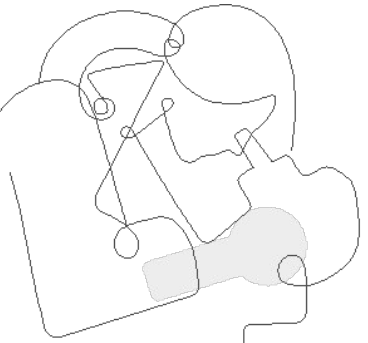
Amplify Science

Unit Internalization / Guided Planning

Grade 3, Unit 1: Balancing Forces

Part 1



School/District Name: LAUSD
Date: October, 2022
Presented by:

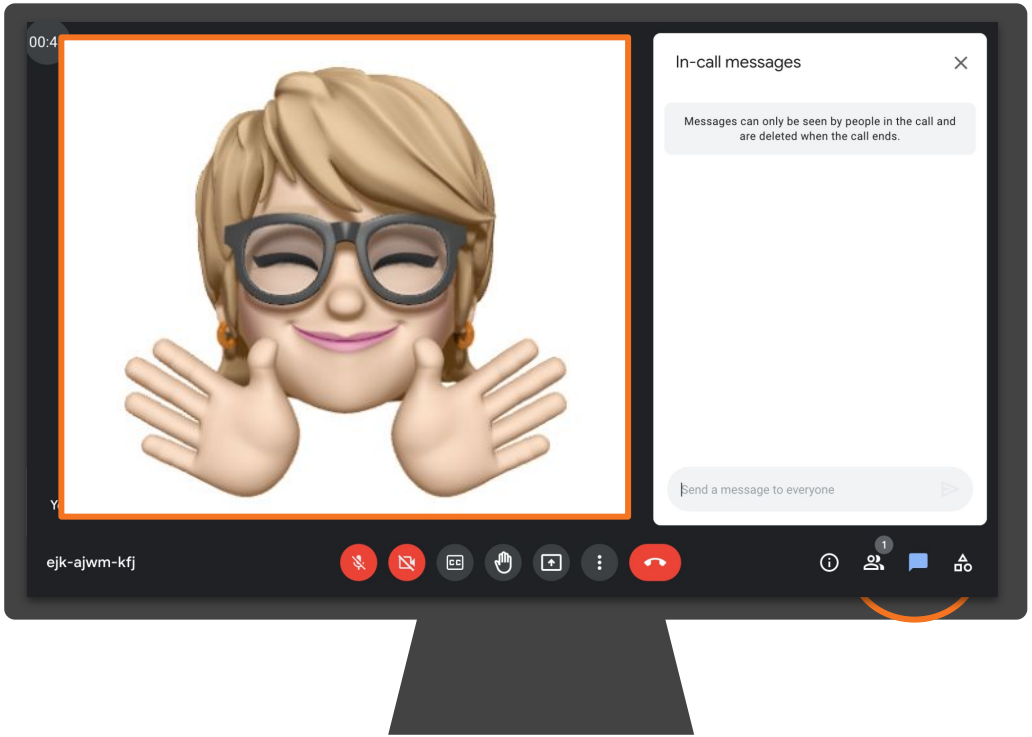
TOP RATED BY EDREPORTS

PLPG CERTIFIED PROVIDER

Ice Breaker!

Who do we have in the room today?

- **Question 1:** Which aspects of implementing the Amplify Science standard curriculum has been the most successful?
- **Question 2:** Which aspects have been the most challenging?



Amplify's Purpose Statement

Dear teachers,

You do a job that is nearly impossible and **utterly essential.**

We are in your corner – extending your reach, saving you time, and enhancing your understanding of each student.

Thank you for working with us to craft rigorous and riveting learning experiences for your classroom.

