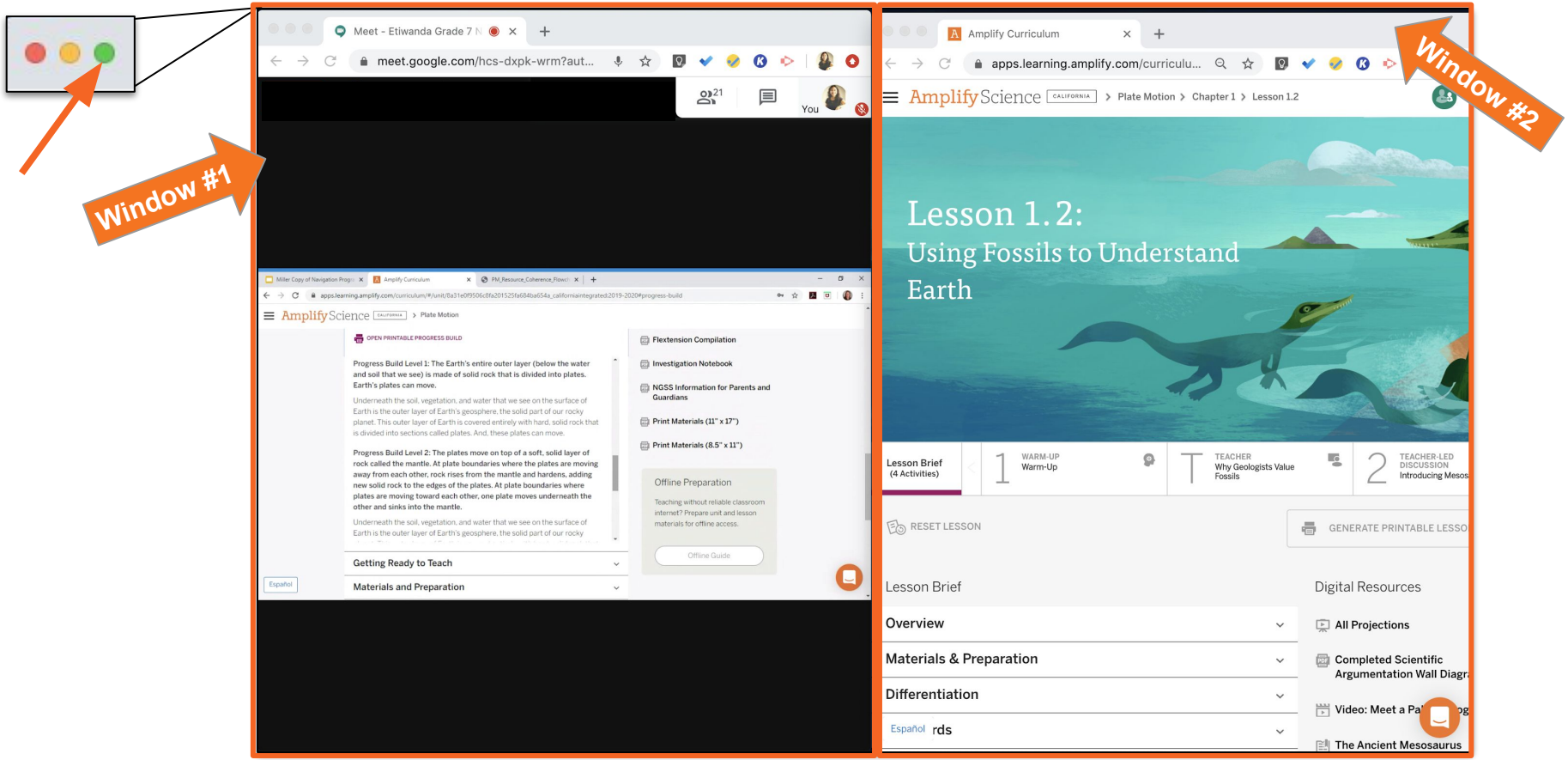




1. Go to **learning.amplify.com**
2. Select **Log in with Amplify**
3. Enter teacher demo account credentials
   - nycdoe_middle@tryamplify.net
   - Password: AmplifyNumber1
4. Explore as we wait to begin



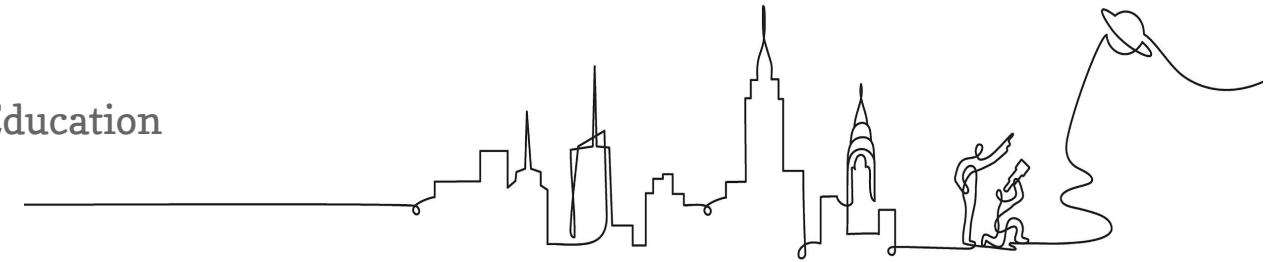
Use two windows for today's webinar



Amplify Science
New York City

Introduction to Amplify Science
NYC Summer Institute, Day 1

Grade 8: Geology on Mars & Force and Motion



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

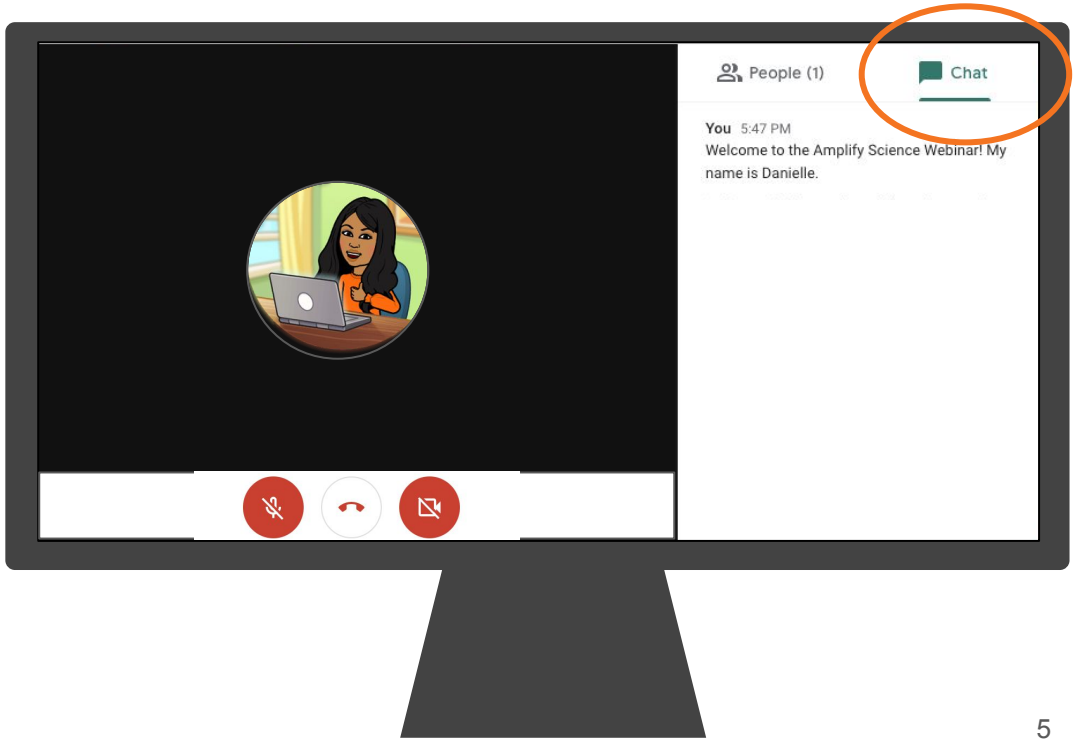
Engage at your comfort level - chat, ask questions, discuss.

Introductions!

Who do we have in the room today?

- **Question 1:** What do you love about teaching science?

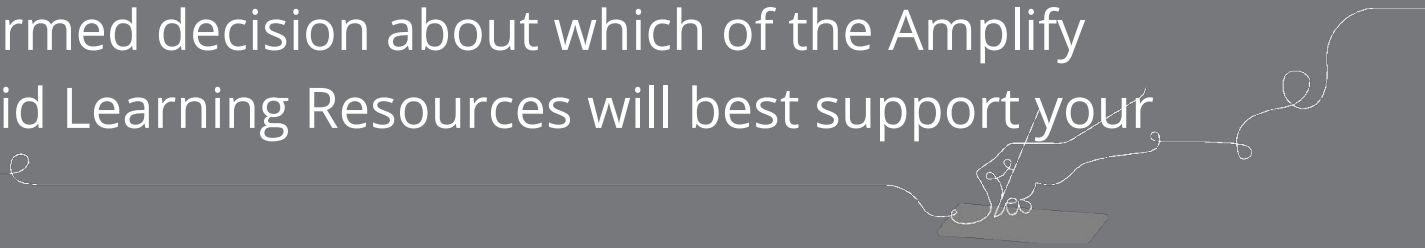
- **Question 2:** What do you need to learn today and tomorrow to feel confident with this new curriculum?



Overarching goals

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

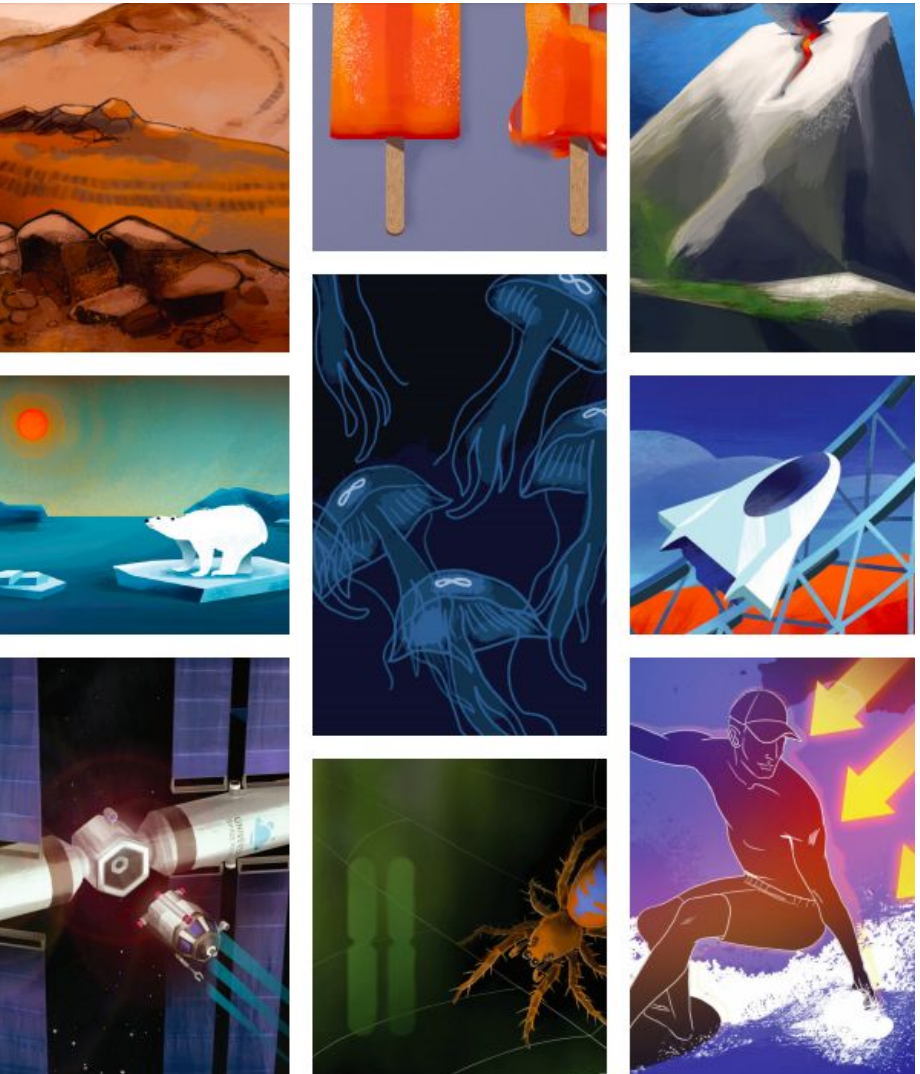
- Navigate the Amplify Science curriculum.
- Understand the program's multimodal approach and instructional materials.
- Apply program essentials to prepare to teach an Amplify Science unit.
- Make an informed decision about which of the Amplify Science Hybrid Learning Resources will best support your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



Day 1 Objectives

By the end of today you will be able to:

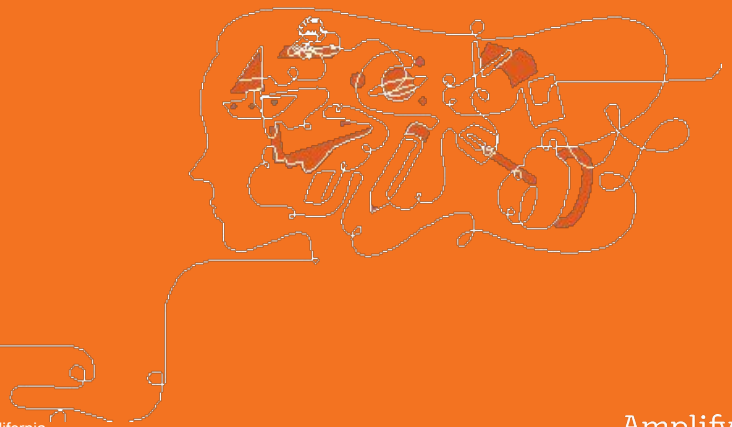
- Navigate the Amplify Science curriculum.
- Understand the program's phenomenon-based approach and instructional materials.



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.

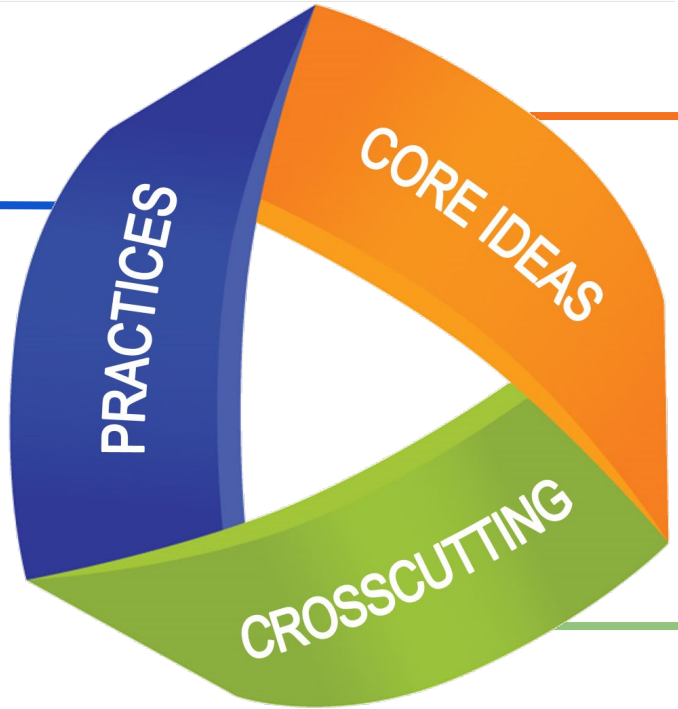
Amplify Science

Next Generation Science Standards

Designed to help students build a cohesive understanding of science

What scientists do

Science and Engineering Practices



What scientists want to know

Disciplinary Core Ideas

How scientists think

Crosscutting Concepts

NYC Companions

AmplifyScience

AmplifyScience NYC Edition

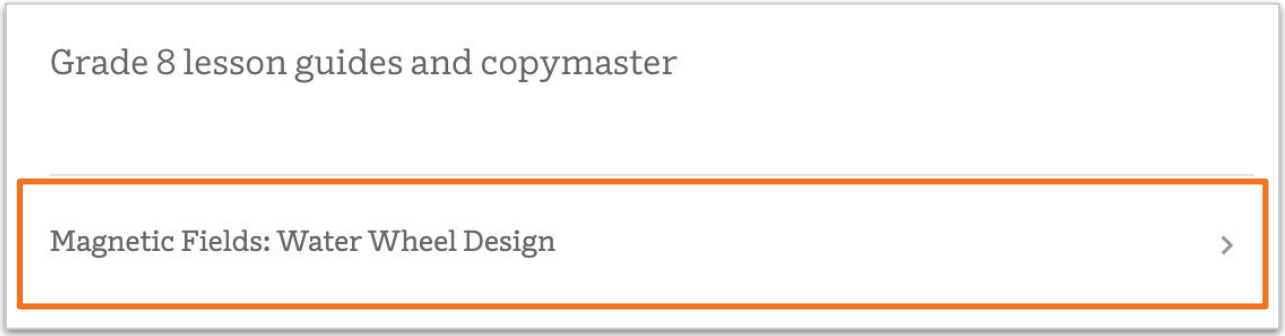
NGSS

+ Companion Lessons

NYSSLS

NYC Companion Lesson Slides, Grade 8

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



Slides for the Companion Lessons that go with the Magnetic Fields Unit will be available on the NYC Resources site before you get to the unit.

Middle School Units: Launch; Core; Internship

11 Lessons

Geology on Mars

19 Lessons

Plate Motion

10 Lessons

Plate Motion Engineering Internship

AmplifyScience

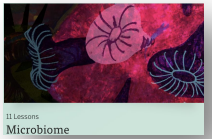
authored by THE LAWRENCE HALL OF SCIENCE UNIVERSITY OF CALIFORNIA, BERKELEY

Middle School Curriculum New York City Edition

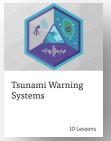
Grade 6

- 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

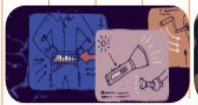
- Engineering Internship: Earth's Changing Climate

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

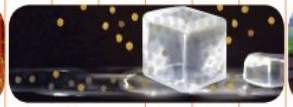

Weather Patterns


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

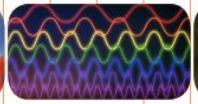

Launch Unit: Geology on Mars


Earth, Moon, and Sun


Force and Motion


Engineering Internship: Force and Motion


Magnetic Fields

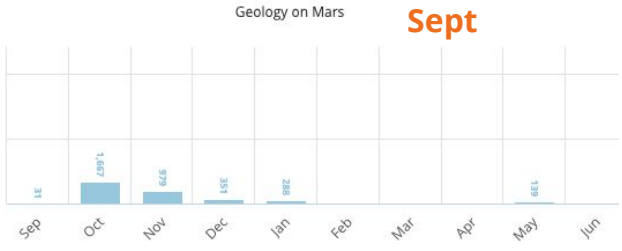

Light Waves

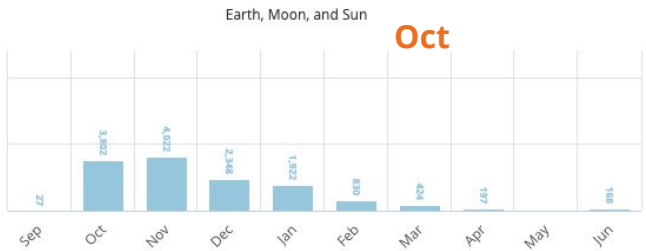

Traits and Reproduction

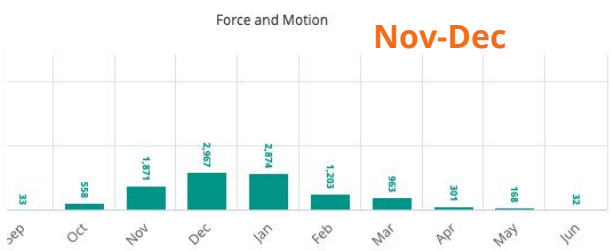

Natural Selection

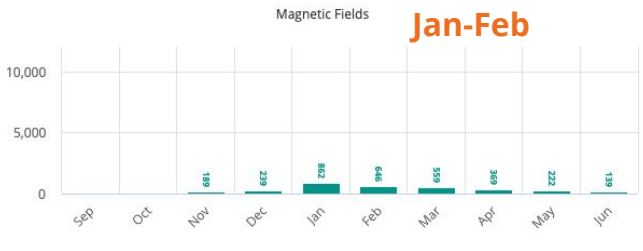

Evolutionary History

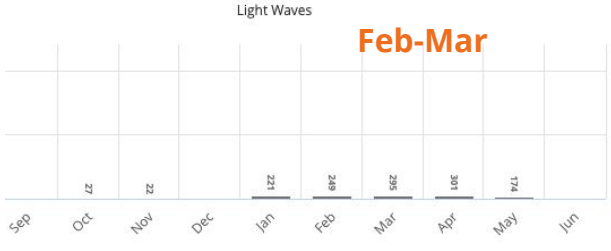
8th Grade Overview: Scope and Sequence

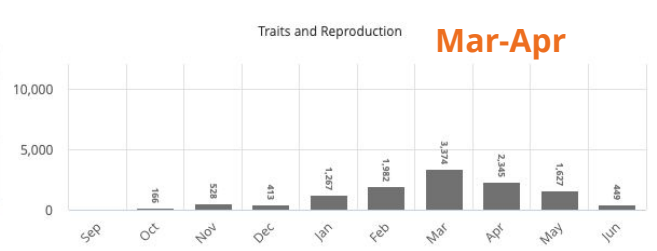


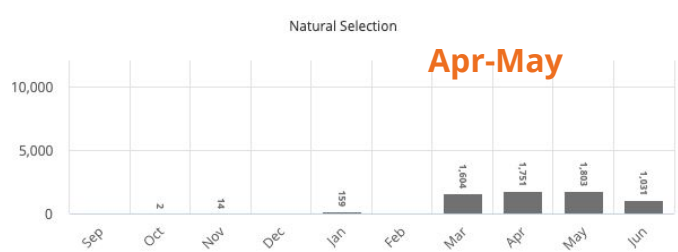


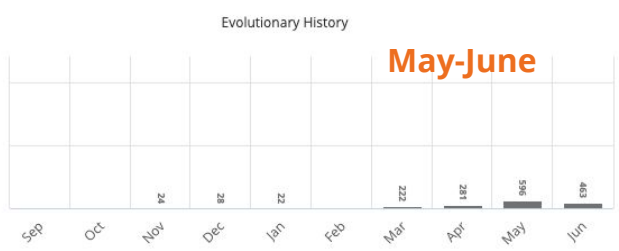




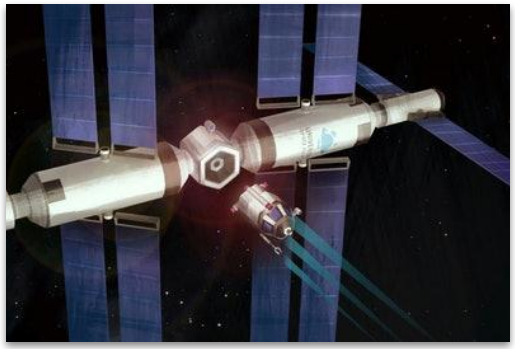








Unit at a Glance: Force and Motion



Force and Motion

16 lessons
45 minutes each
3 assessment days

Domain: Physical Science

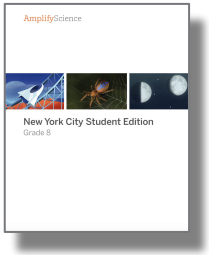
Unit type: Core

Student role: Physicists

Phenomenon: The asteroid sample-collecting pod failed to dock at the space station as planned.