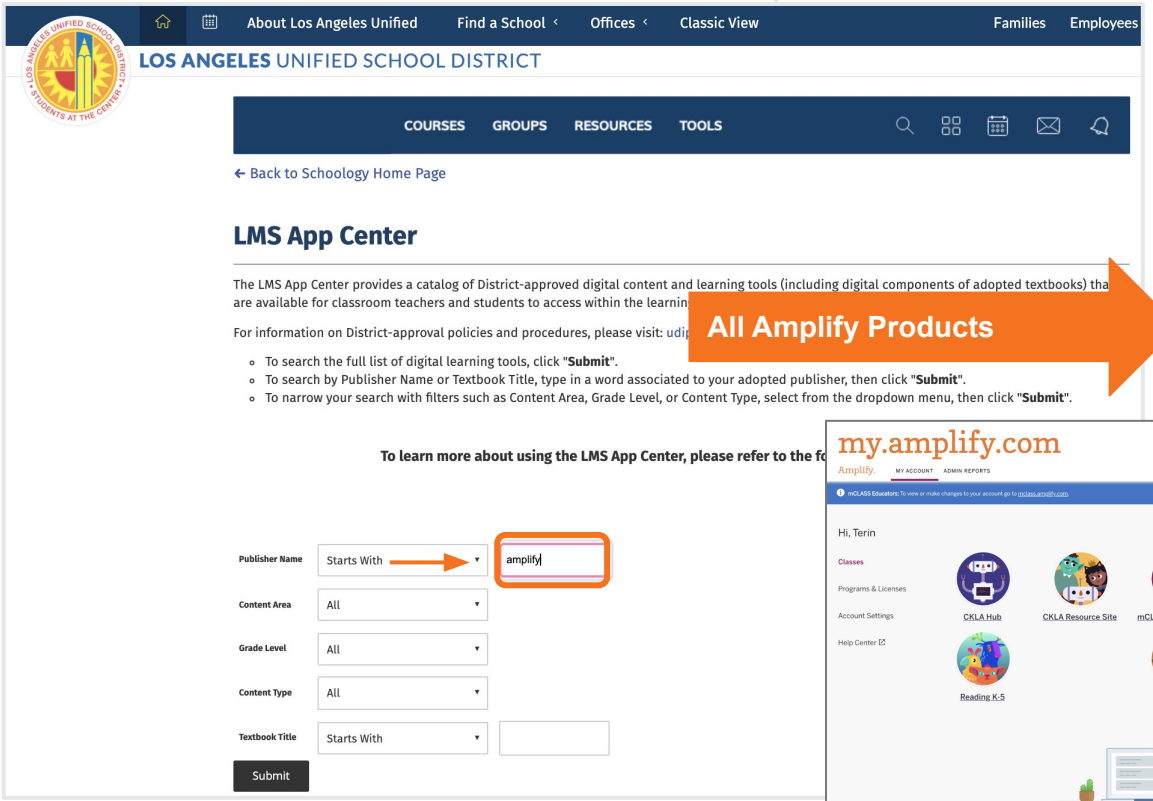
We share your goal of **inspiring all students to think deeply, creatively, and for themselves.**

Sincerely,
Amplify

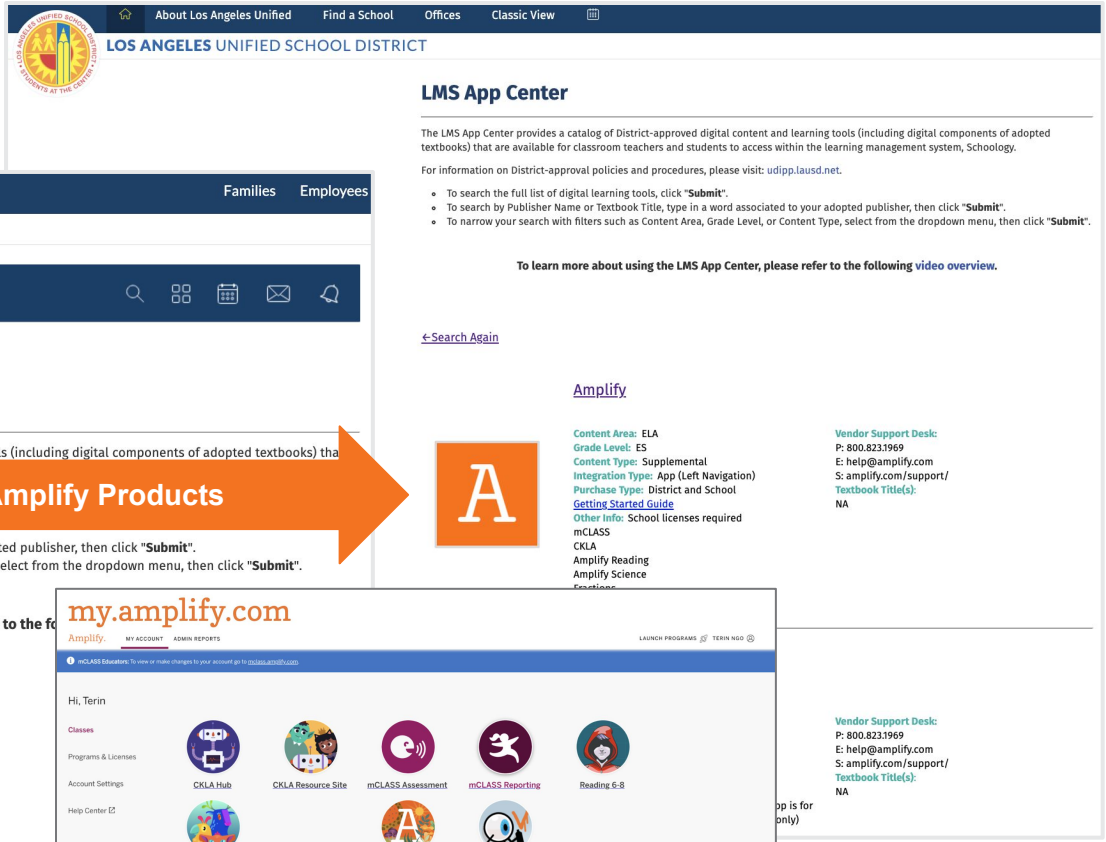
Norms: Establishing a culture of learners

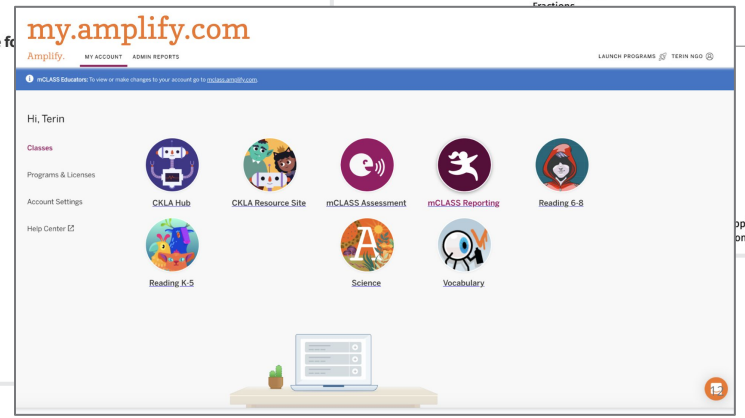
- **Take risks:** Ask any questions, provide any answers.
- **Participate:** Share your thinking, participate in discussion and reflection.
- **Be fully present:** Unplug and immerse yourself in the moment.
- **Physical needs:** Stand up, get water, take breaks.