Middle School Unit Resources

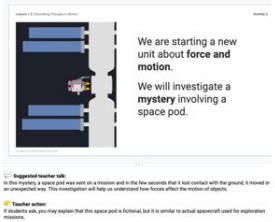
NYC Print student editions



Investigation Notebooks or digital student experience

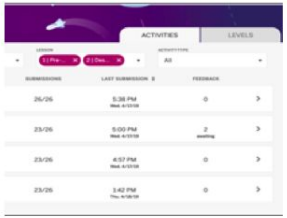
Articles (digital or print)

Simulations and other digital tools



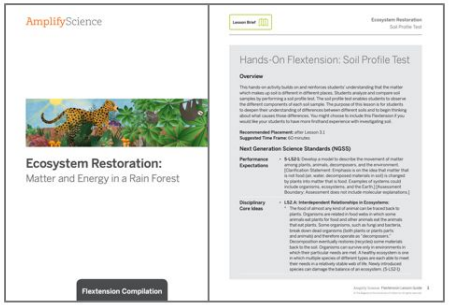
Classroom Slides

Teacher's Guide (digital or print)



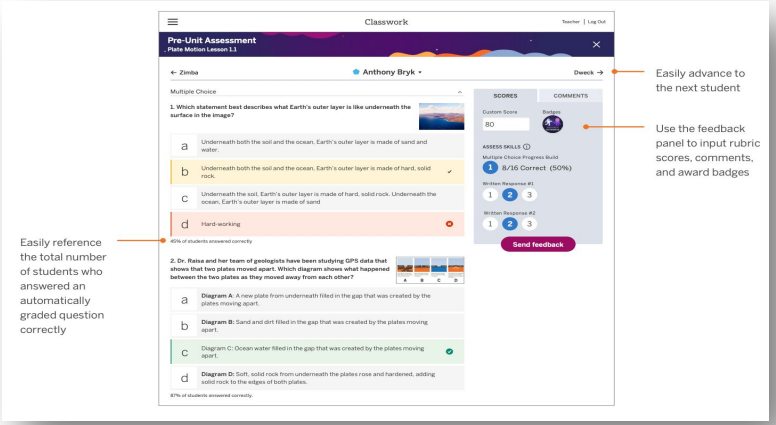
Assessments and Reporting

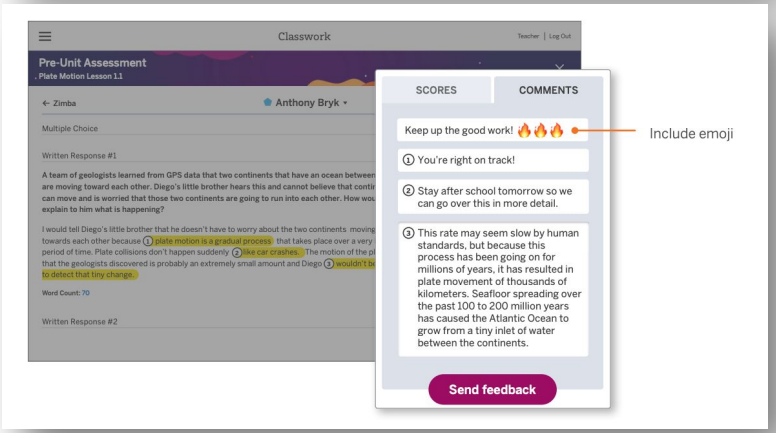
Hands-on and print materials

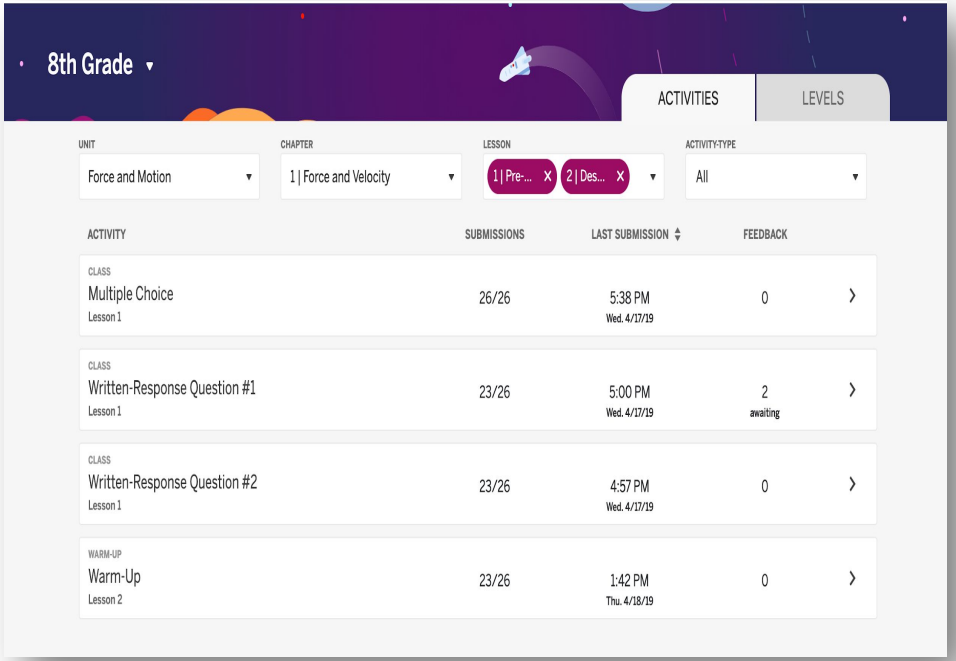


Hands-on Flextensions

Classwork





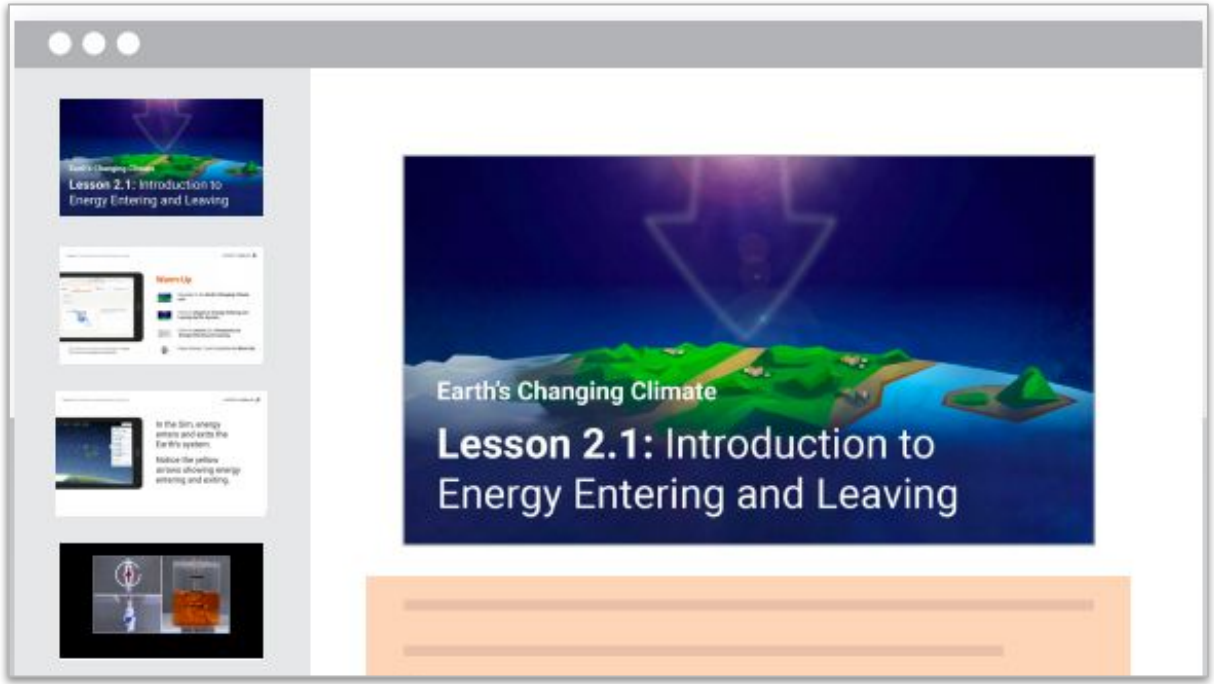


Amplify.

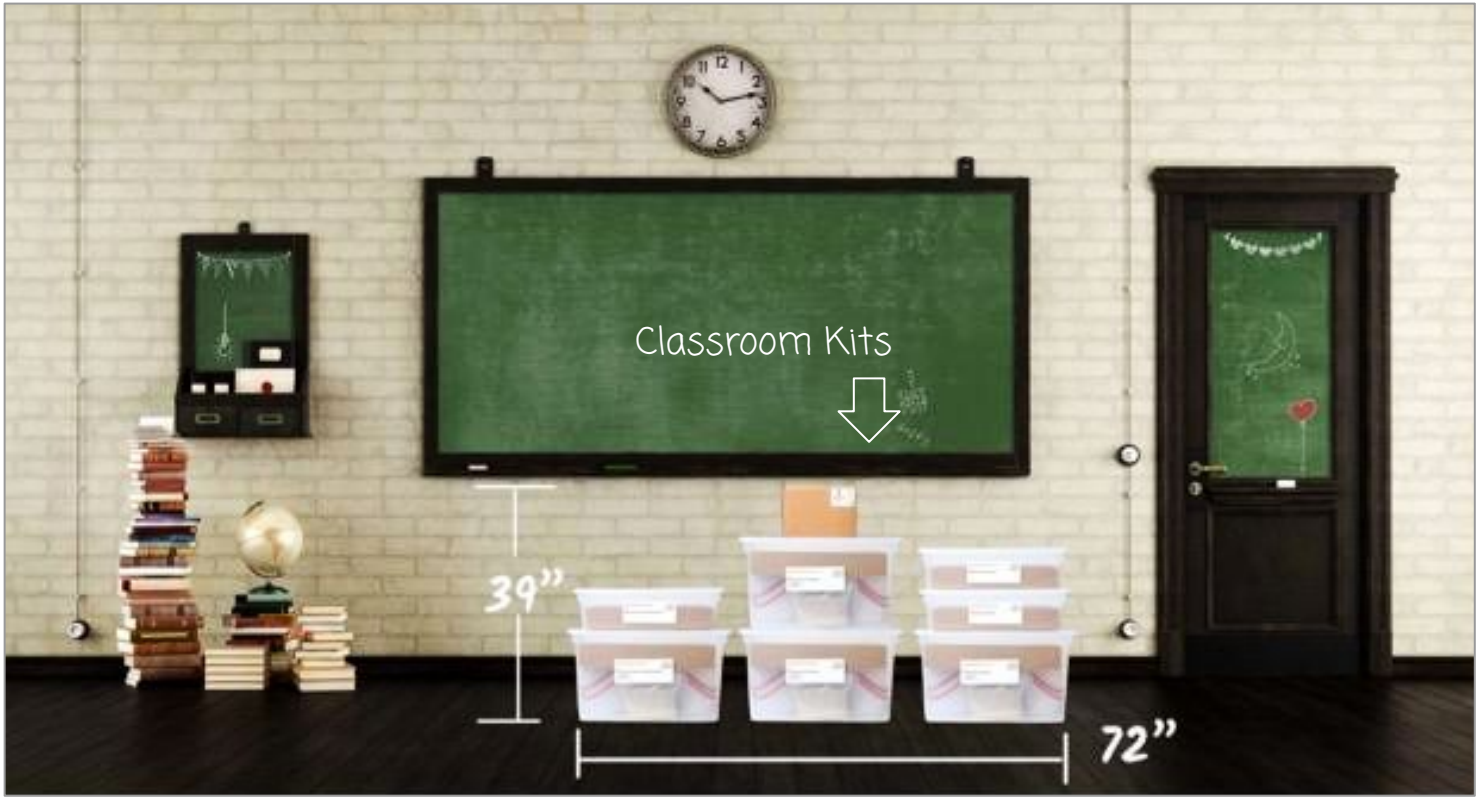
Coming Soon for Back to School!

Classroom Slides

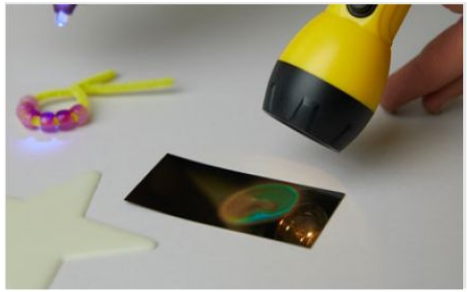
Each lesson will have a downloadable and editable PowerPoint file to help guide teachers and their students through the lesson.



Classroom Kits



Hands On Learning Materials



Force and Motion Classroom Wall

Unit Question

How do forces affect motion?

Chapter 1 Question

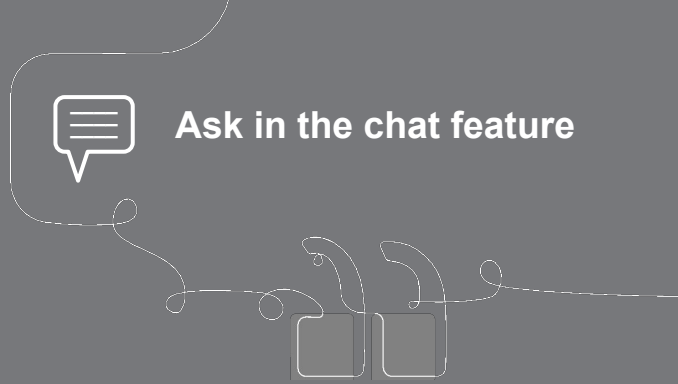
What caused the pod to change direction?

Key Concepts

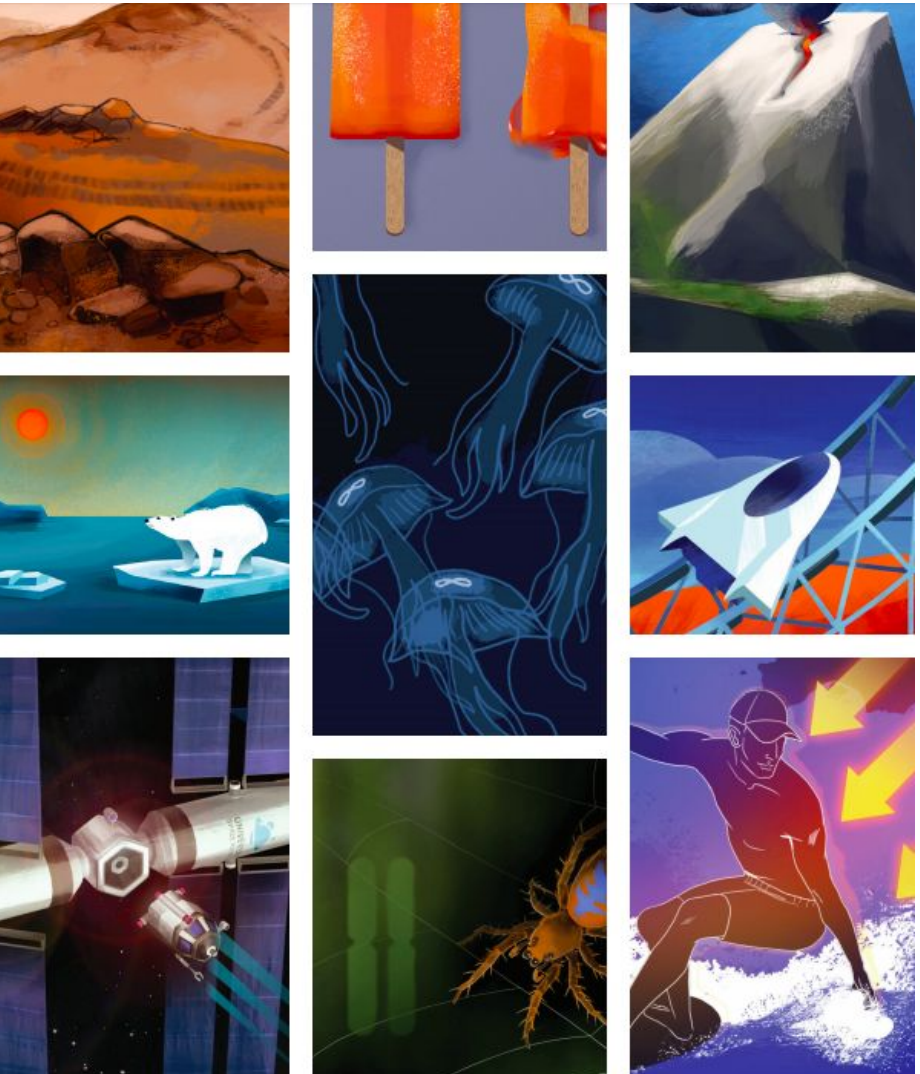
1. A force is required to change the velocity of an object.

Vocabulary

velocity



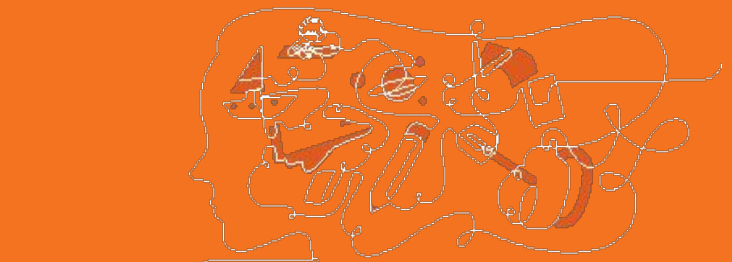
Questions?



Plan for the day

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

Navigation Essentials



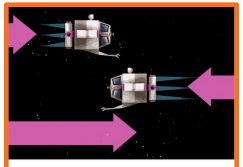
Unit

Chapters

Lessons

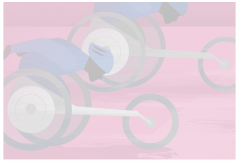
Activities

19 Lessons
Force and Motion



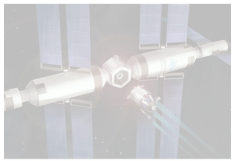
Chapter 1: Force and Velocity

6 Lessons



Chapter 2: Mass and Velocity

5 Lessons



Chapter 3: Collisions

4 Lessons

Chapter 4: Force, Motion, and Movie Sets

4 Lessons

Lesson 1.1:
Pre-Unit Assessment

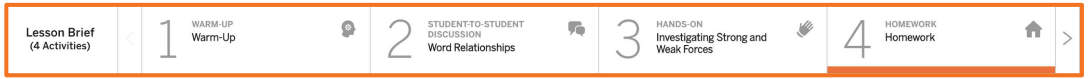
Lesson 1.2:
Describing Changes in Motion

Lesson 1.3:
Investigating Direction of Force

Lesson 1.4:
Explaining Force and Velocity

Lesson 1.5:
Force Strength and Velocity Change

Lesson 1.6:
Evaluating Claims and Thruster Forces



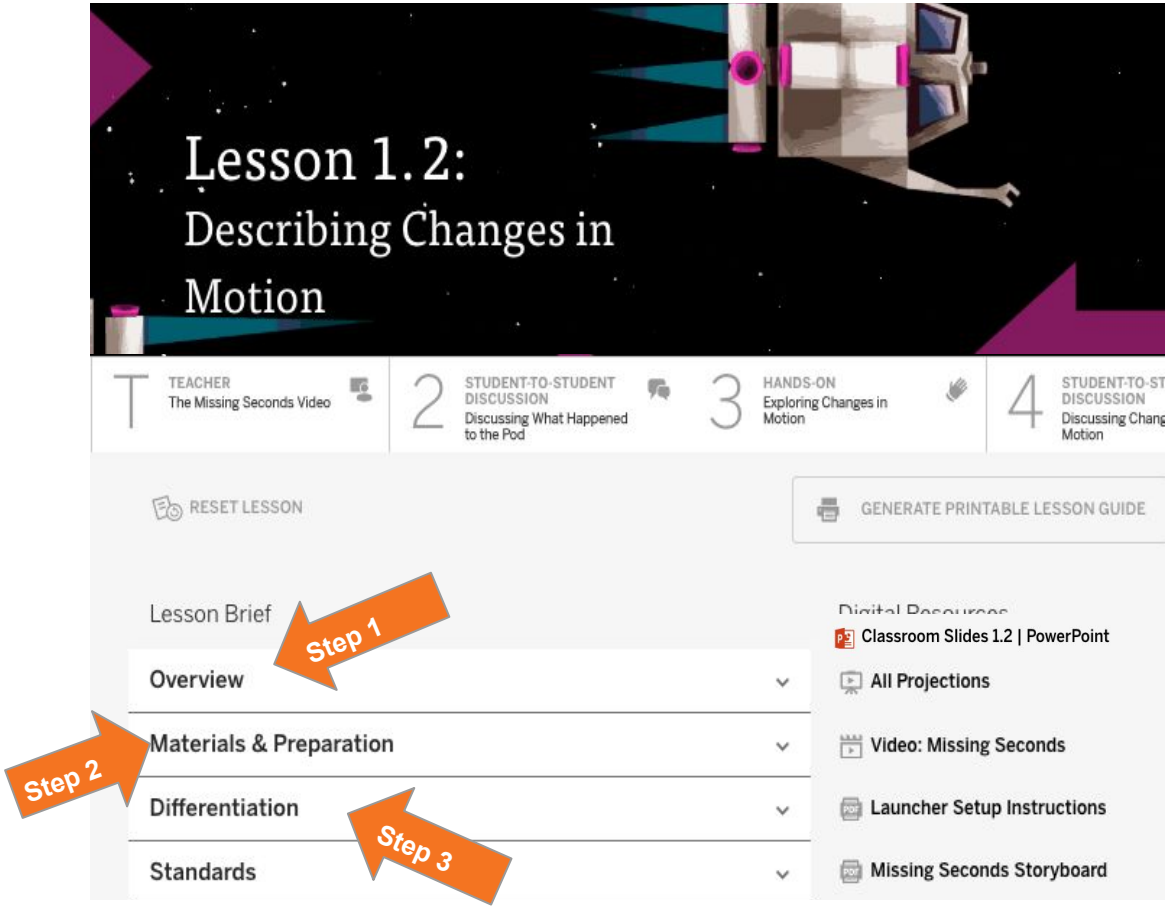
Amplify.

3 Steps for Preparing to Teach

Step 1:
Read the lesson overview

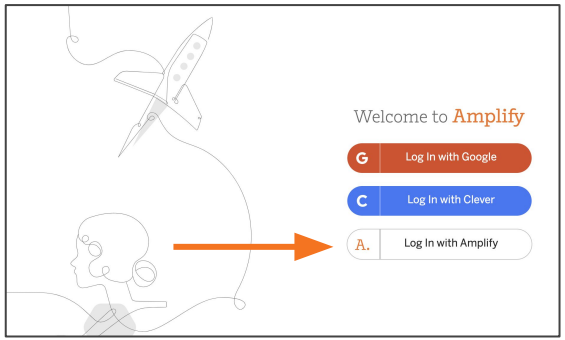
Step 2:
Read the Materials and Preparation section

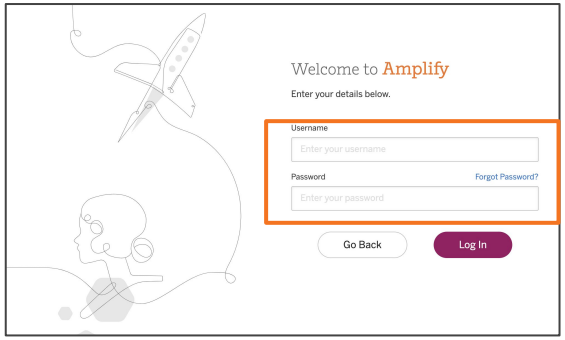
Step 3:
Read the Differentiation



Welcome to Amplify Science!

Do Now: Login



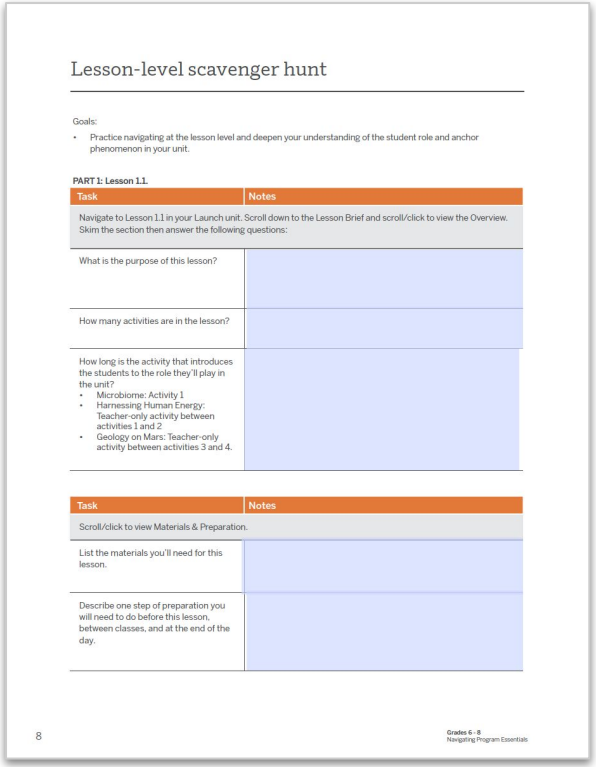


1. Go to **learning.amplify.com**
2. Select **Log in with Amplify**
3. Enter teacher demo account credentials
   - xxxxxxx@pd.tryamplify.net
   - Password: xxxx
4. Explore as we wait to begin

Lesson Level Exploration

Pages 6-7

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.

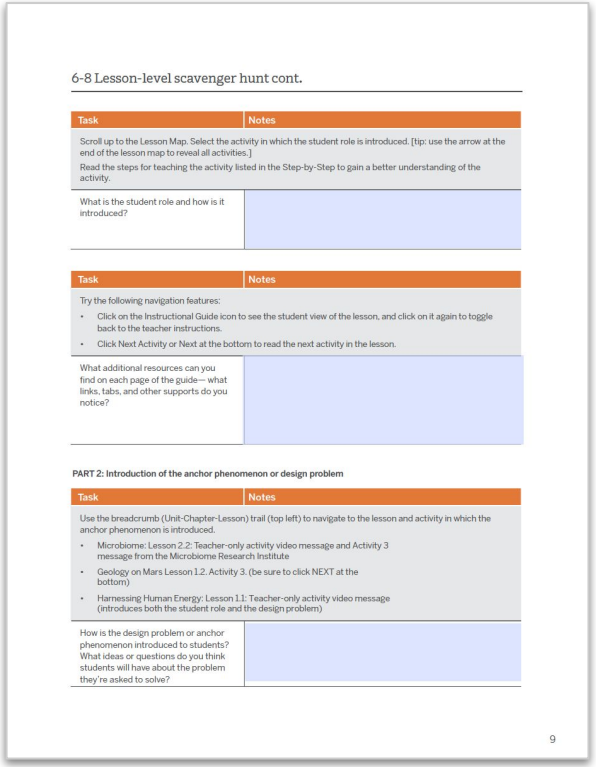
PART 1: Lesson 1.1.

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? • Microbiome: Activity 1 • 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

Grades 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?	

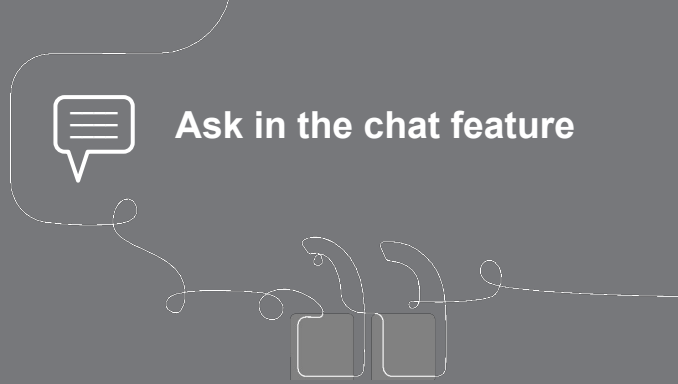
Task	Notes
Try the following navigation features: • Click on the Instructional Guide icon to see the student view of the lesson, and click on it again to toggle back to the teacher instructions. • Click Next Activity or Next at the bottom to read the next activity in the lesson.	
What additional resources 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. • Microbiome: Lesson 2.2: Teacher-only activity video message and Activity 3 message from the Microbiome Research Institute • Geology 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?	

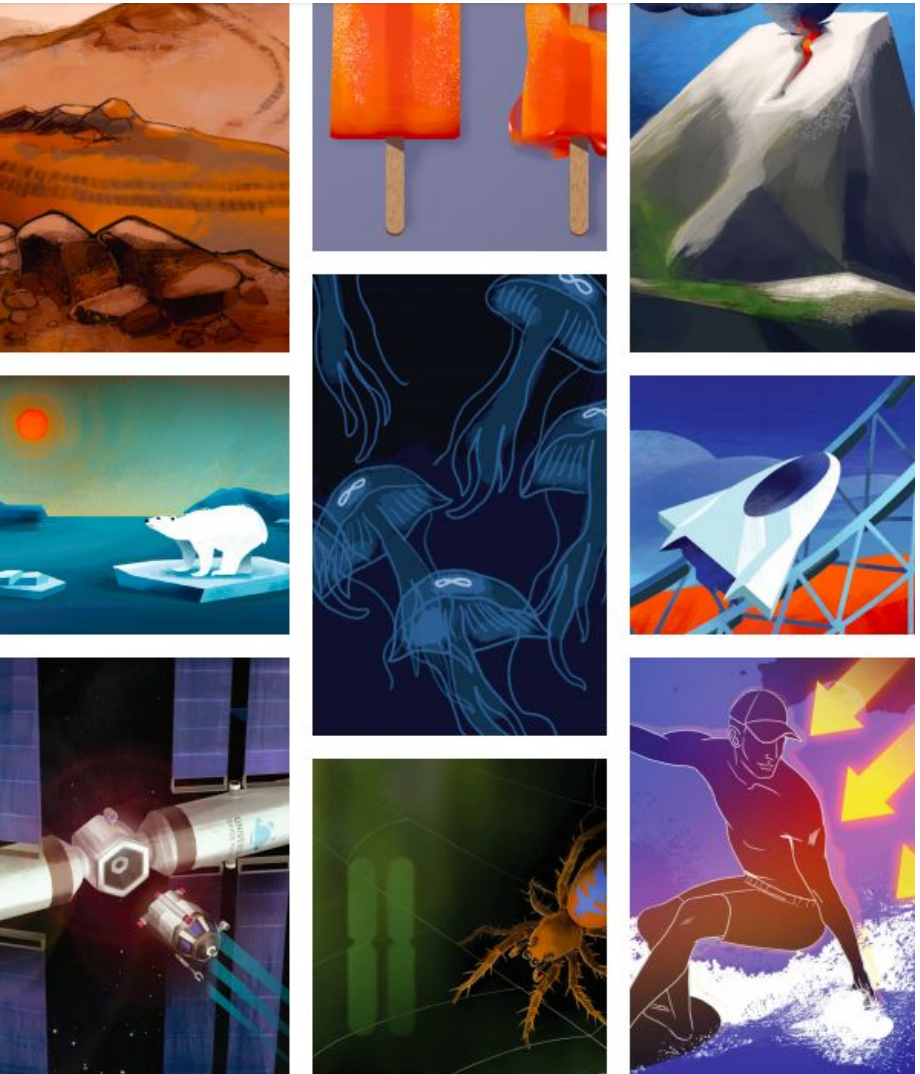
9

Amplify.



Questions?

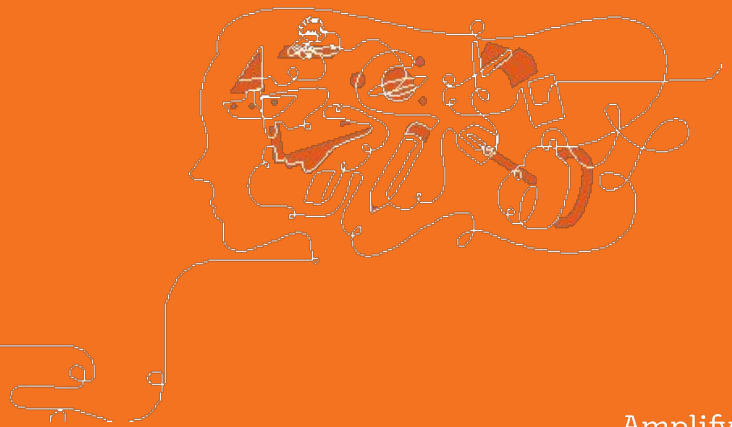
5 min break



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.

Answer in the chat feature

Next Generation Science Standards

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

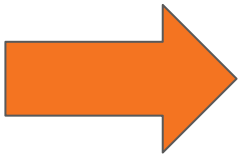
Topic-based	Phenomenon-based
What is the water cycle?	What caused the storms in this area to be severe?
What is an ecosystem?	Why are there suddenly so many moon jellies?
How does light energy interact with matter?	Why does Australia have an elevated skin cancer rate?

Comparing topics and phenomena

A shift in science instruction

from learning about

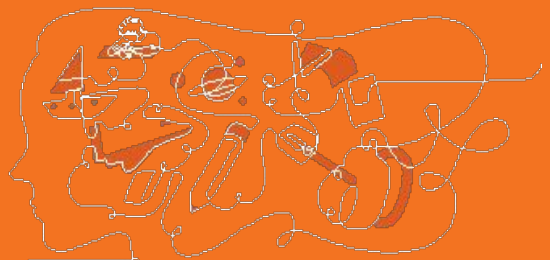
(like a student)



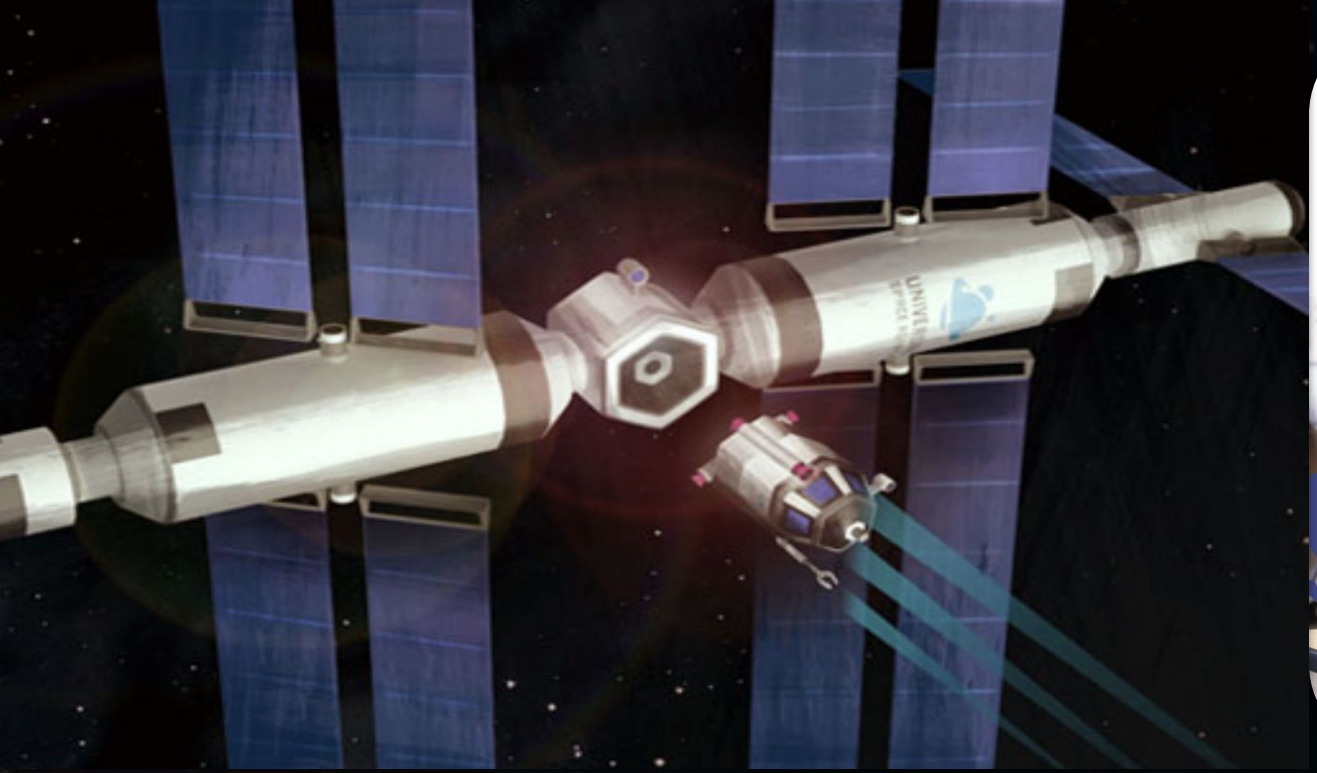
to figuring out

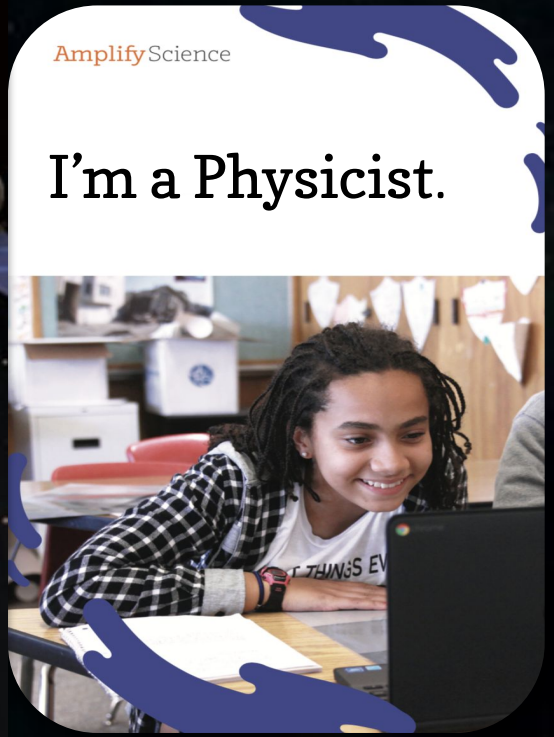
(like a scientist)

Teaching a phenomenon-based lesson



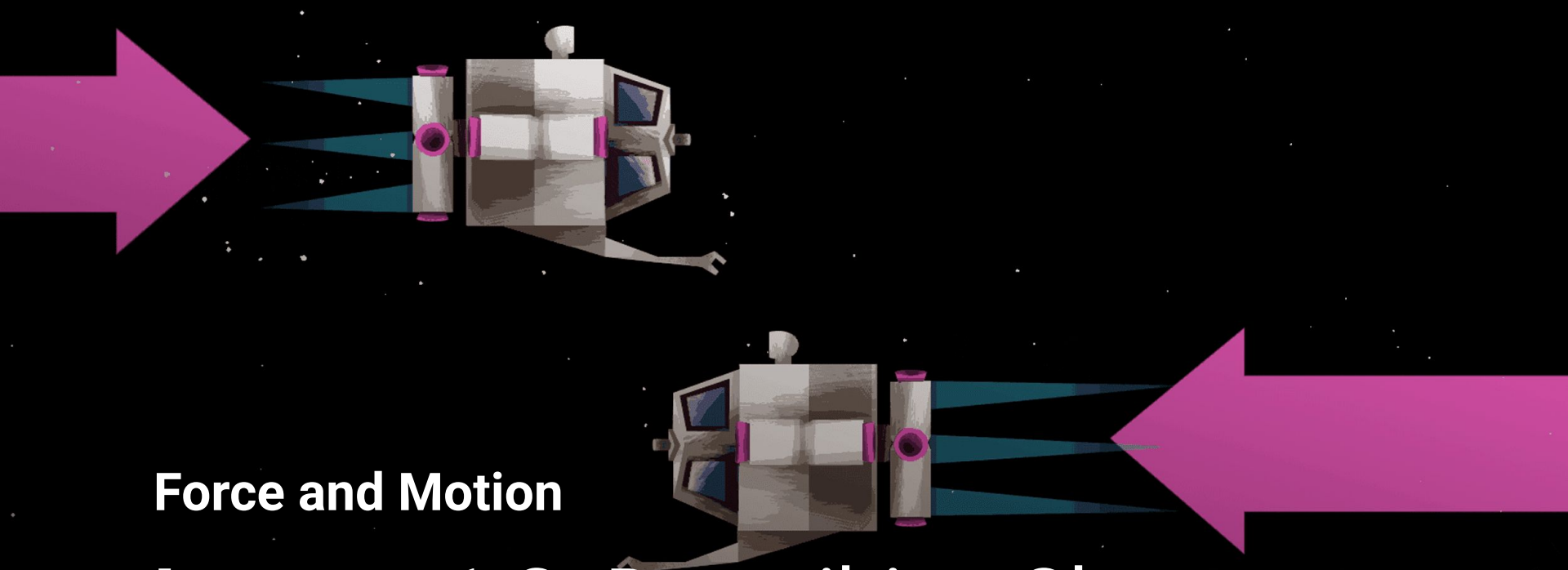
Force and Motion Instructional Sequence





Anchor Phenomenon: Rather than stopping and docking at the space station, the asteroid sample-collecting pod moved in the opposite direction.

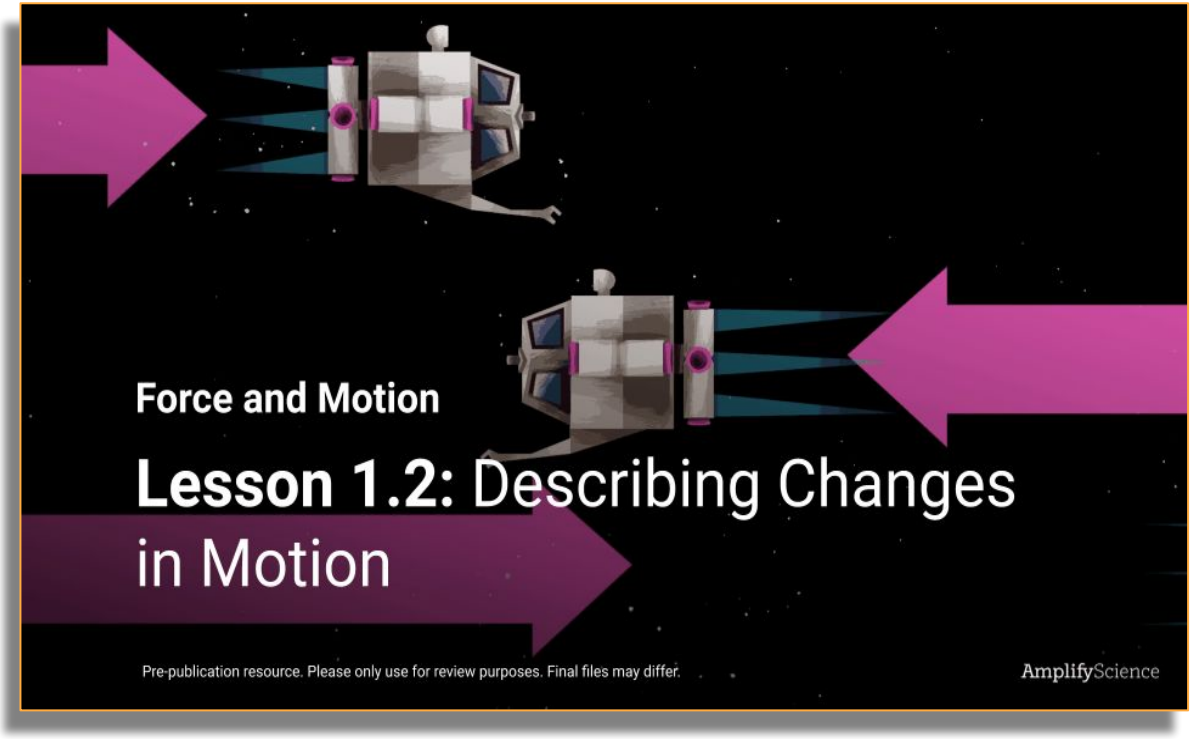
Student Role: Student Physicists



Force and Motion

Lesson 1.2: Describing Changes in Motion

Classroom Slides



👉**Teacher action:**
Read the two claims out loud and give pairs a few minutes to discuss the claims. Point out that students may want to compare the claims storyboard with the storyboard showing the expected outcome. If time allows, invite a few students to share their ideas about the claims with the class.

💁**Students may respond:**
• In Claim 1, the thrusters cause the pod to move in the opposite direction; in Claim 2, the thrusters slow the pod down, but it's not enough, so it collides with the space station.
• (Accept all responses.)

Force and Motion

Lesson 1.2: Describing Changes in Motion

Pre-publication resource. Please only use for review purposes. Final files may differ.

AmplifyScience

Activity 1

Warm-Up

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 questions.

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

Activity 2

Discussing What Happened to the Pod

We are starting a new unit about **force and motion**.

We will investigate a **mystery** involving a space pod.

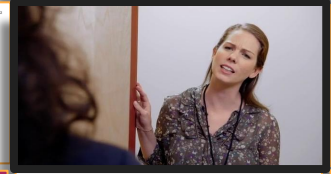
Unit Question

How do forces affect motion?

Why do you think the pod moved in the opposite direction instead of stopping like it was supposed to?

Let's watch a **video** about the space pod mystery.

As you watch, think about **this question.** You will discuss it when the video is over.



Why do you think the pod moved in the opposite direction instead of stopping like it was supposed to?

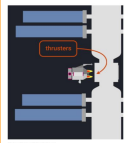
Discuss your ideas about the reflection question.

Asteroid Collection Missions

1. Pod approaches space station at medium speed.
2. Thrusters fire to stop the pod.
3. Docking: pod connects to space station.

Here's **what is usually supposed to happen** during asteroid collection missions.

In this mission, everything was supposed to be the same.



The **thrusters**, or small engines, were supposed to fire and stop the pod as it reached the space station so it could dock.

Instead, this pod moved in the **opposite direction**.

These claims are different explanations for what happened to the pod.

How are the two claims **different**?

Which claim **makes the most sense** to you?

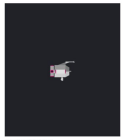
This activity can also be completed using page 7 of the Investigation Notebook.

Activity 3

Exploring Changes in Motion

Chapter 1 Question

What caused the pod to change direction?



In this activity, to understand why the pod changed direction, we will **investigate** how the motion of an object can change and what causes these changes to happen.

This **spring launcher** is one tool that we will use in our investigations.

Today, make sure NOT to push the launcher beyond the 1 mark.

You can use this **diagram** to remember how the spring launcher works.

Notice that the narrow end of the launcher needs to be touching the object you are launching.

This activity can also be completed using page 8 of the Investigation Notebook.

Let's read the **directions** for the investigation.

You can use the launcher to cause the objects to move, but you can also think of **other ways** to change their motion.

This activity can also be completed using page 8 of the Investigation Notebook.

These are the **materials** you can use.

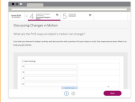
Remember that you are working with laboratory equipment, and it should stay within your work area.

Use the materials to test out different ways that the **motion of an object can change**.

Record your notes in the **data table**.

Activity 4

Discussing Changes in Motion



Next, you will work together to summarize your results.

Discuss and record the **five ways** that an object's motion can change.

This activity can also be completed using page 9 of the Investigation Notebook.

Let's summarize the results as a class.

What are the five ways that **motion can change**?

Vocabulary

velocity

speed in a particular direction

When physicists talk about motion, they have to agree on how to describe it.

Direction is important when describing an object's motion, but you also need to agree on what is called the **frame of reference**. To understand this, let's consider an example.

If I hold a pencil as I walk around, from my **frame of reference**, the pencil is not moving.

But from your frame of reference, the pencil **is** moving.

Physicists also agree on the **units** they are using. The units for velocity help describe how fast the object is moving.

Throughout the unit, we will use centimeters as our measure for distance, and **centimeters per second** as the units for velocity.

Other units can be used to measure velocity as long as you describe the units.

Can you think of other examples of **units** that could describe **velocity**?

1.
2.
3.
4.
5.