Schoology



All Amplify Products





Join Amplify Science Schoology Group

To join Amplify Science Schoology ES Group: W4PK-W466-63F5B

Navigation Temperature Check

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

1 = Extremely Uncomfortable

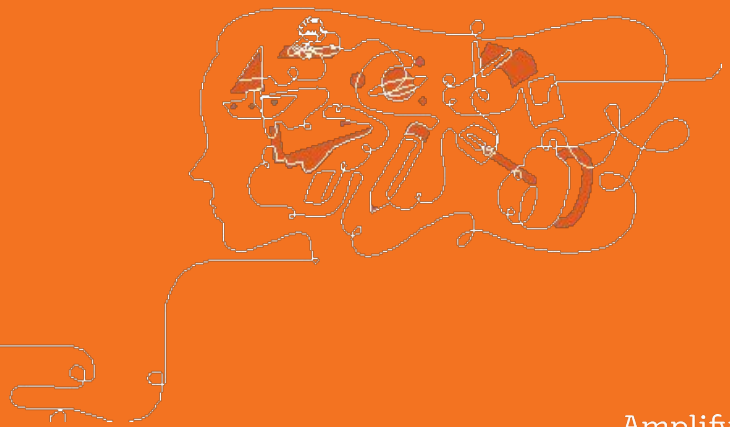
2 = Uncomfortable

3 = Mild

4 = Comfortable

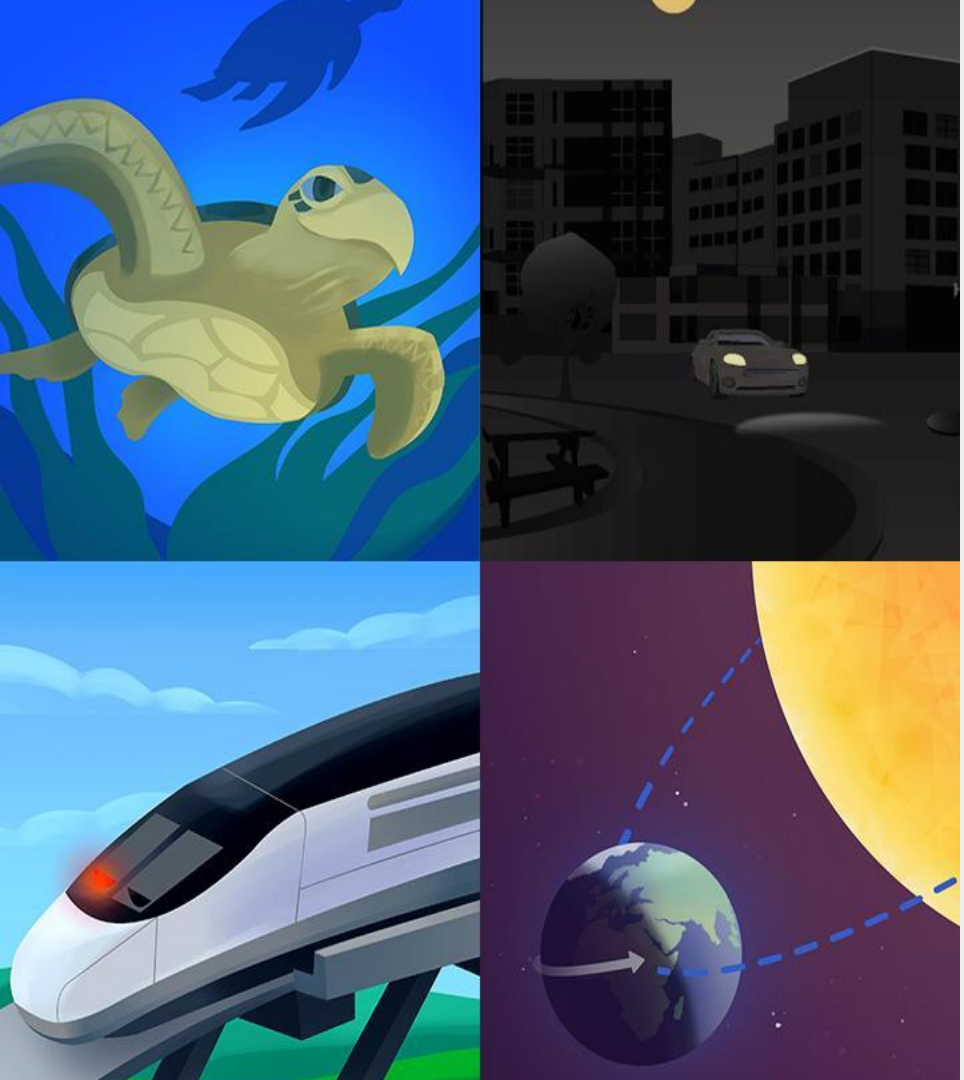
5 = Extremely Comfortable

Part 1



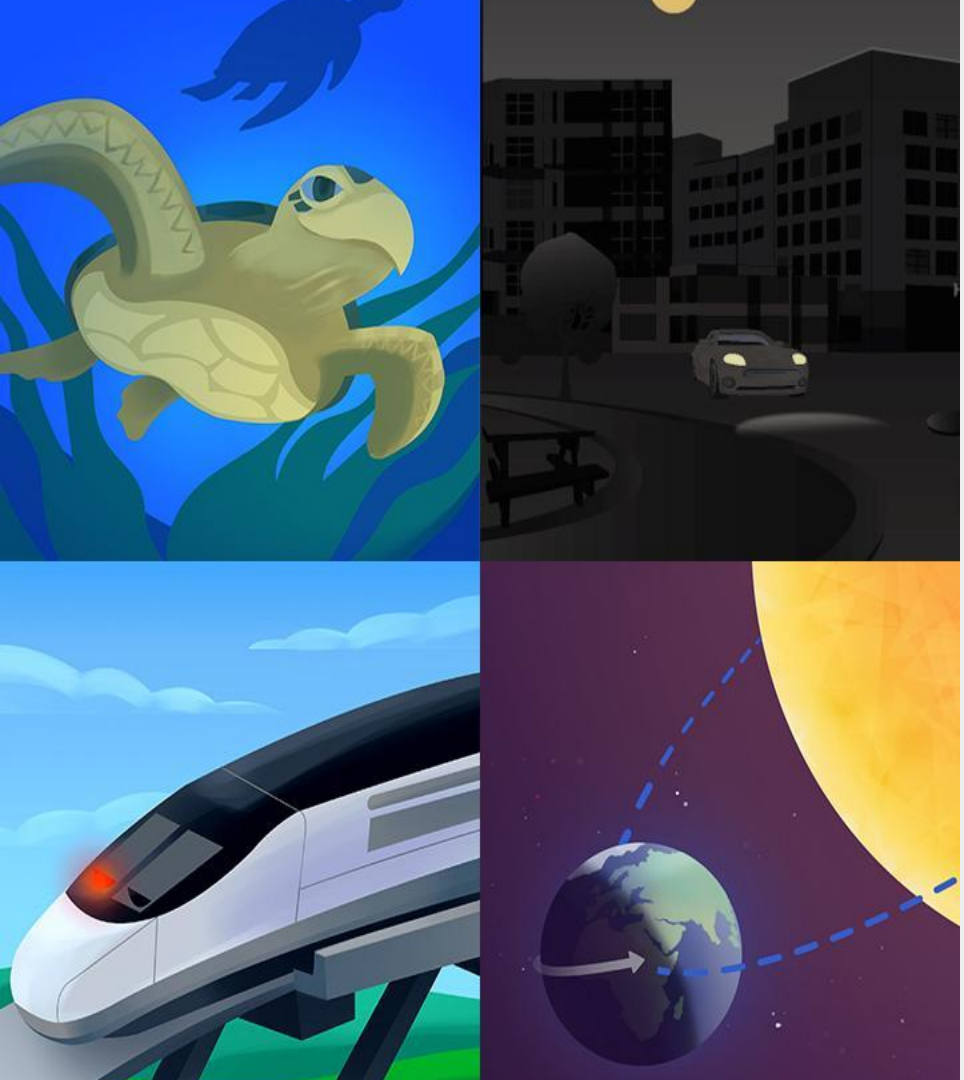
Overarching goals

- ❏ Explain how students engage in phenomenon based and 3D learning to construct an understanding of the science concepts introduced in the unit
- ❏ Internalize the unit and apply your new understanding to plan for the diverse needs of your classroom and students



Plan for the day: Part 1

- Introduction and Framing
- Phenomenon-based Instruction
- Unit Internalization
- Additional Resources
- Closing



Plan for the day: Part 1

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- Phenomenon-based Instruction
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- Additional Resources
- Closing