We identified **five ways** that motion can change.

Remember that a change in motion is the same thing as a **change in velocity**.

Activity 5

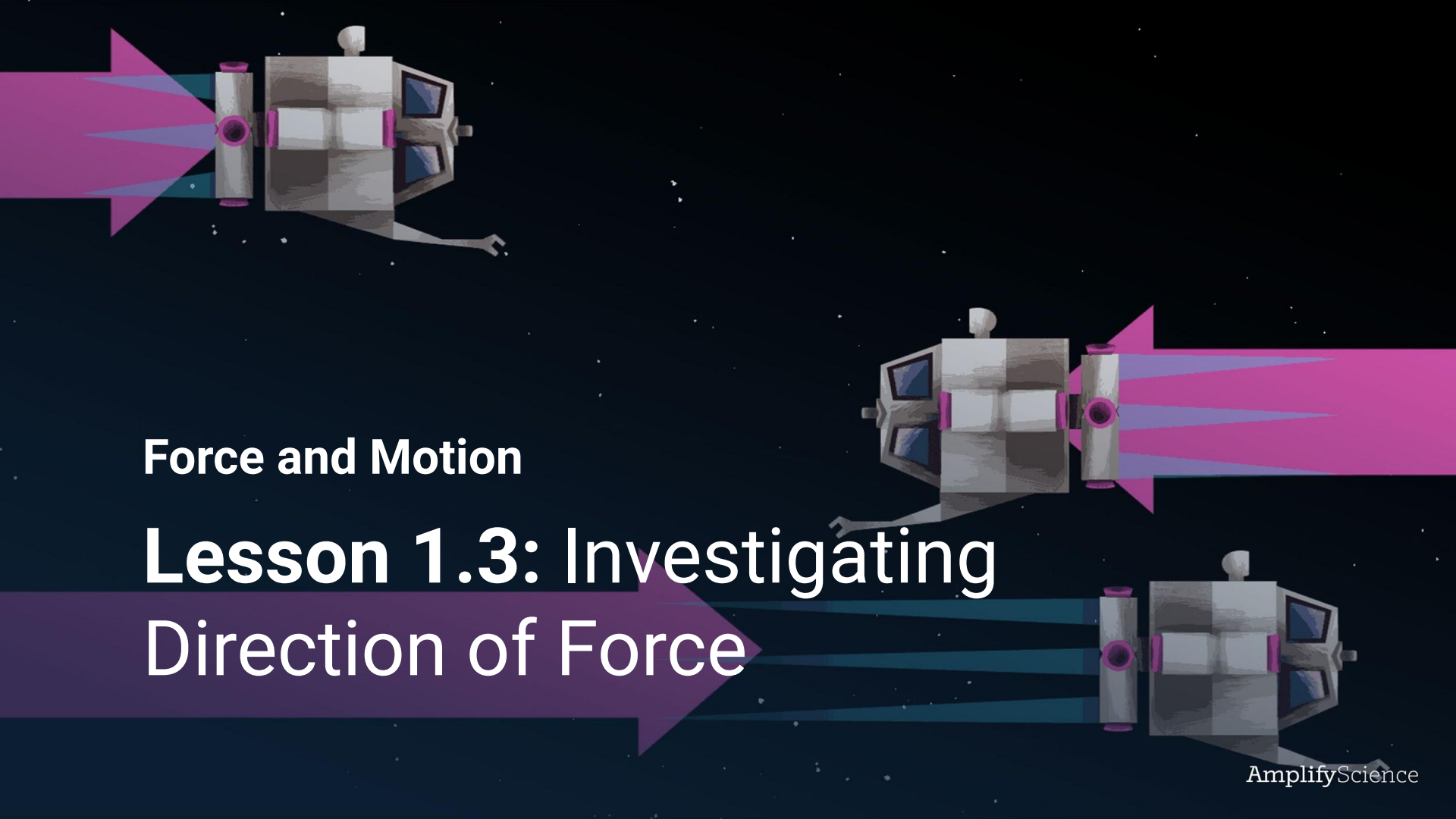
Homework

For homework, **create a model** to show your ideas about what happened to the pod.

End of Lesson

Amplify.

Published and Distributed by Amplify. www.amplify.com



Force and Motion

Lesson 1.3: Investigating Direction of Force

AmplifyScience

5 MIN

Activity 1

Warm-Up

Warm-Up

Signifying Changes in Motion

1. Look carefully at the pair of images and think about what the arrows mean.

   - Which image (A or B) shows the direction someone would need to kick the ball in order to move it toward the goal? ▾

10 MIN

Activity 2

Exploring the Force and Motion Sim

Name: _____ Date: _____

Homework: Creating a Model to Explain What Happened to the Pod

Today you watched a video about a space pod that was trying to dock, but something happened to cause the pod to move away from the space station instead. Scientists don't know what caused this change in direction, because a few seconds of the video went out just as the pod was about to dock. **Create a model to explain what you think happened during the missing seconds that caused the pod to move away from the space station, in the opposite direction.** To create your model you may want to do one of the following:

- Use objects you have at home to show what you think happened. If you do this, bring these objects into class and be prepared to explain what you think happened.
- Create a diagram-model to show what you think happened. Be prepared to explain your diagram to other students.
- Find another way to model your thinking. Be prepared to share your model in class.

1. Describe what you did to create your model:

_____

_____

_____

_____

2. What are two ways your model accurately shows your ideas on what happened to the pod?

_____

_____

_____

_____

3. What are two ways your model does not accurately show your ideas on what happened to the pod?

_____

_____

_____

_____

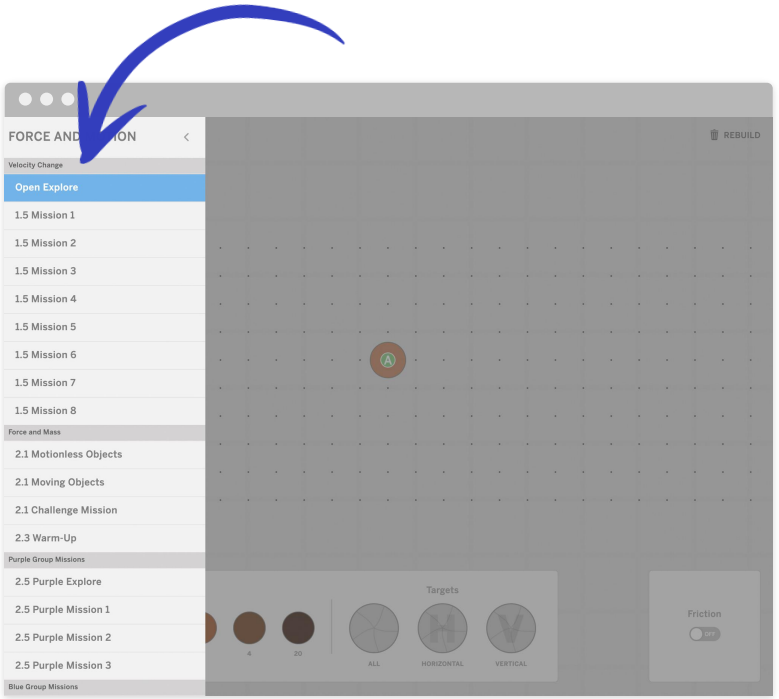
Force and Motion—Lesson 1.2—Activity 5

Let's discuss the models you created after the last lesson.

Use your model to **explain** your thinking about what happened to the pod.

Today, we will investigate this question:

Investigation Question:
What makes an object's motion change?



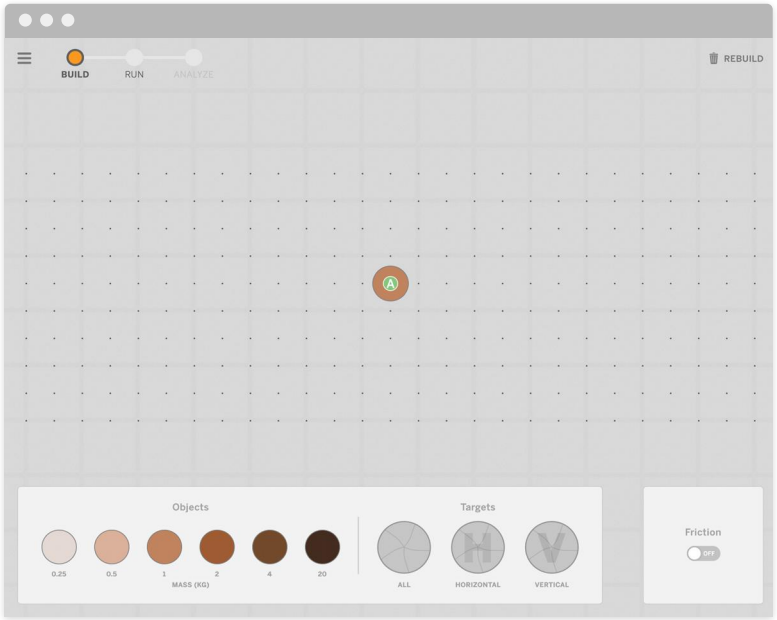
You will gather evidence about how the motion of objects can change using the ***Force and Motion*** **Simulation.**

You'll start by selecting Open Explore mode.

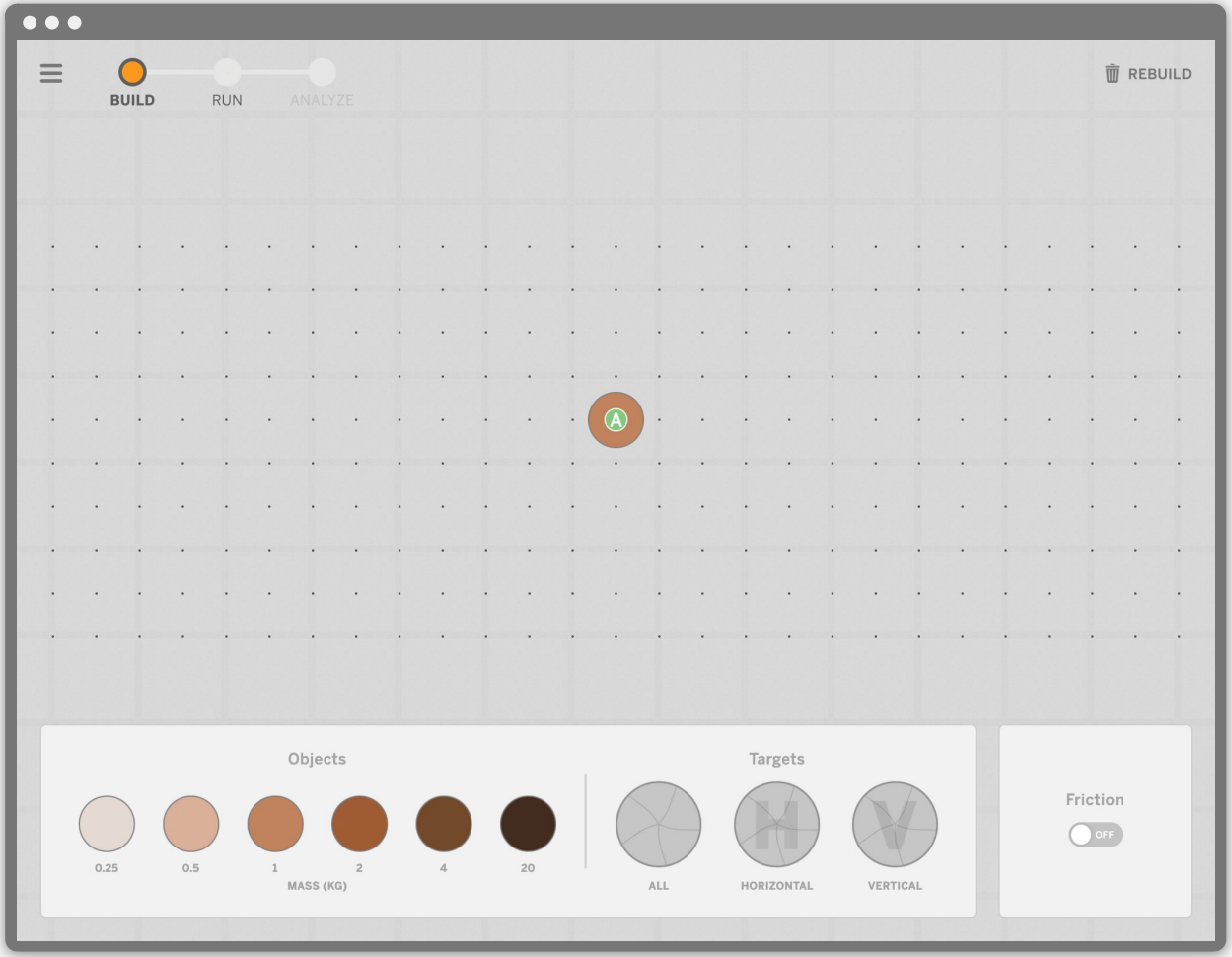
Exploring the Force and Motion Sim

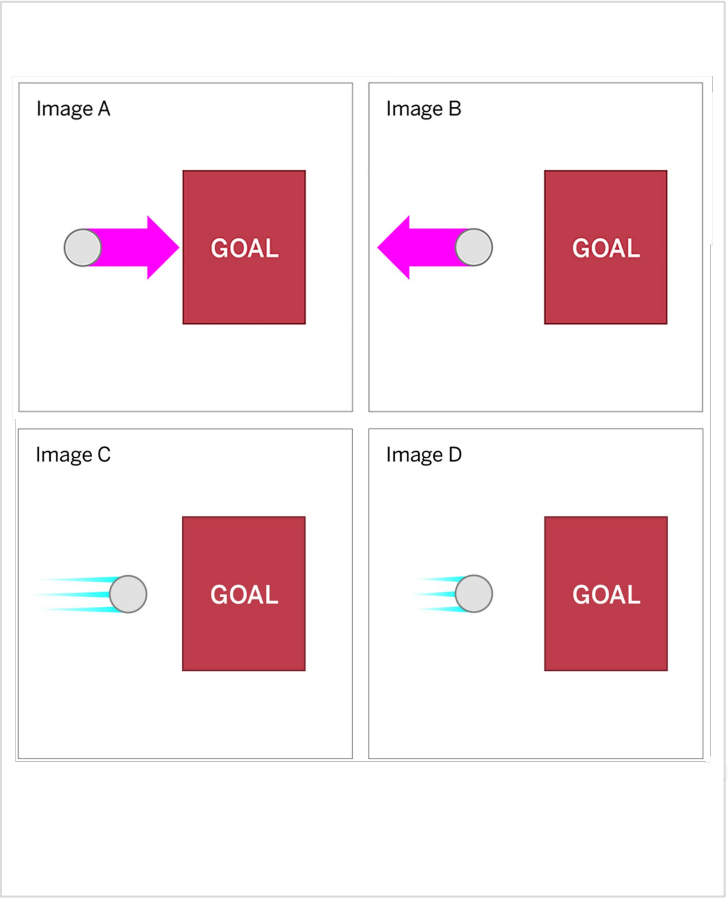
Exploring the Simulation

Explore the *Force and Motion* Simulation: Open Explore mode. As you explore, share your discoveries with your partner.



What did you observe about the **Sim's features?**


BUILD
RUN
ANALYZE
REBUILD
A
Objects
0.25
0.5
1
2
4
20
MASS (KG)
Targets
ALL
HORIZONTAL
VERTICAL
Friction
OFF

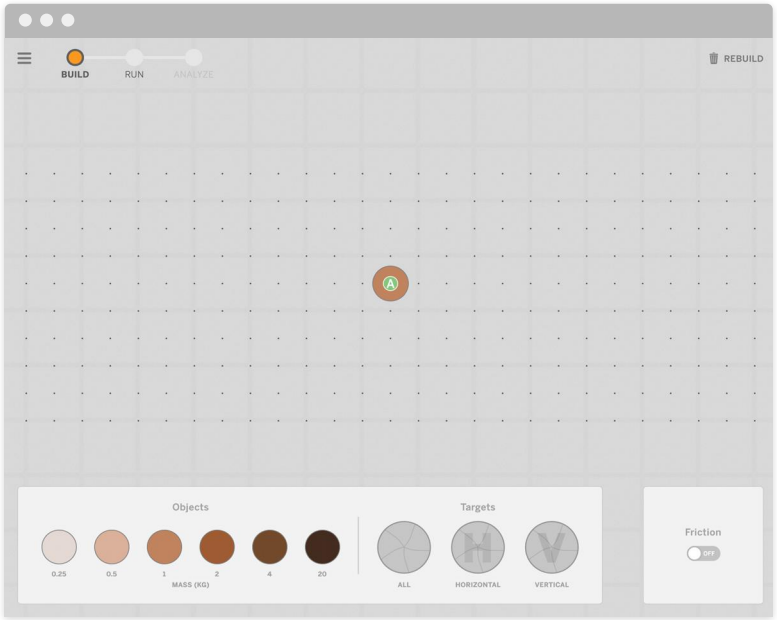


Notice that the **arrows** and **velocity tails** in the Sim are similar to the ones we saw in our Warm-Up today.

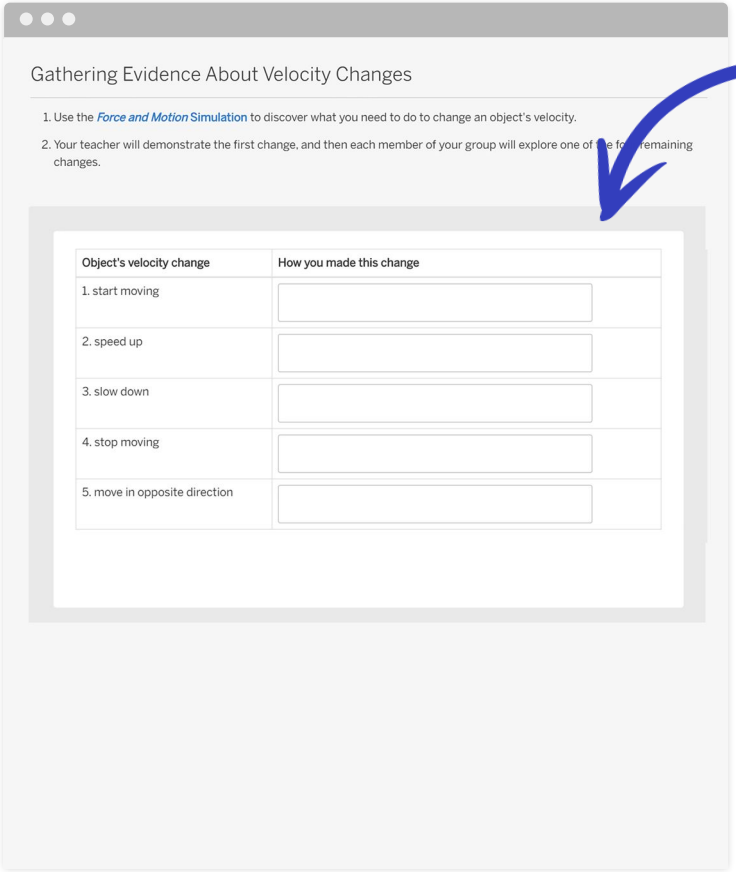
25 MIN

Activity 3

Gathering Evidence About Velocity Changes



Next, we'll use the Sim to explore the **ways an object's velocity can change**. I'll demonstrate one way by making an object **start moving**, and then you'll explore the other ways in groups.

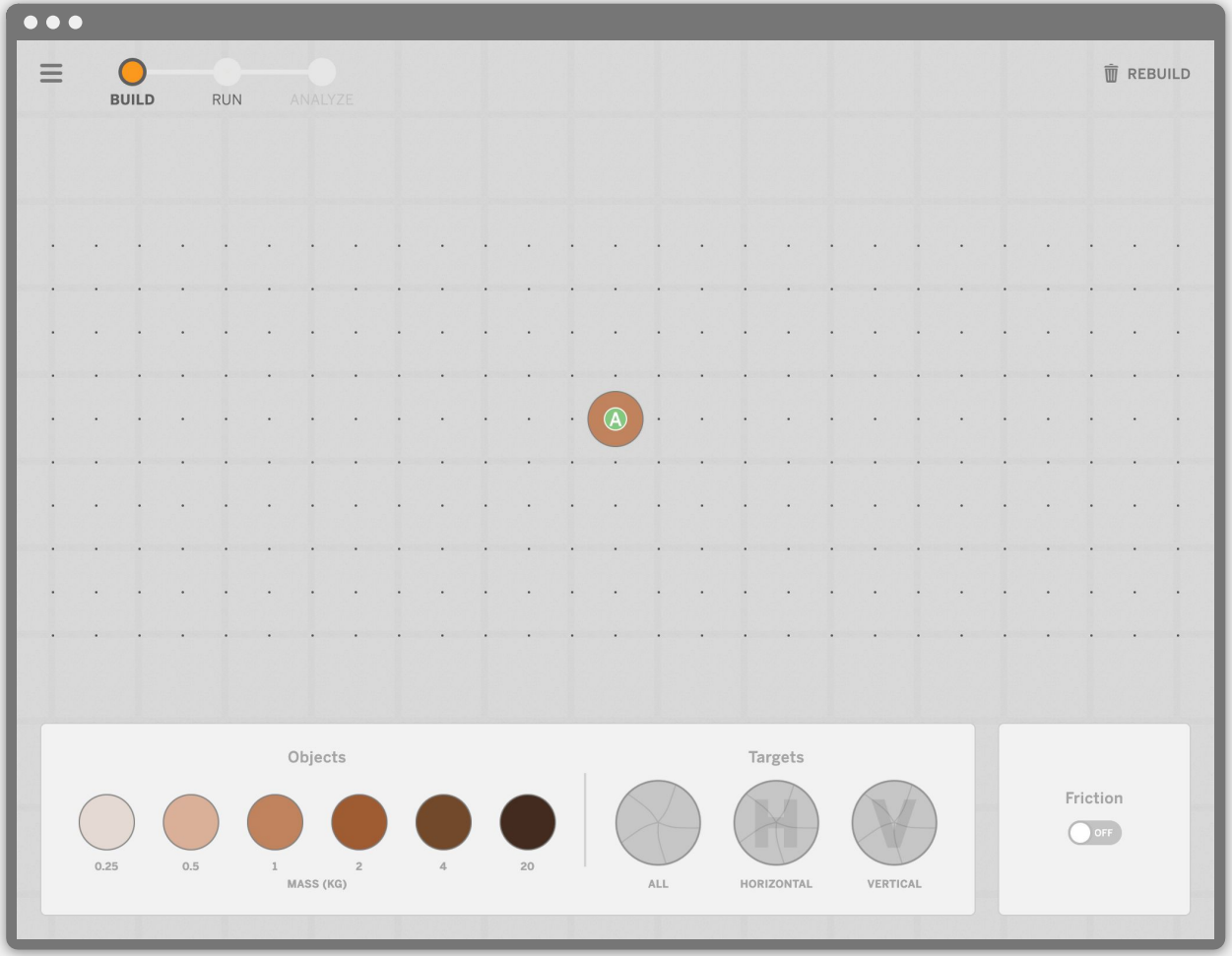


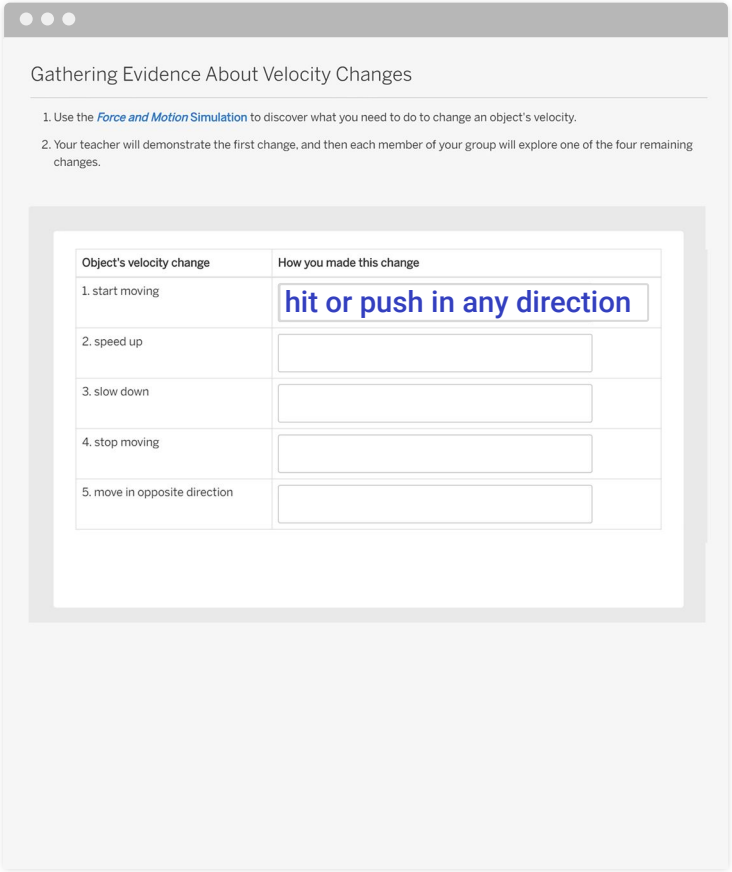
Gathering Evidence About Velocity Changes

1. Use the *Force and Motion* Simulation to discover what you need to do to change an object's velocity.
2. Your teacher will demonstrate the first change, and then each member of your group will explore one of the four remaining changes.

Object's velocity change	How you made this change
1. start moving	
2. speed up	
3. slow down	
4. stop moving	
5. move in opposite direction	

As you gather evidence about what you need to do to change an object's velocity, you'll **record your answers** in this table.


BUILD
RUN
ANALYZE
REBUILD
A
Objects
0.25
0.5
1
2
4
20
MASS (KG)
Targets
ALL
HORIZONTAL
VERTICAL
Friction
OFF



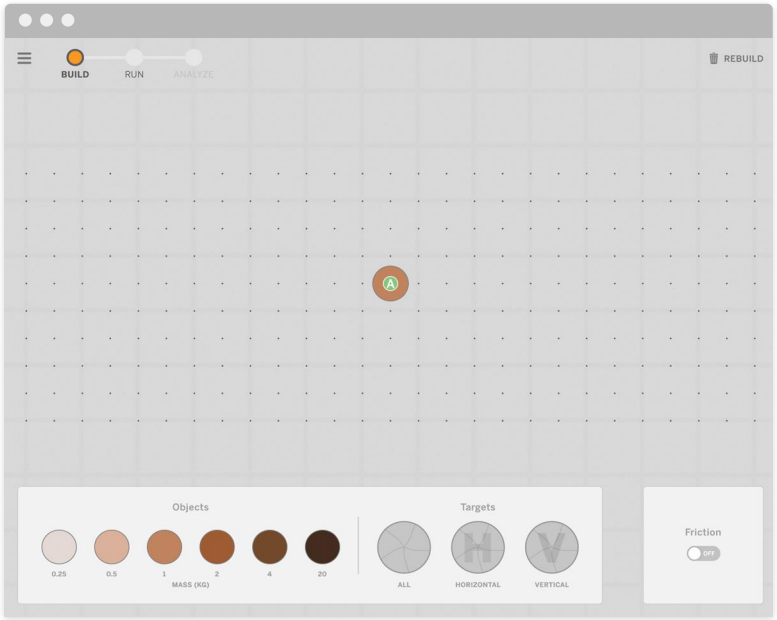
Gathering Evidence About Velocity Changes

1. Use the *Force and Motion* Simulation to discover what you need to do to change an object's velocity.
2. Your teacher will demonstrate the first change, and then each member of your group will explore one of the four remaining changes.

Object's velocity change	How you made this change
1. start moving	hit or push in any direction
2. speed up	
3. slow down	
4. stop moving	
5. move in opposite direction	

To make an object **start moving,** we can push it or make another object run into it. This can happen in any direction.

In Row 1, I'd write, "hit or push in any direction."

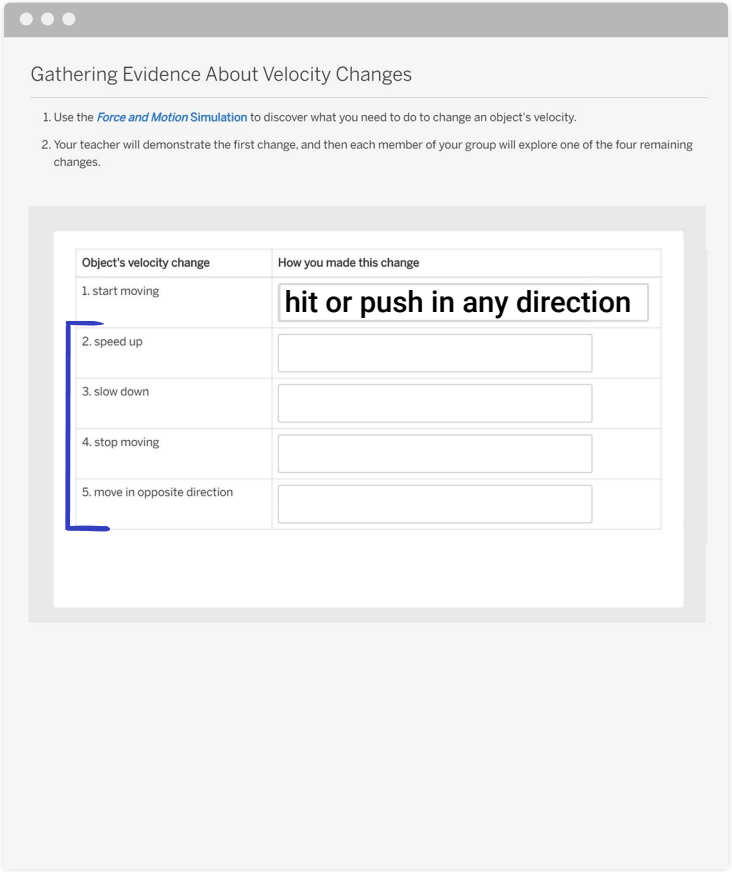


You will work in groups of four, and each person will **explore** one of the remaining ways an object's velocity can change. You'll **share** what you discover with your group.

Gathering Evidence About Velocity Changes

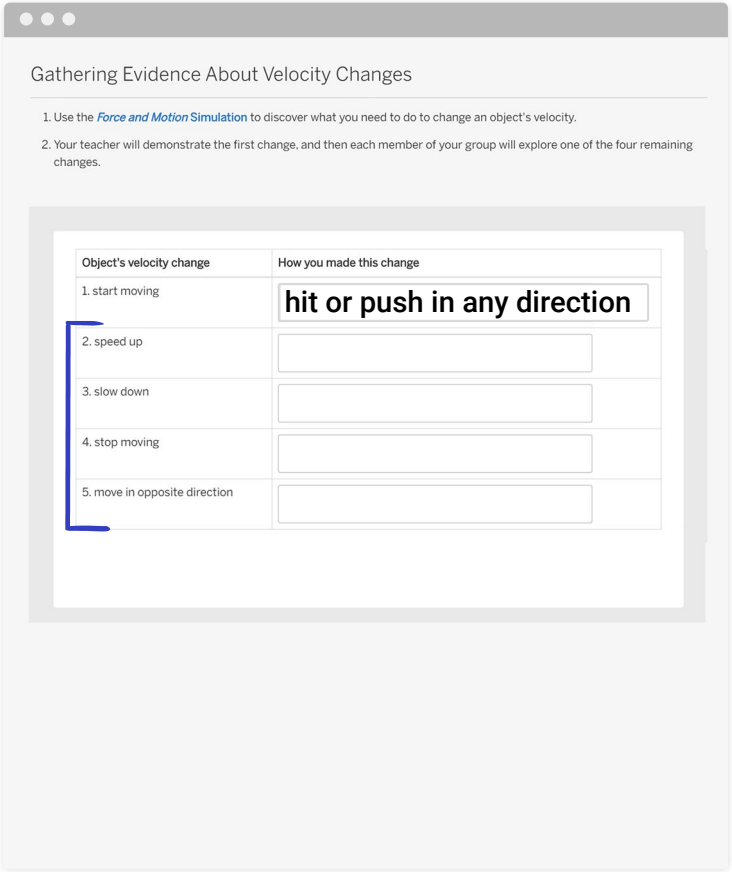
1. Use the ***Force and Motion* Simulation** to discover what you need to do to change an object's velocity.
2. Your teacher will demonstrate the first change, and then each member of your group will explore one of the four remaining changes.

Object's velocity change	How you made this change
1. start moving	
2. speed up	
3. slow down	



Each group member will now share and demonstrate their velocity change.

Share what you did to make your velocity change happen, as the rest of the group listens and records.



Gathering Evidence About Velocity Changes

1. Use the *Force and Motion* Simulation to discover what you need to do to change an object's velocity.
2. Your teacher will demonstrate the first change, and then each member of your group will explore one of the four remaining changes.

Object's velocity change	How you made this change
1. start moving	hit or push in any direction
2. speed up	
3. slow down	
4. stop moving	
5. move in opposite direction	

Let's discuss how we used the Sim to change an object's velocity and **think about the words** that can describe what we did.

Vocabulary

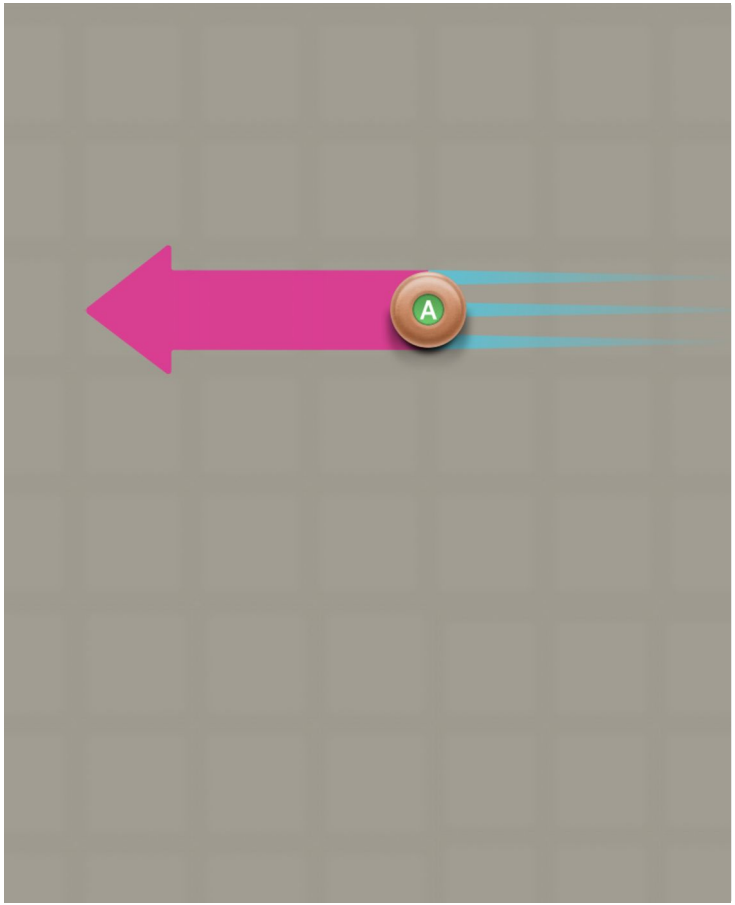
force

a push or a pull that can change the motion of an object

Vocabulary

exert

to apply a force

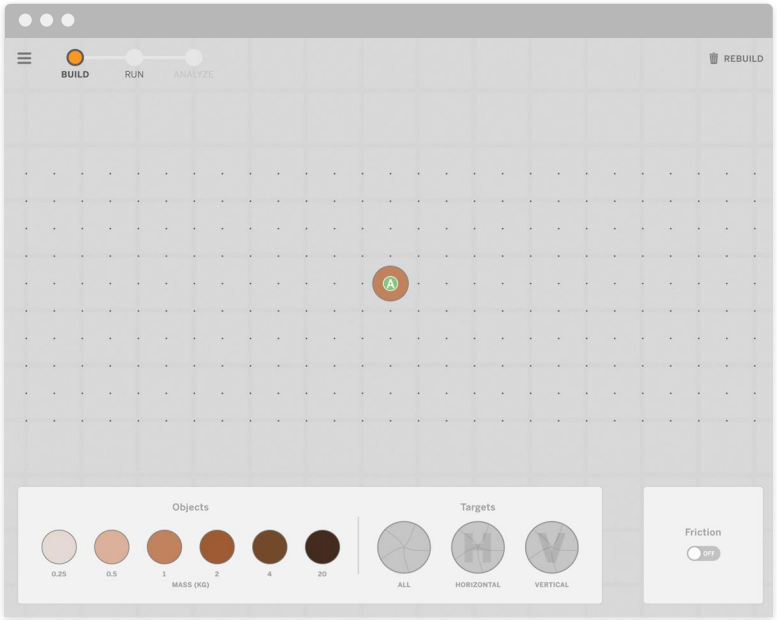


To cause each of the velocity changes, you had to **exert a force**.

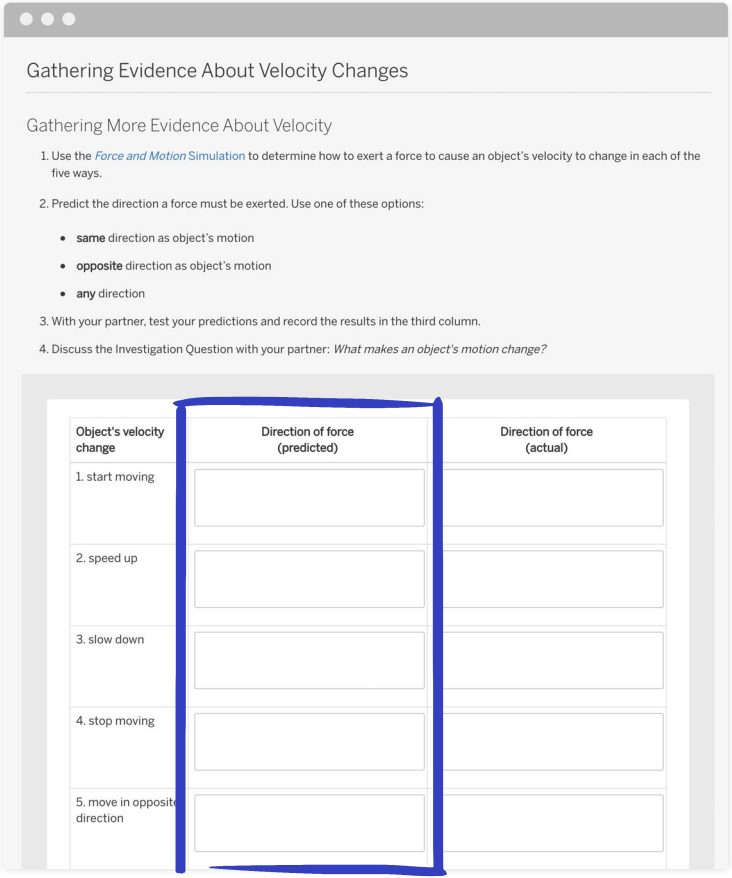
This leads to our first **key concept.**

Key Concept

1. A force is required to change the velocity of an object.



In the next Sim activity, you will determine **in which direction** a force must be exerted to cause each of the ways an object's velocity can change.



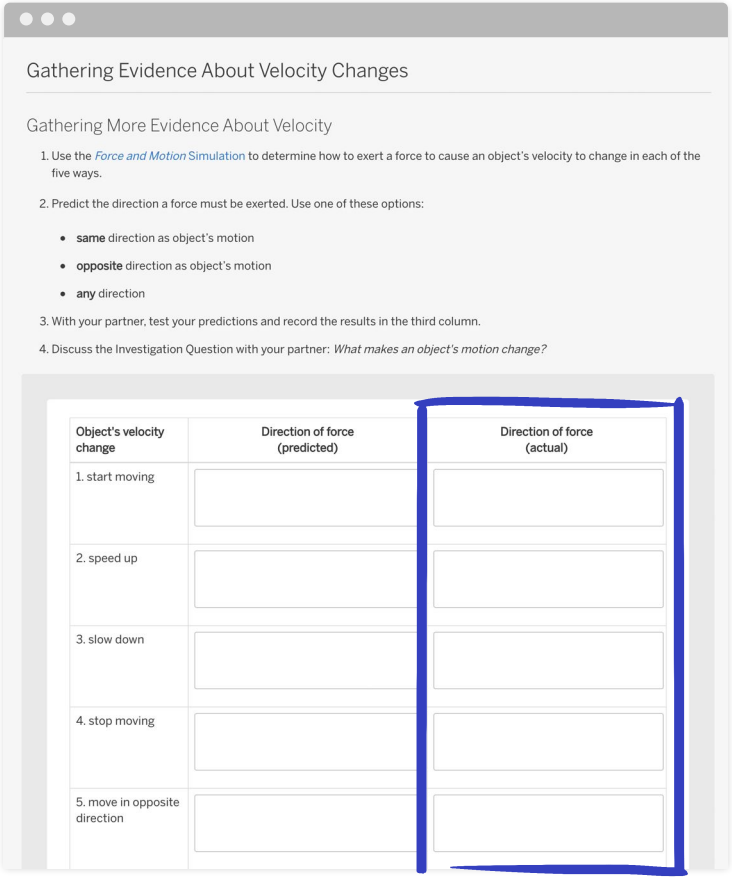
Gathering Evidence About Velocity Changes

Gathering More Evidence About Velocity

1. Use the *Force and Motion* Simulation to determine how to exert a force to cause an object's velocity to change in each of the five ways.
2. Predict the direction a force must be exerted. Use one of these options:
   - **same** direction as object's motion
   - **opposite** direction as object's motion
   - **any** direction
3. With your partner, test your predictions and record the results in the third column.
4. Discuss the Investigation Question with your partner: *What makes an object's motion change?*

Object's velocity change	Direction of force (predicted)	Direction of force (actual)
1. start moving		
2. speed up		
3. slow down		
4. stop moving		
5. move in opposite direction		

Before you investigate, **record your predictions** about what you think will happen. Then, **share** your predictions with your partners.



Gathering Evidence About Velocity Changes

Gathering More Evidence About Velocity

1. Use the *Force and Motion* Simulation to determine how to exert a force to cause an object's velocity to change in each of the five ways.
2. Predict the direction a force must be exerted. Use one of these options:
   - **same** direction as object's motion
   - **opposite** direction as object's motion
   - **any** direction
3. With your partner, test your predictions and record the results in the third column.
4. Discuss the Investigation Question with your partner: *What makes an object's motion change?*

Object's velocity change	Direction of force (predicted)	Direction of force (actual)
1. start moving		
2. speed up		
3. slow down		
4. stop moving		
5. move in opposite direction		

Now it's time to test your predictions.

Complete your tests and **record** the results. Then, discuss your answers to the Investigation Question.

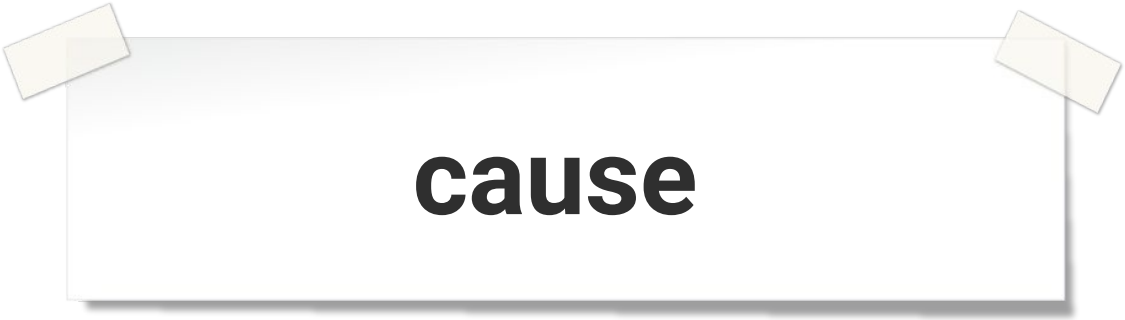
Now that we've explored five different ways that velocity can change, let's share our ideas about the question we've been investigating.

What makes an object's motion change?

Key Concept

2. How an object changes velocity depends on the direction of the force exerted on that object.

Vocabulary



an event or process that leads to a result or change

Vocabulary

effect

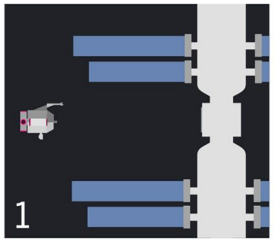
a result or change that happens because of an event or process

5 MIN

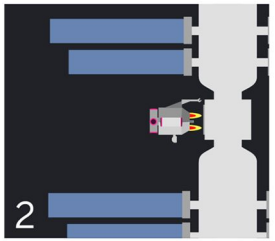
Activity 4

How the Pod Changed Its Velocity

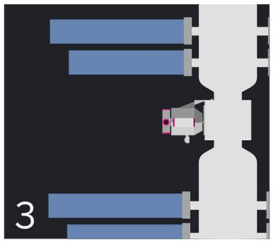
Asteroid Collection Missions



Pod approaches space station at medium speed.



Thrusters fire to stop the pod.

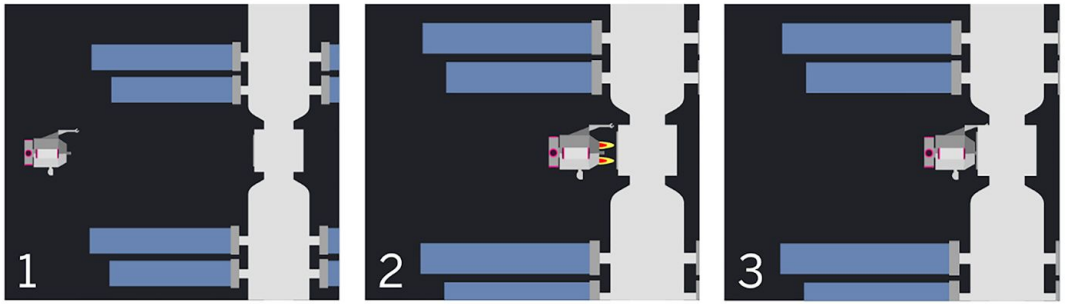


Docking: pod connects to space station.

Remember, this is what was supposed to happen during the pod mission.

Think about **in which direction the thrusters need to fire** in order to exert a force that would cause the pod to stop.

How the Pod Changed Its Velocity

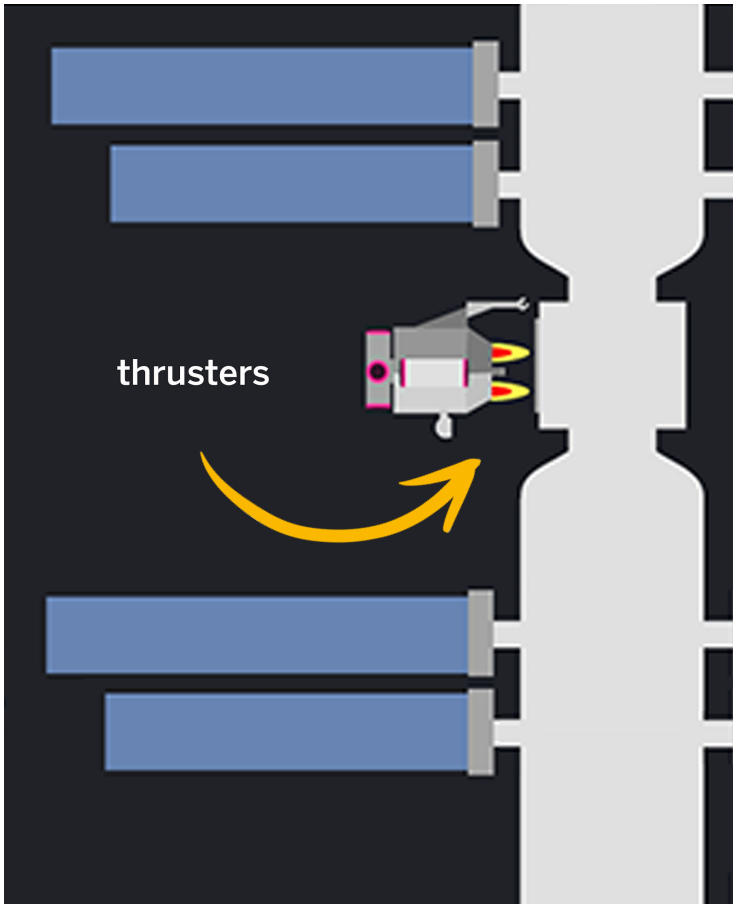


Pod approaches space station at medium speed.