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

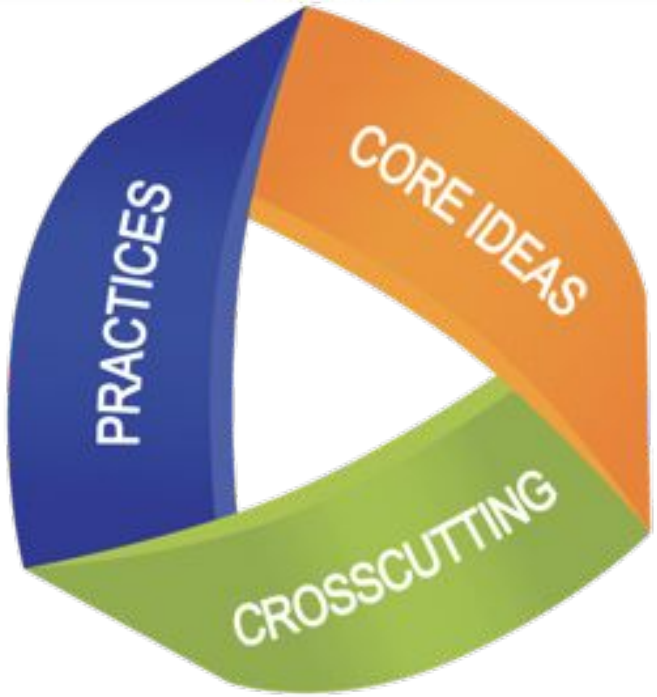
+ Amplify.

Amplify Science

Three dimensional learning

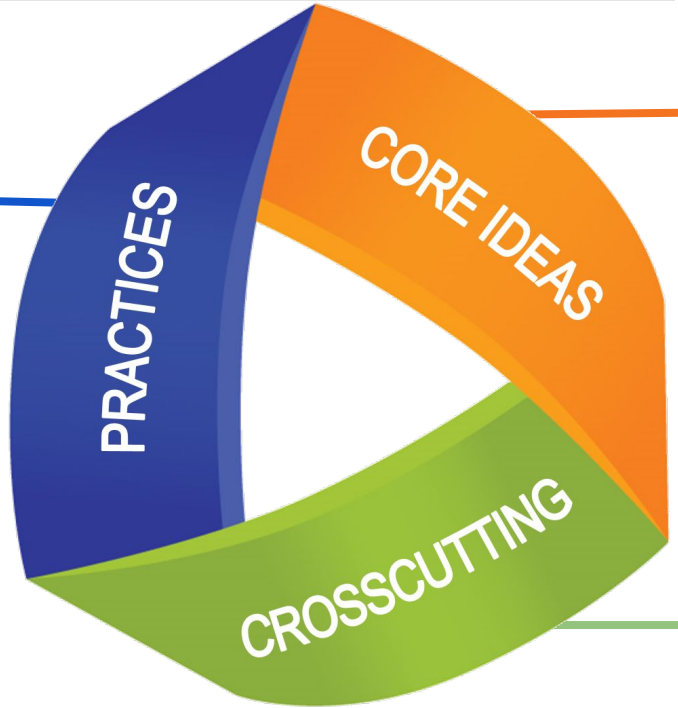
Evaluate your knowledge

- On a scale of 0-5, how would you rate your familiarity with 3-D learning?