Thrusters fire to stop the pod.

Docking: pod connects to space station.

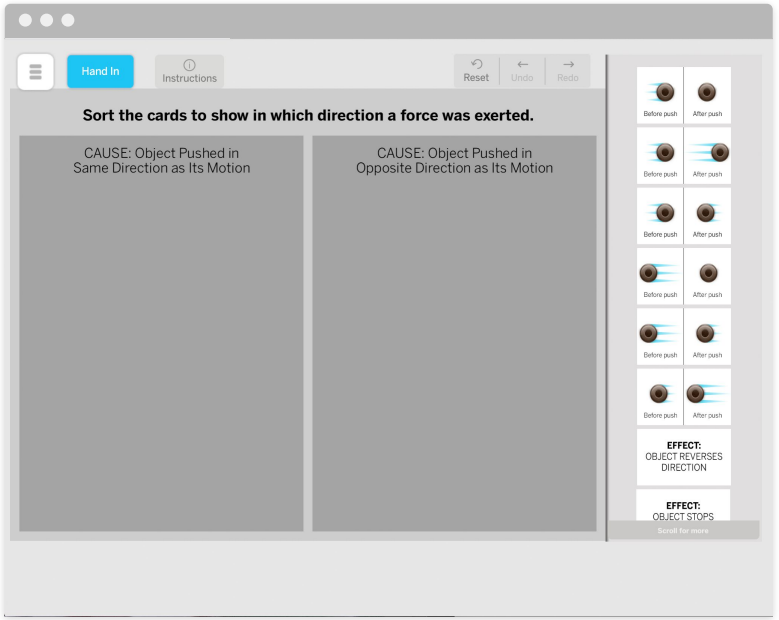
The thrusters fire to exert a force in the ▾ as the motion of the pod, and that causes it to stop.



In the pod mission, the thrusters fired in the **opposite direction** of the pod's motion, but the change in velocity was not what the USA team expected. We'll continue to investigate why.

Activity 5

Homework



In this activity, you will use a Sorting Tool to review **cause-and-effect relationships** between forces and velocity changes.

Homework

Identifying Cause and Effect

1. Open the *Force and Motion* Sorting Tool activity: **Cause and Effect**.
2. When your model is complete, press HAND IN.

Goal: Identify the direction of the force that will cause each change in velocity.

Do:

- Drag each card to the appropriate column.

End of Lesson

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

Amplify.

Published and Distributed by Amplify. www.amplify.com

Go ‘Live’ to Model Preparing to Teach

Force and Motion Classroom Wall

Unit Question

How do forces affect motion?

Chapter 1 Question

What caused the pod to change direction?

Key Concepts

1. A force is required to change the velocity of an object.

Vocabulary

velocity

Transition to model lesson ‘LIVE’ on the PLATFORM

End model lesson

Force and Motion Classroom Wall

Unit Question

How do forces affect motion?

Chapter 1 Question

What caused the pod to change direction?

Key Concepts

1. A force is required to change the velocity of an object.

Vocabulary

velocity

I notice, I wonder...

Answer in the chat feature

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

What do you now **wonder ?**

Chapter 1: What caused the pod to change direction?

Investigation Question:
What makes an object's motion change?

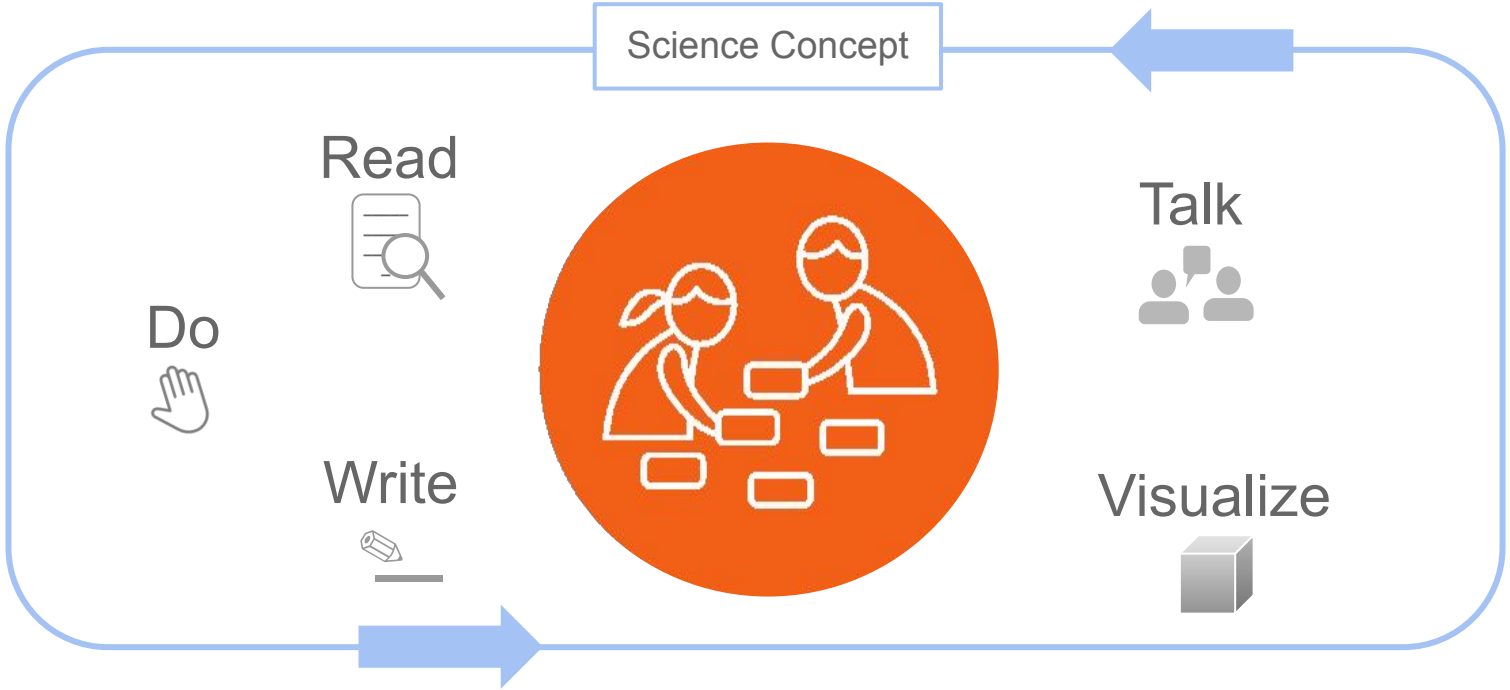
Multiple sources of evidence

Hands-on investigation

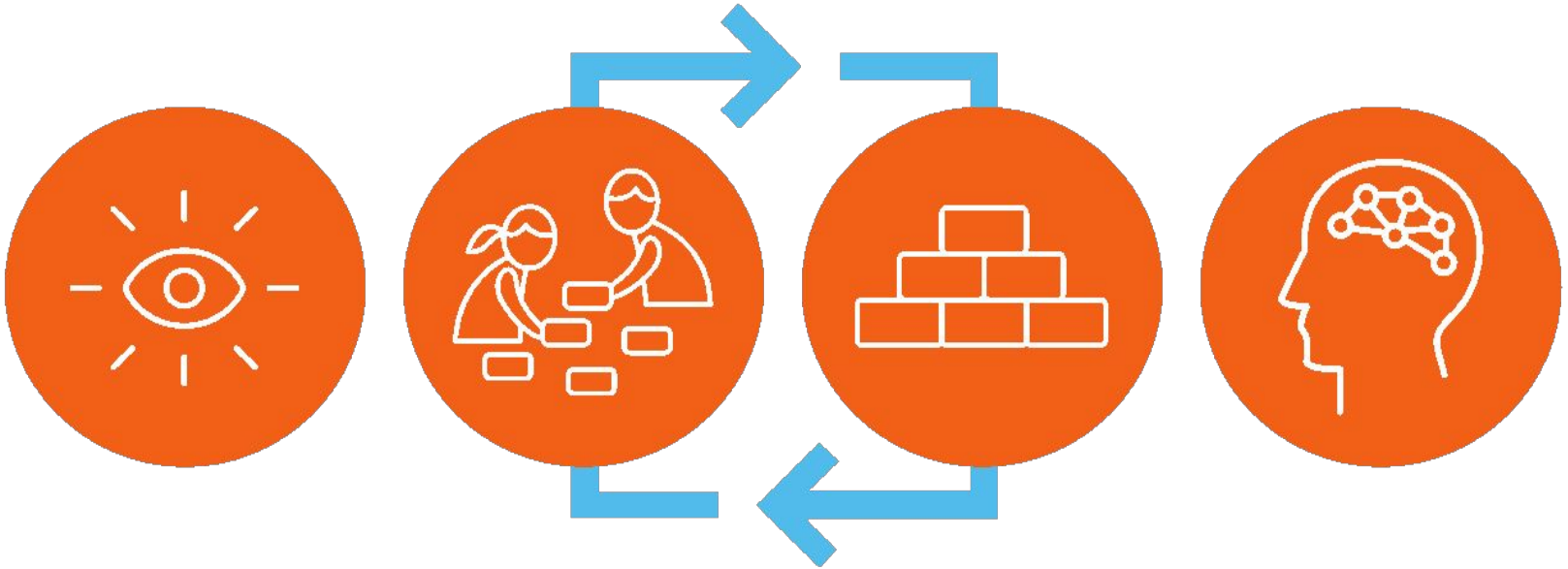
Simulation

Multimodal learning

Gathering evidence from different sources



Amplify Science approach

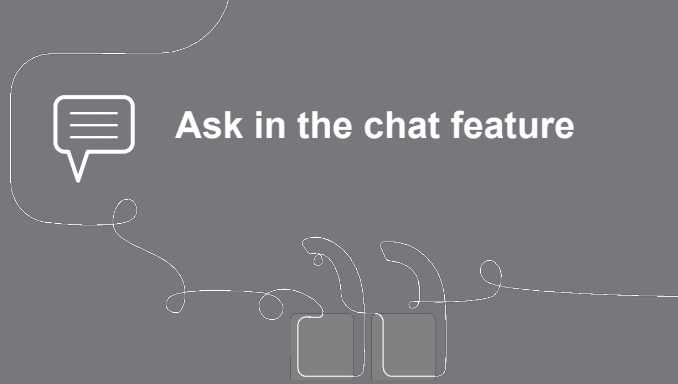


Introduce a real world problem

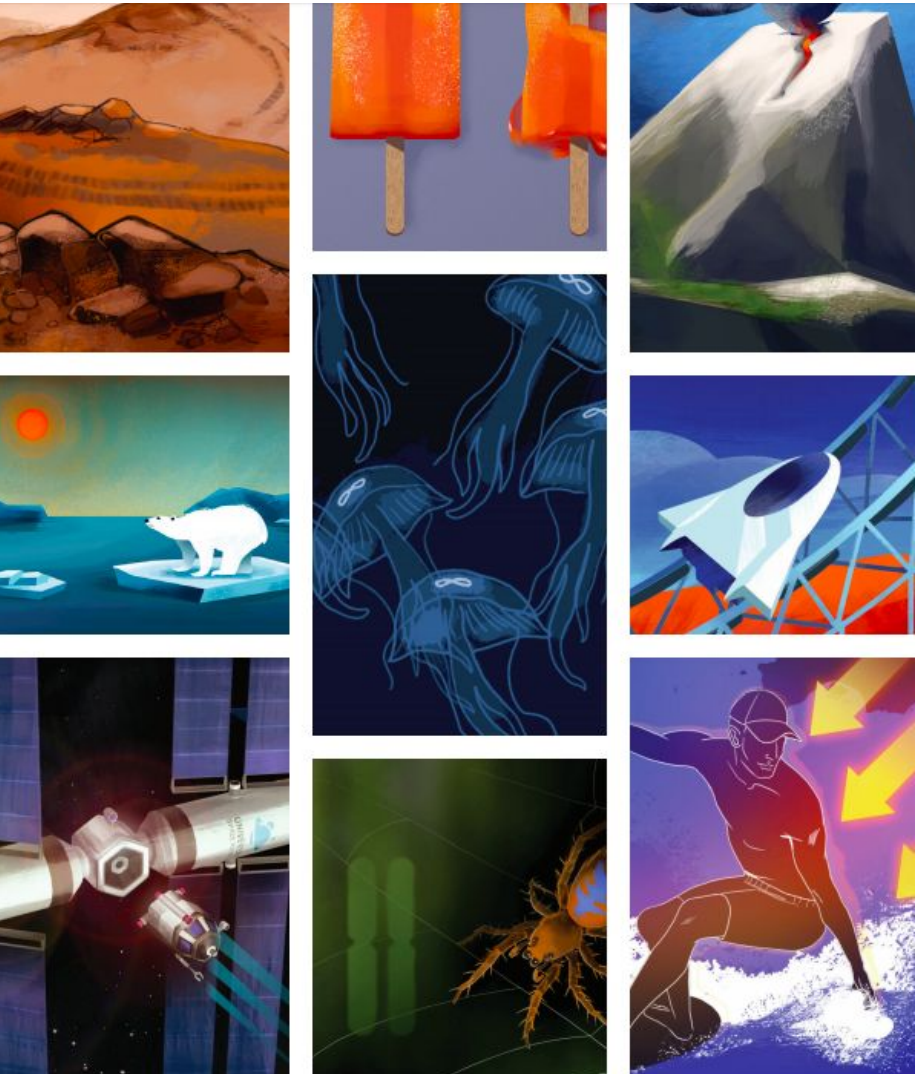
Collect evidence from multiple sources

Build increasingly complex explanations

Apply knowledge to solve a different problem



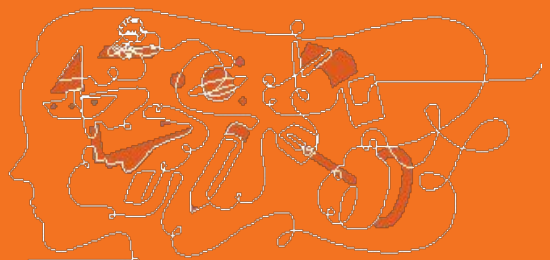
Questions?



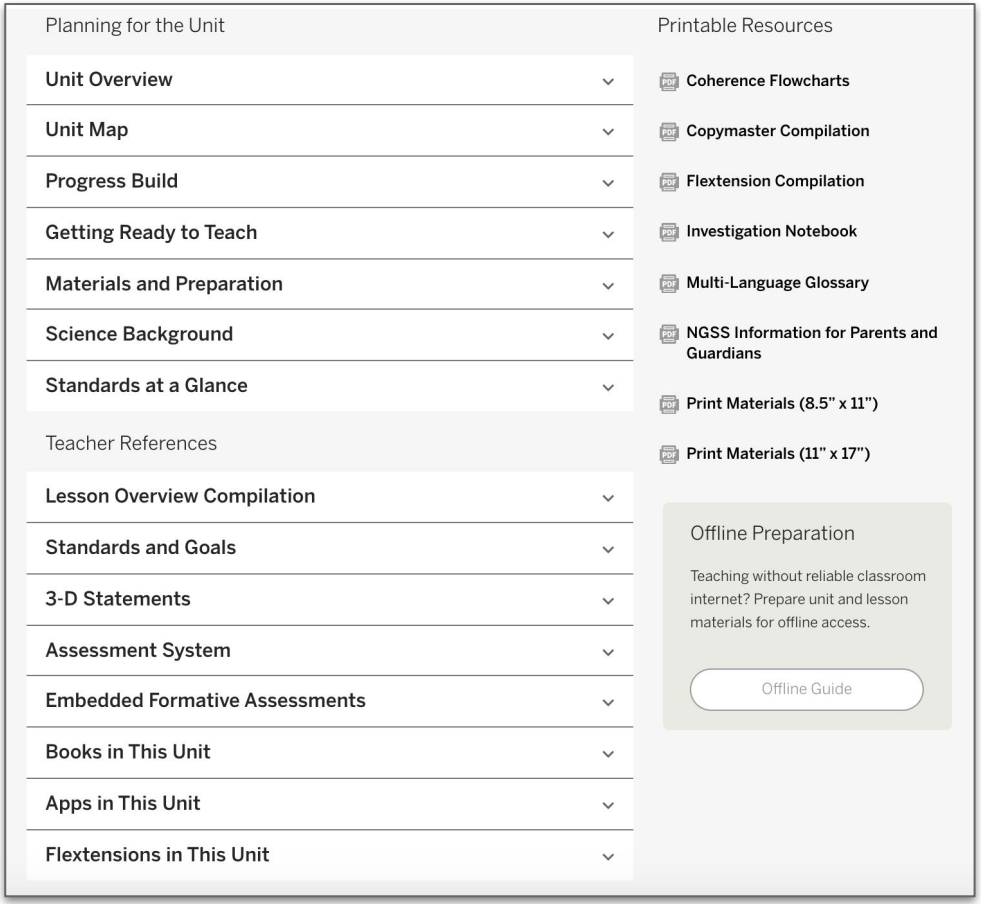
Plan for the day

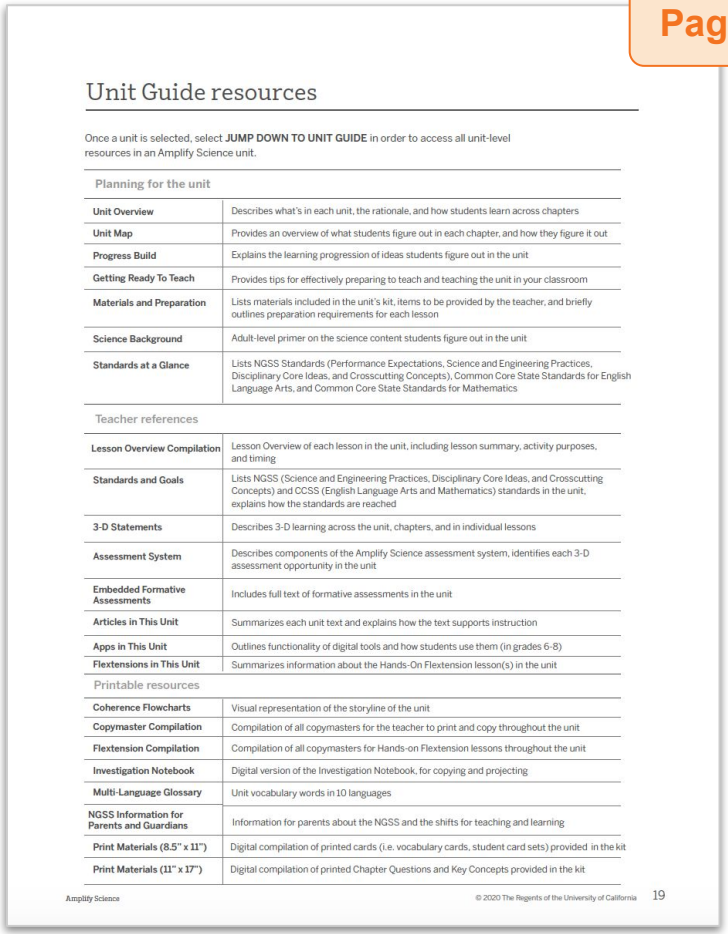
- ✓ What is Amplify Science?
- ✓ Navigation essentials
- ✓ Teaching a phenomenon-based lesson
- Unit Guide Resources
- Assessments
- Closing and reflection

Unit Guide Resources



Unit Guide Resources





Unit Guide resources

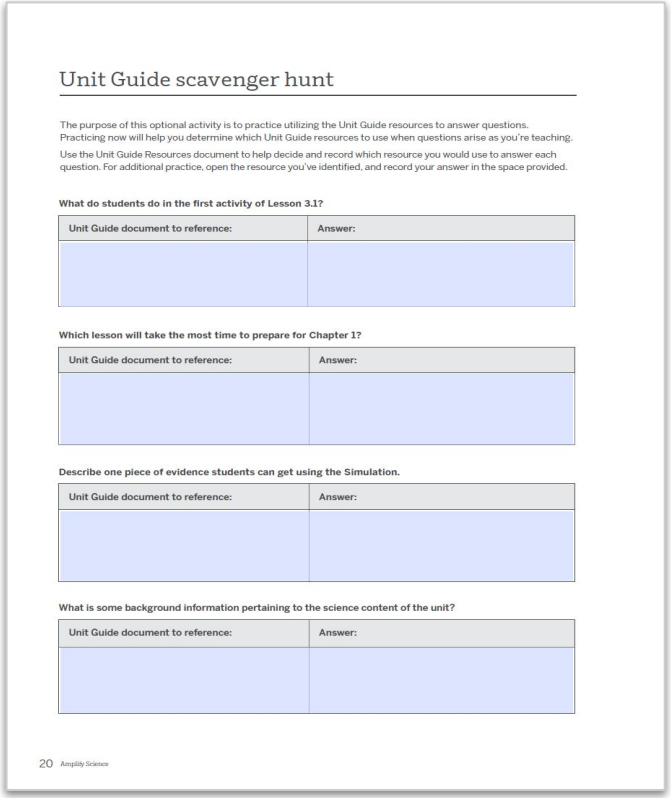
Once a unit is selected, select **JUMP DOWN TO UNIT GUIDE** in order to access all unit-level resources in an Amplify Science unit.

Planning for the unit	
Unit Overview	Describes what's in each unit, the rationale, and how students learn across chapters
Unit Map	Provides an overview of what students figure out in each chapter, and how they figure it out
Progress Build	Explains the learning progression of ideas students figure out in the unit
Getting Ready To Teach	Provides tips for effectively preparing to teach and teaching the unit in your classroom
Materials and Preparation	Lists materials included in the unit's kit, items to be provided by the teacher, and briefly outlines preparation requirements for each lesson
Science Background	Adult-level primer on the science content students figure out in the unit
Standards at a Glance	Lists NGSS Standards (Performance Expectations, Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts), Common Core State Standards for English Language Arts, and Common Core State Standards for Mathematics
Teacher references	
Lesson Overview Compilation	Lesson Overview of each lesson in the unit, including lesson summary, activity purposes, and timing
Standards and Goals	Lists NGSS (Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts) and CCSS (English Language Arts and Mathematics) standards in the unit, explains how the standards are reached
3-D Statements	Describes 3-D learning across the unit, chapters, and in individual lessons
Assessment System	Describes components of the Amplify Science assessment system, identifies each 3-D assessment opportunity in the unit
Embedded Formative Assessments	Includes full text of formative assessments in the unit
Articles in This Unit	Summarizes each unit text and explains how the text supports instruction
Apps in This Unit	Outlines functionality of digital tools and how students use them (in grades 6-8)
Flextensions in This Unit	Summarizes information about the Hands-On Flextension lesson(s) in the unit
Printable resources	
Coherence Flowcharts	Visual representation of the storyline of the unit
Copymaster Compilation	Compilation of all copymasters for the teacher to print and copy throughout the unit
Flextension Compilation	Compilation of all copymasters for Hands-on Flextension lessons throughout the unit
Investigation Notebook	Digital version of the Investigation Notebook, for copying and projecting
Multi-Language Glossary	Unit vocabulary words in 10 languages
NGSS Information for Parents and Guardians	Information for parents about the NGSS and the shifts for teaching and learning
Print Materials (8.5" x 11")	Digital compilation of printed cards (i.e. vocabulary cards, student card sets) provided in the kit
Print Materials (11" x 17")	Digital compilation of printed Chapter Questions and Key Concepts provided in the kit

Unit Guide Exploration

Pages 18-19

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?

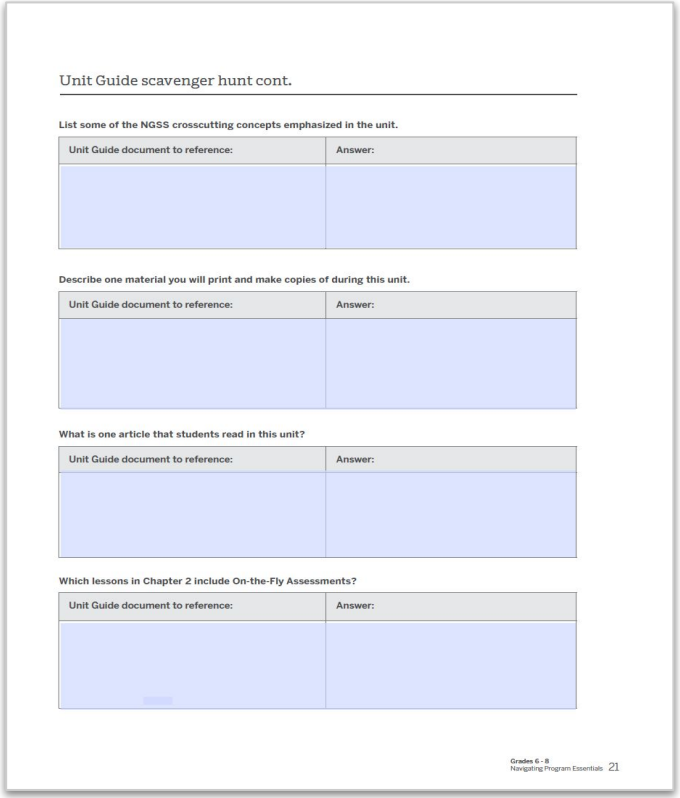
Unit Guide document to reference:	Answer:

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:

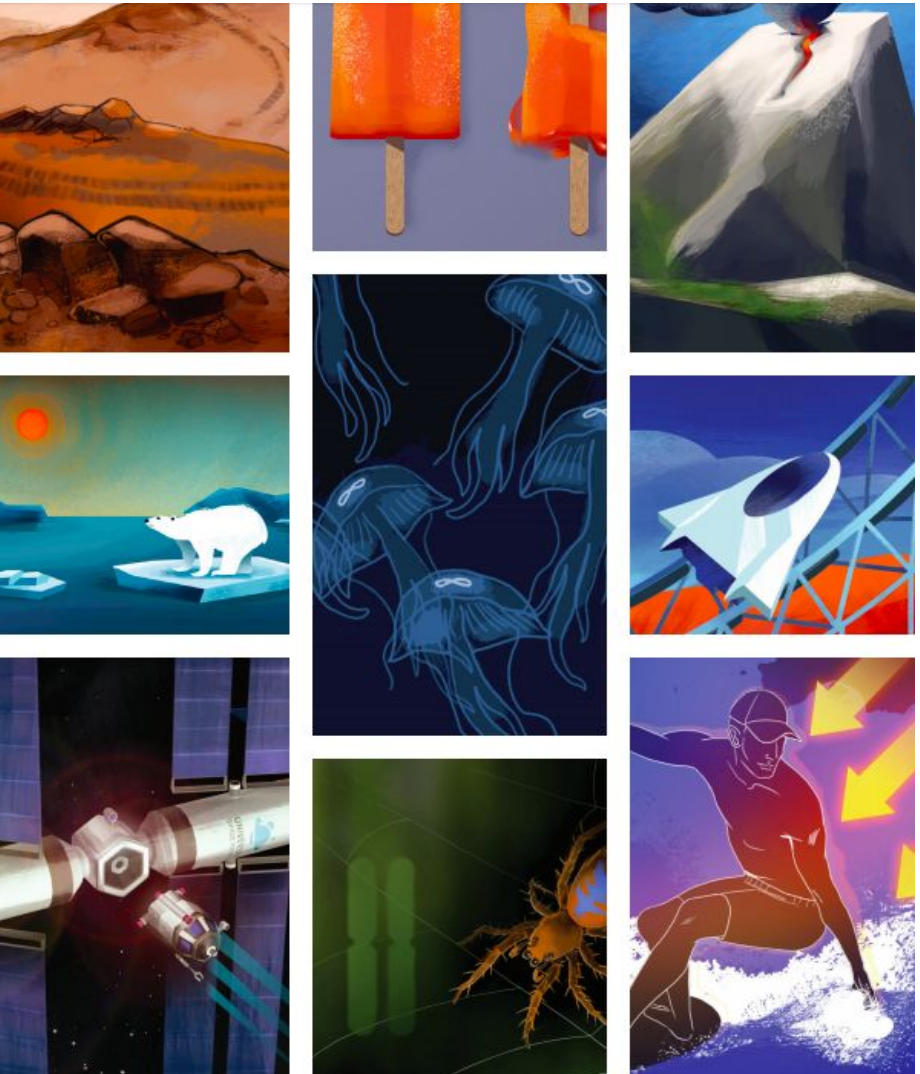
What is one article that students read in this unit?

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

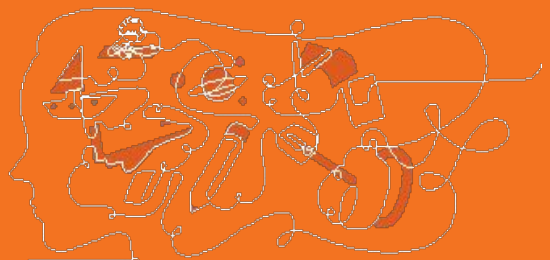


Plan for the day

- ✔ What is Amplify Science?
- ✔ Navigation essentials
- ✔ Teaching a Lesson
- ✔ Unit Guide Resources
- Assessments
- Closing and Reflection

Progress Build

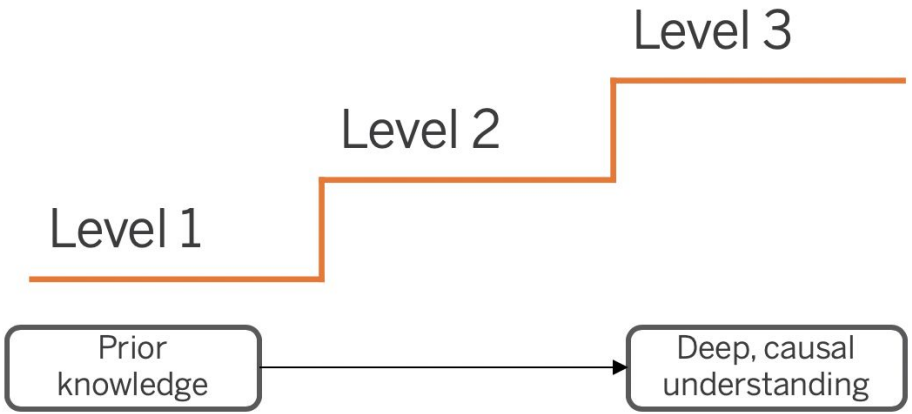
A unit-specific learning progression



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!



Force and Motion

How do these ideas relate to one another?

- A force causes a change in an object's velocity.

- An object's mass determines its velocity change for a given force.

Earth, Moon and Sun

Building upon a foundation

Chapter 1

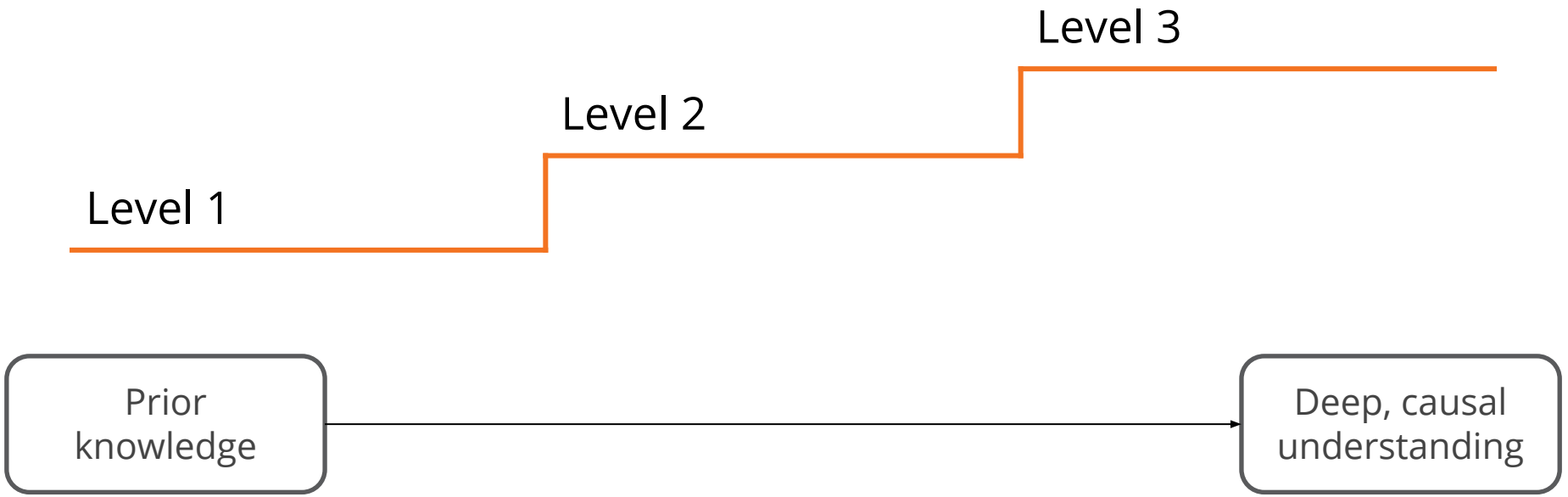
A force causes a change in an object's velocity.

Chapter 2

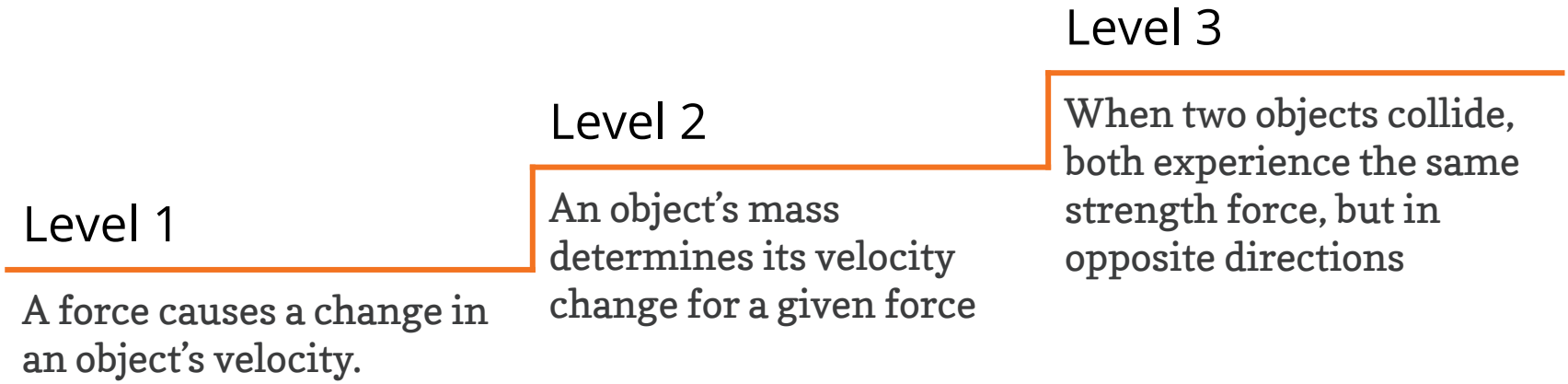
An object's mass determines its velocity change for a given force.

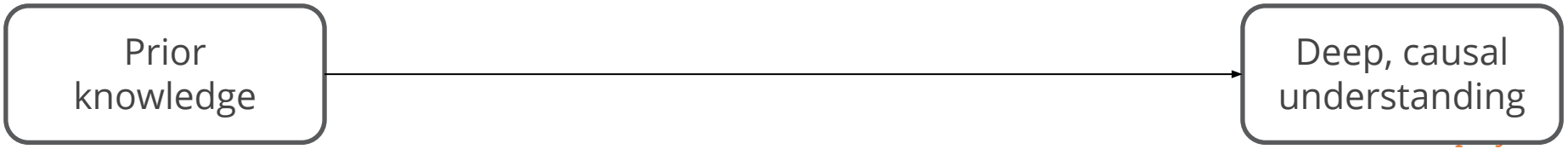
Progress Build

A unit-specific learning progression



Earth, Moon, and Sun Progress Build

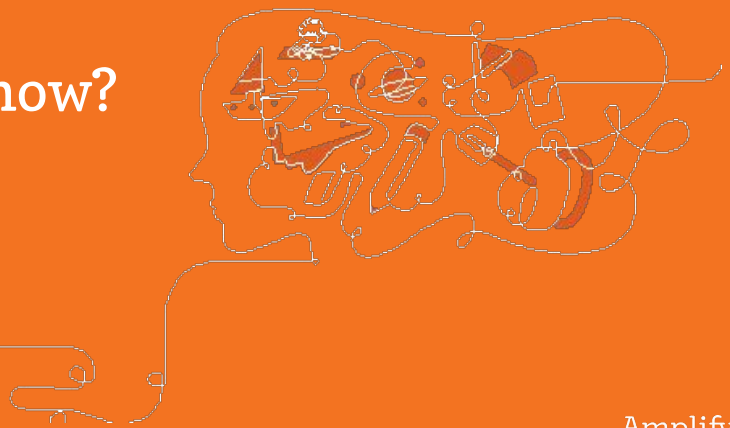




5 min break

Assessment System

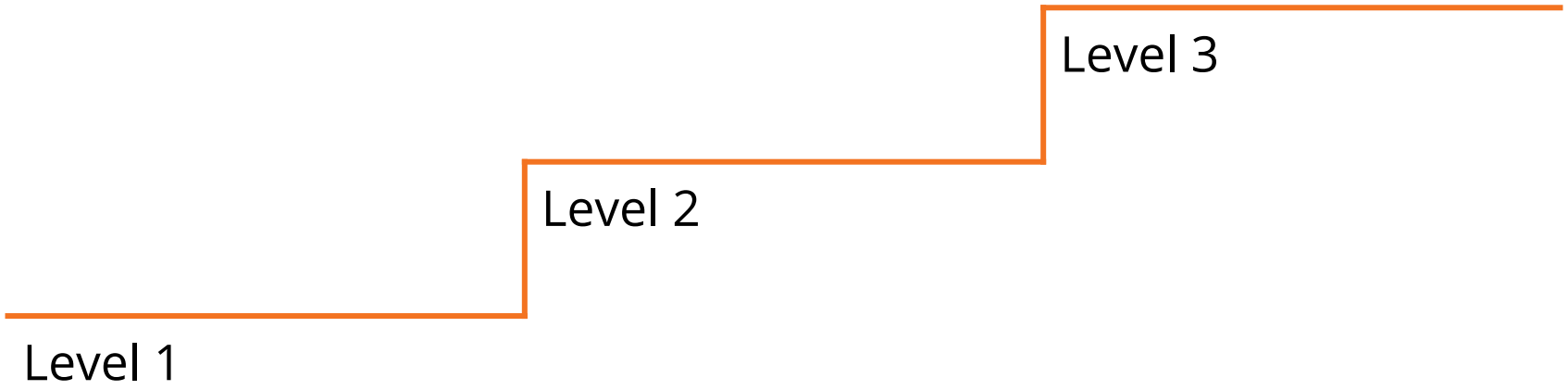
Think to yourself: How do your students show you what they know?



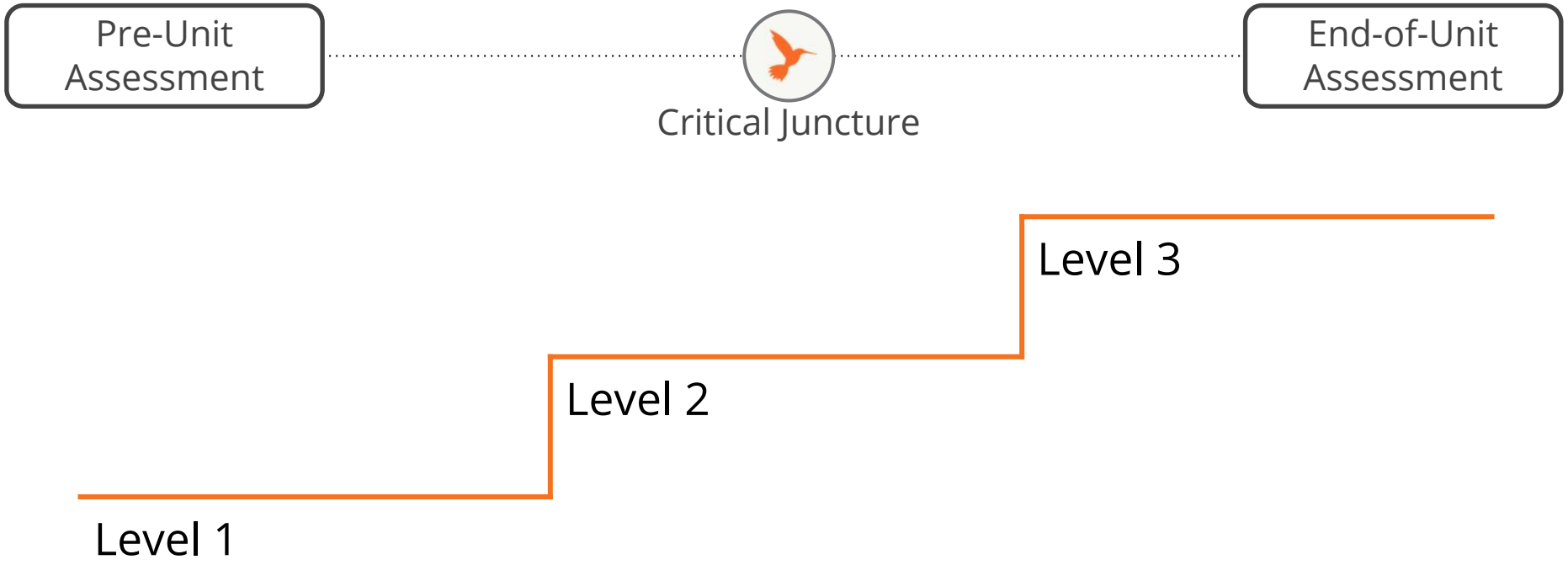
Pre- and End-of-Unit Assessments

Pre-Unit Assessment

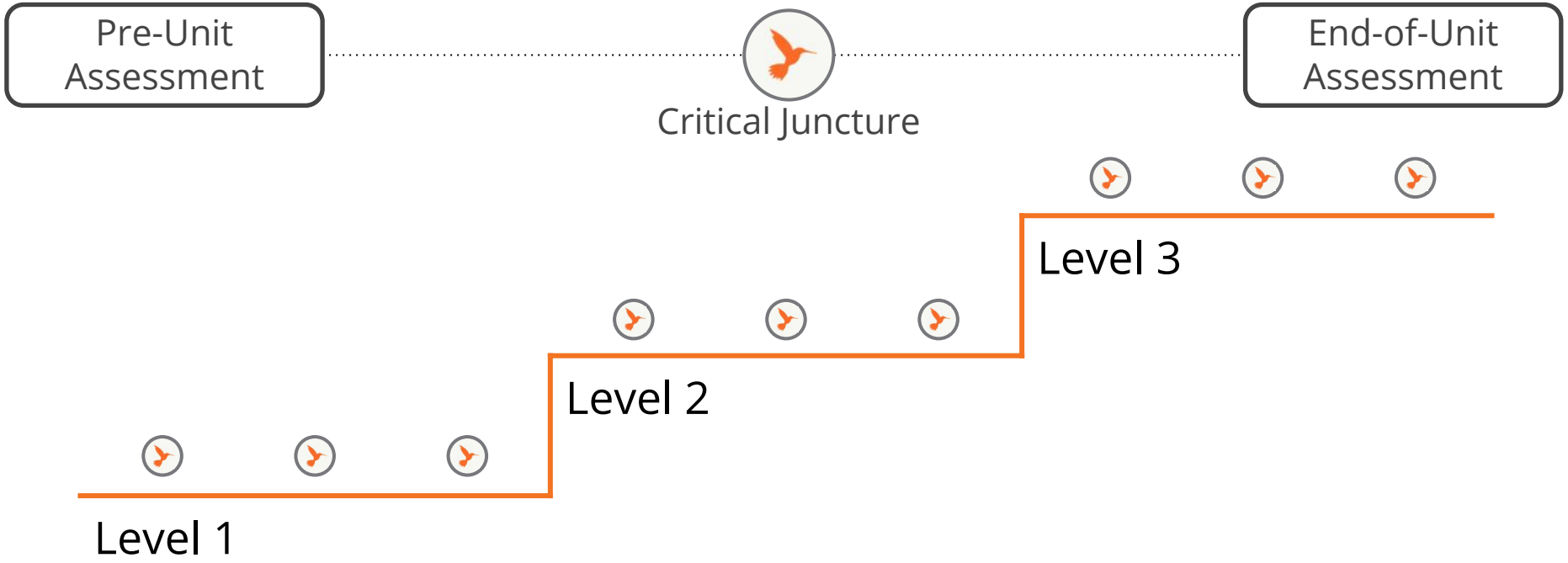
End-of-Unit Assessment



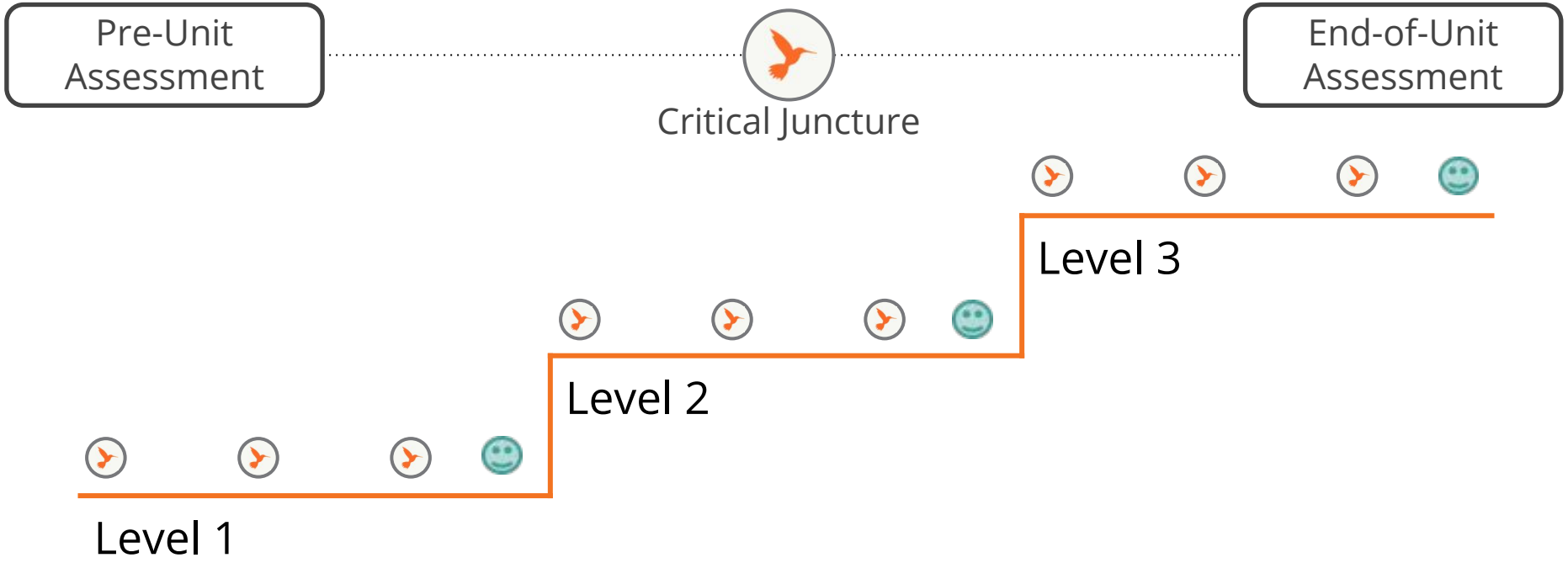
Critical Juncture Assessments



On-the- Fly Assessments

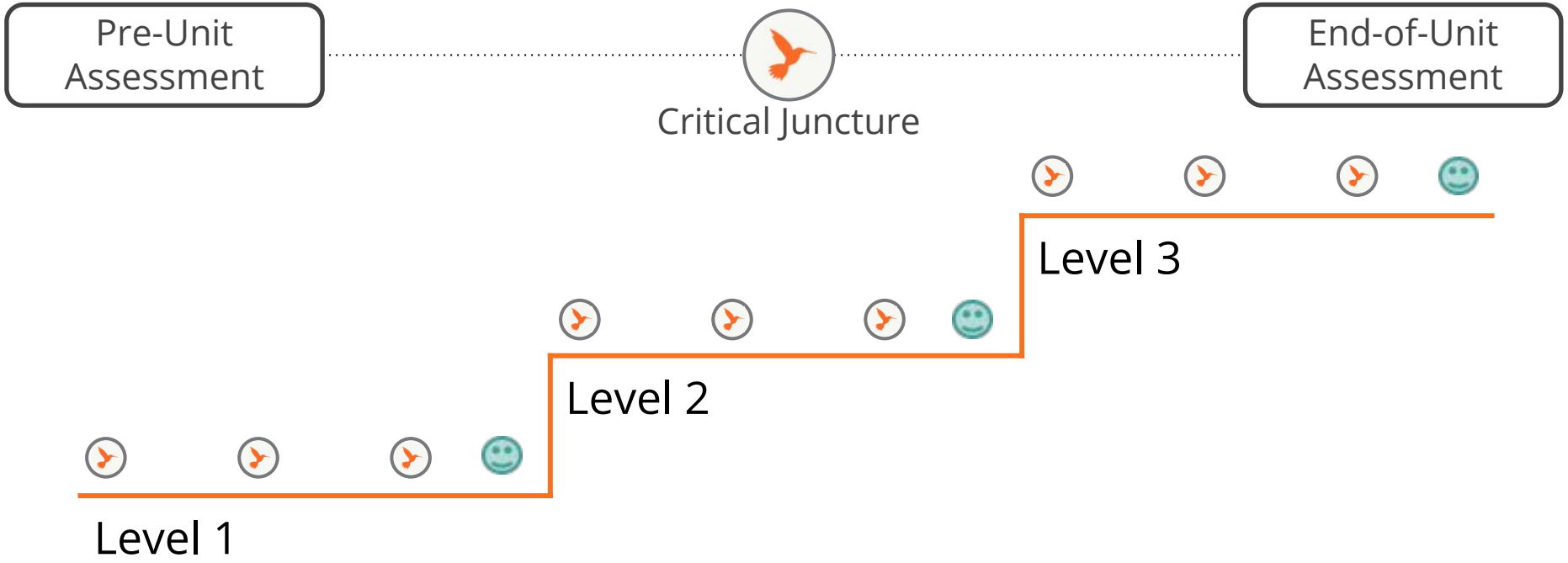


Student Self-Assessments



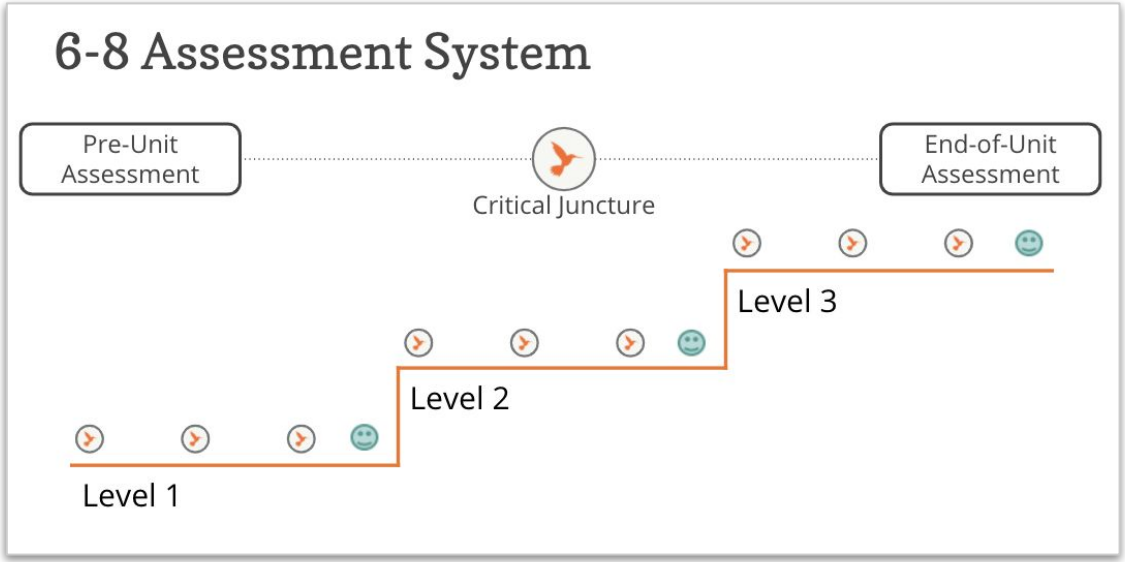
6-8 Assessment System

Pages 11-12



Capture your thinking!

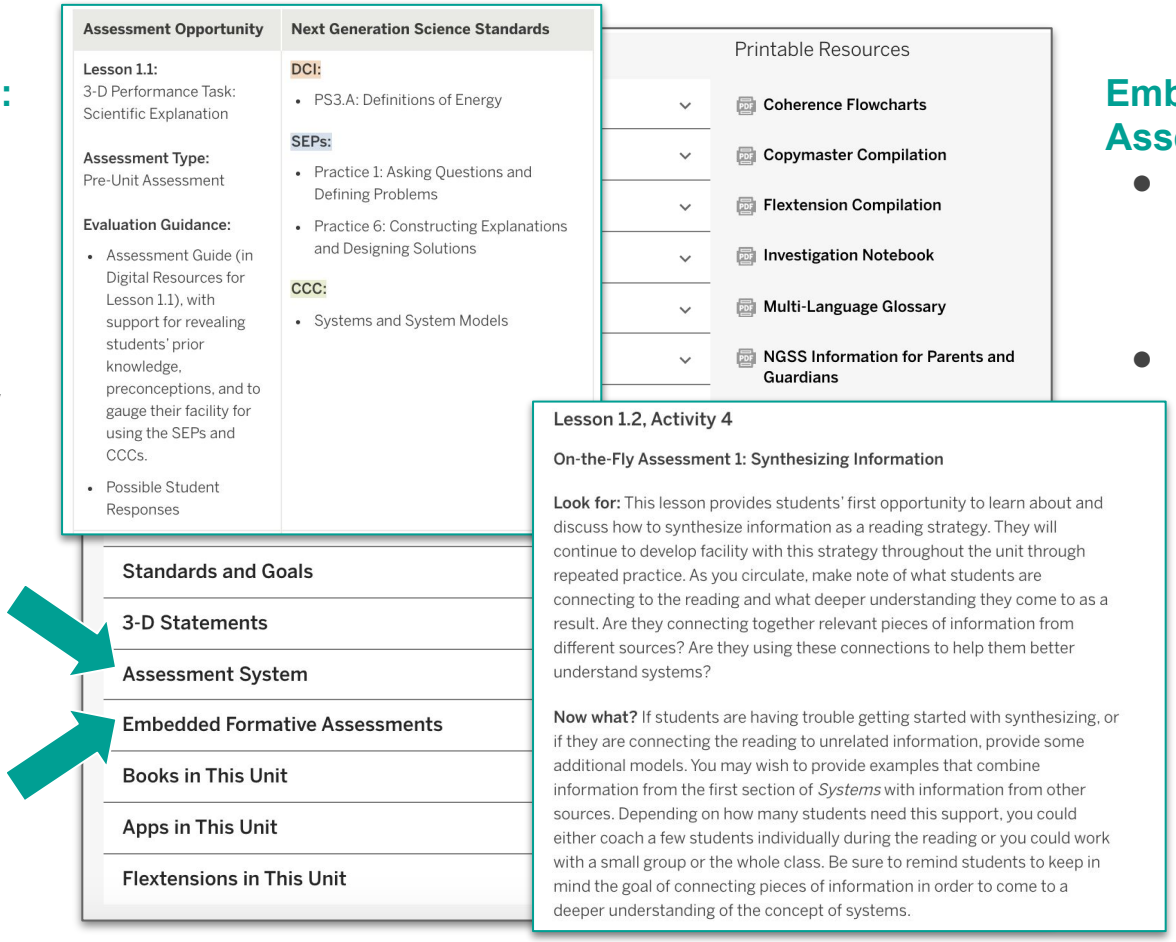
How will you use these embedded assessment opportunities?



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



Embedded Formative Assessments:

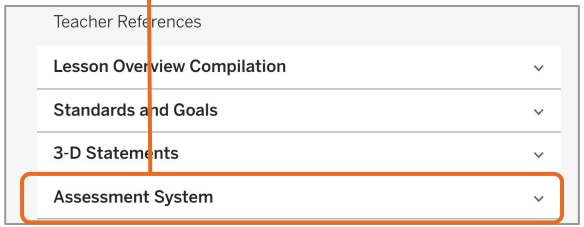
- explains what to look for at each assessment opportunity
- gives guidance for instructional next steps

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:

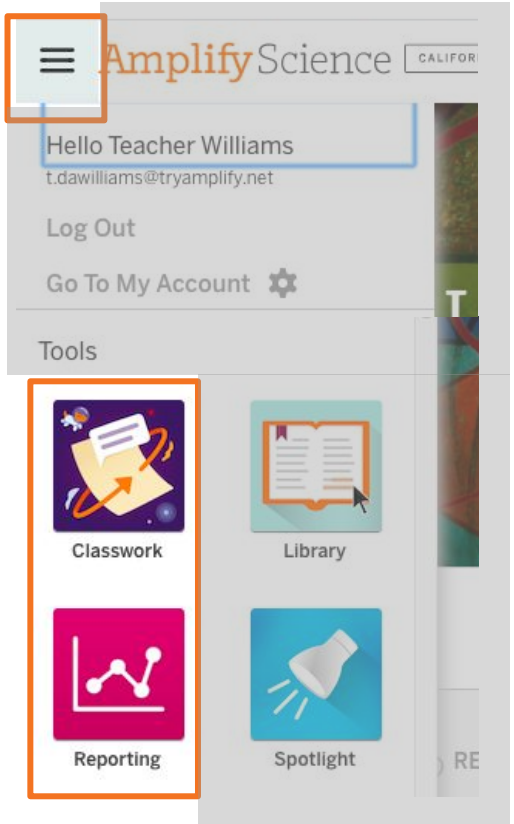
a. What are students doing?

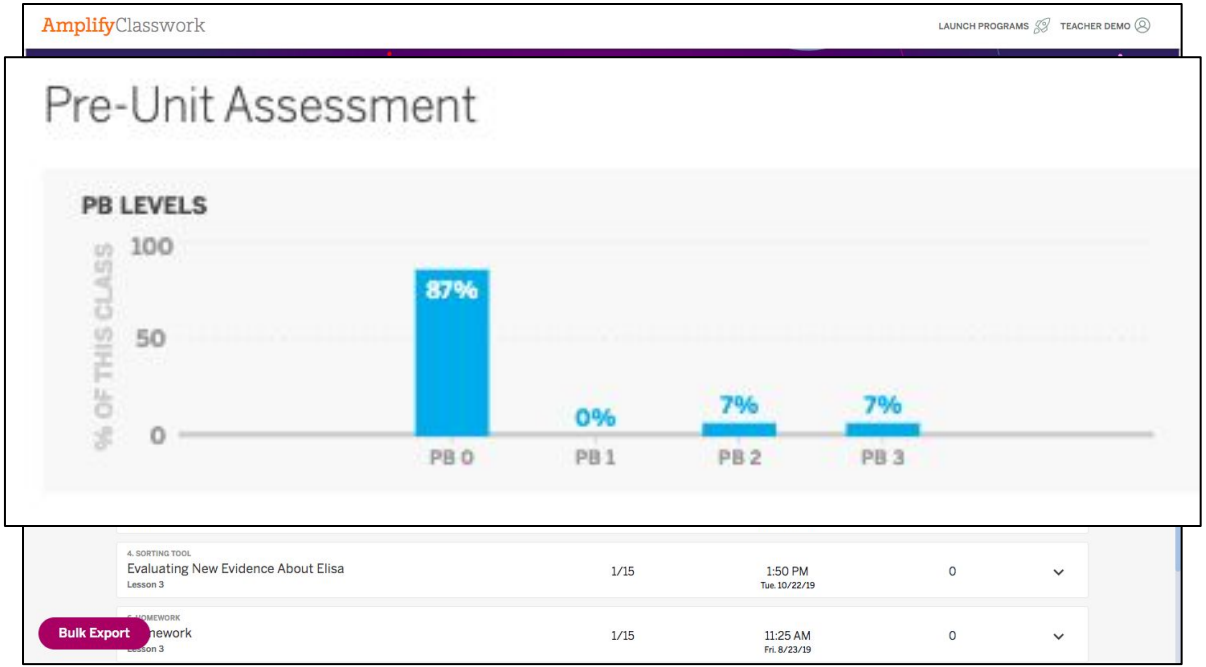
b. What would student performance tell me about student understanding?

c. How could I adjust instruction based on student performance?

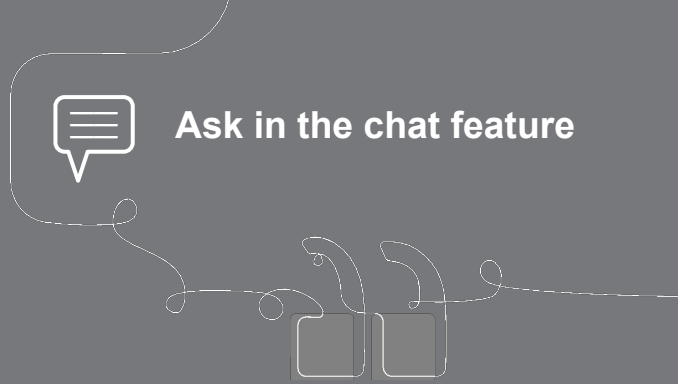
d. How could I record student data?

Classwork and Reporting

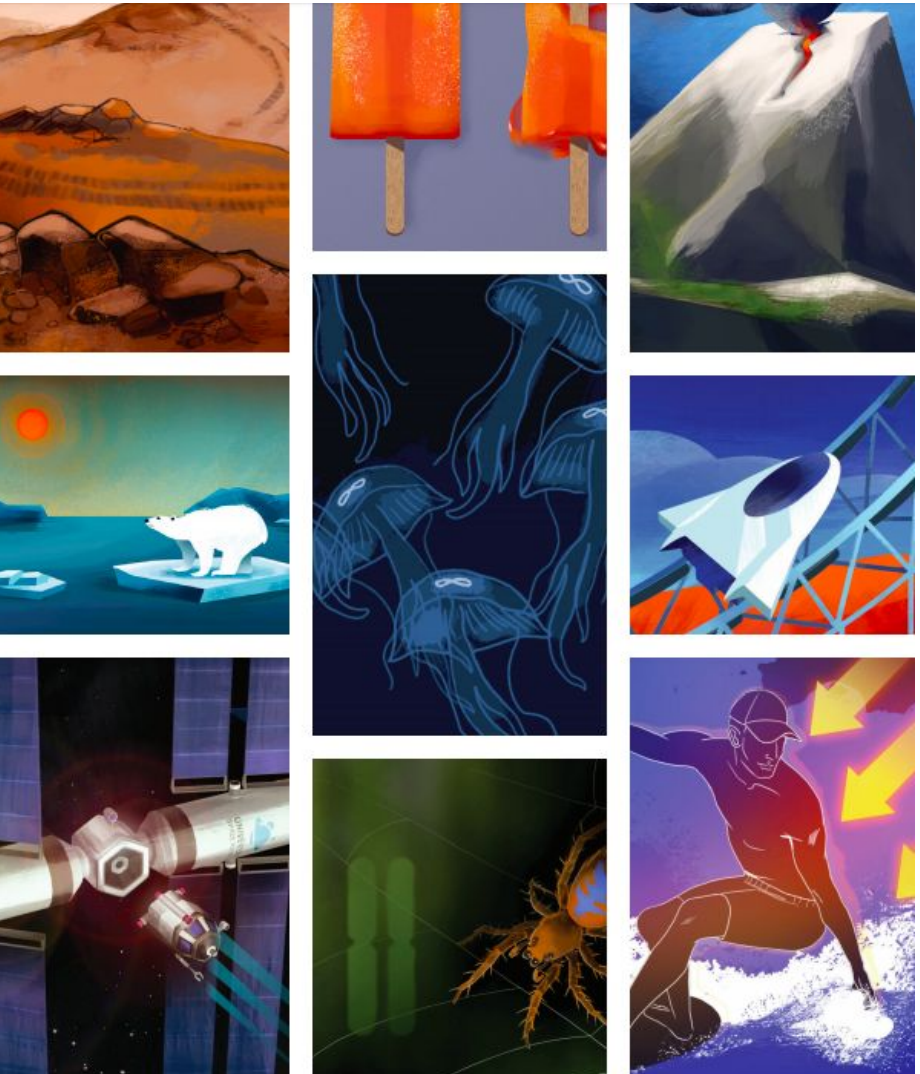




Go ‘live’ to show classwork and reporting tool



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

Navigation Temperature Check

Rate yourself on your comfort level with navigating the digital curriculum.

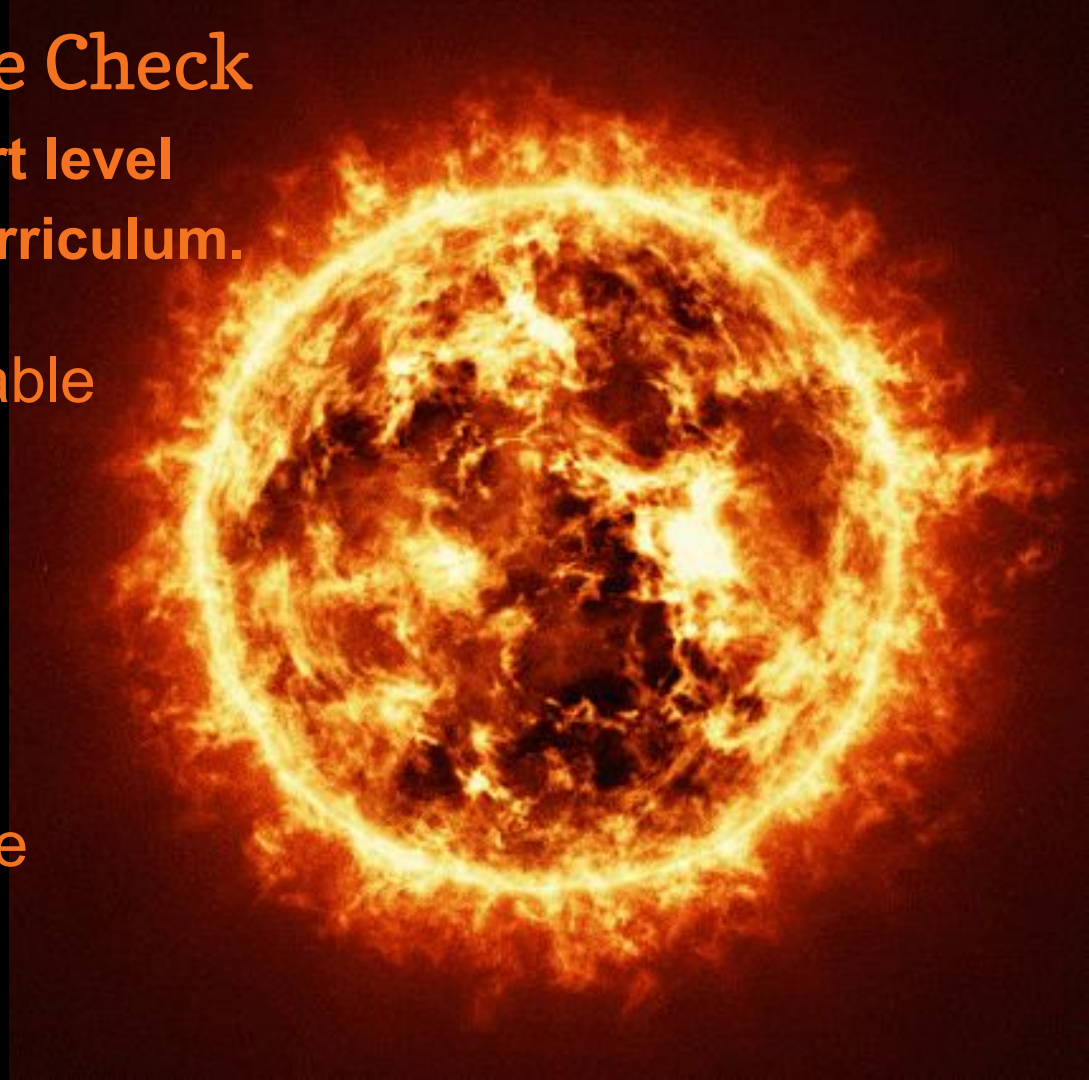
1 = Extremely Uncomfortable

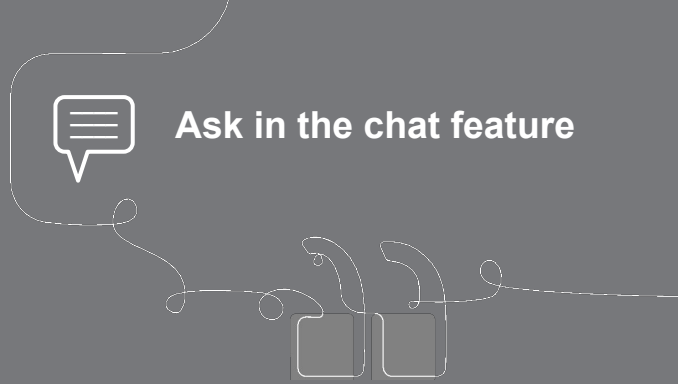
2 = Uncomfortable

3 = Mild

4 = Comfortable

5 = Extremely Comfortable





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

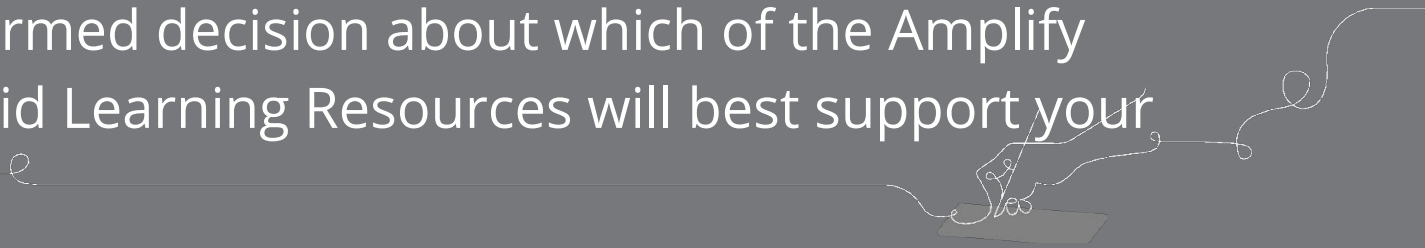
By the end of day 2 you will be able to:

- 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

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

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.

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