Figuring out Phenomena

Using 3-D teaching and learning



What scientists do
Science and Engineering Practices

What scientists want to know
Disciplinary Core Ideas

How scientists think
Crosscutting Concepts

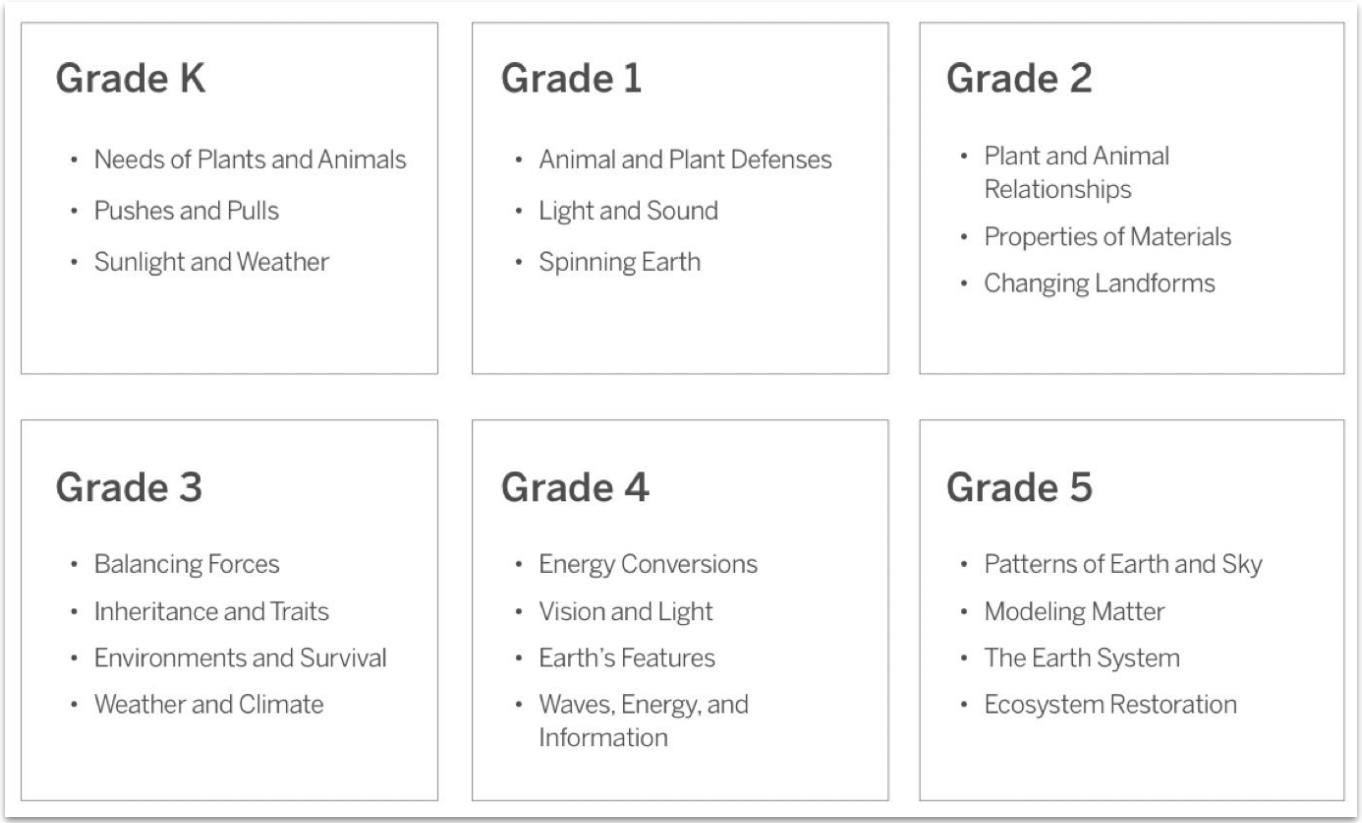
Three-dimensional learning

Reflection

In the video, how did students engage in three-dimensional learning to think like scientists?

Lesson 3.2
Students use a model to figure out the relationship between different parts of a habitat system in order to construct their understanding about how animals can help move seeds around a habitat (systems and system models).

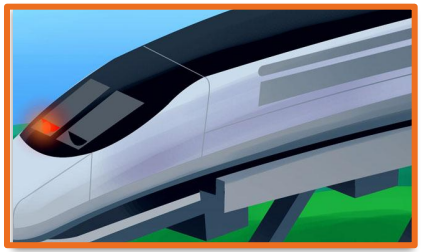
Course curriculum structure



Key takeaways:

- There are 22 lessons per unit
- Lessons at grades K-1 are 45 minutes long

Year at a Glance: Grade 3



Balancing Forces

Domain: Physical Science

Unit type: Modeling

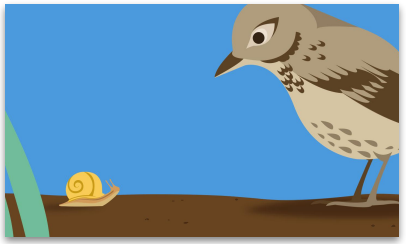
Student role: Engineers

Inheritance and Traits

Domain: Life Science

Unit type: Investigation

Student role: Wildlife biologists

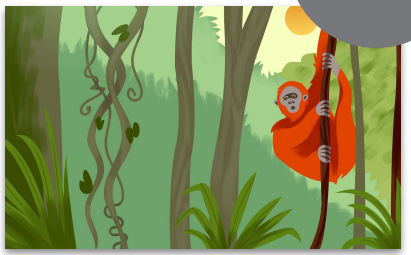


Environments and Survival

Domain: Life Science

Unit type: Engineering Design

Student role: Biomimicry engineers



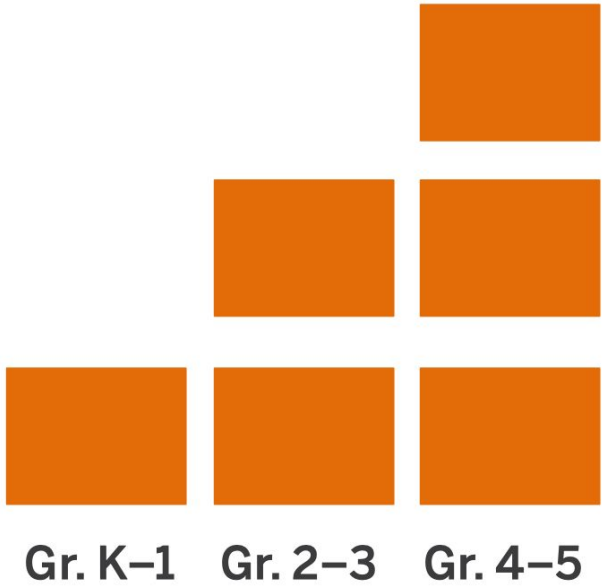
Weather and Climate

Domain: Earth and Space Science

Unit type: Argumentation

Student role: Meteorologists

What are the digital components of Amplify Science Elementary?



Student Simulations

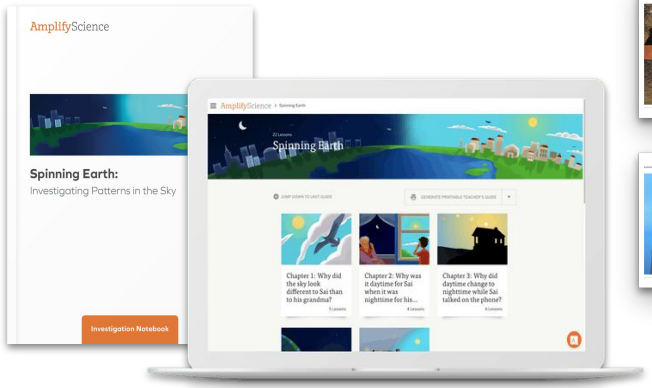
Student Science Practice Tools
(sorting tool, diagramming tool, modeling tool, data tool)

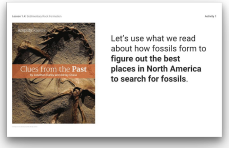
Teacher's Guide
(Online digital books for students)

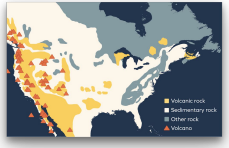
K-5 Program components

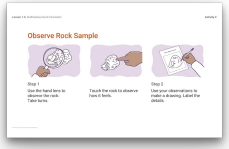
Teacher materials

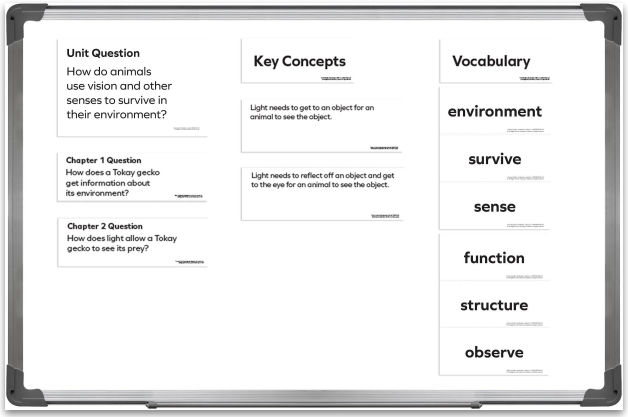
- Teacher's Guide (print and digital)
- Classroom Slides
- Classroom wall materials
- Embedded assessments
- Program Guide
- Program Hub
- Amplify Help Site







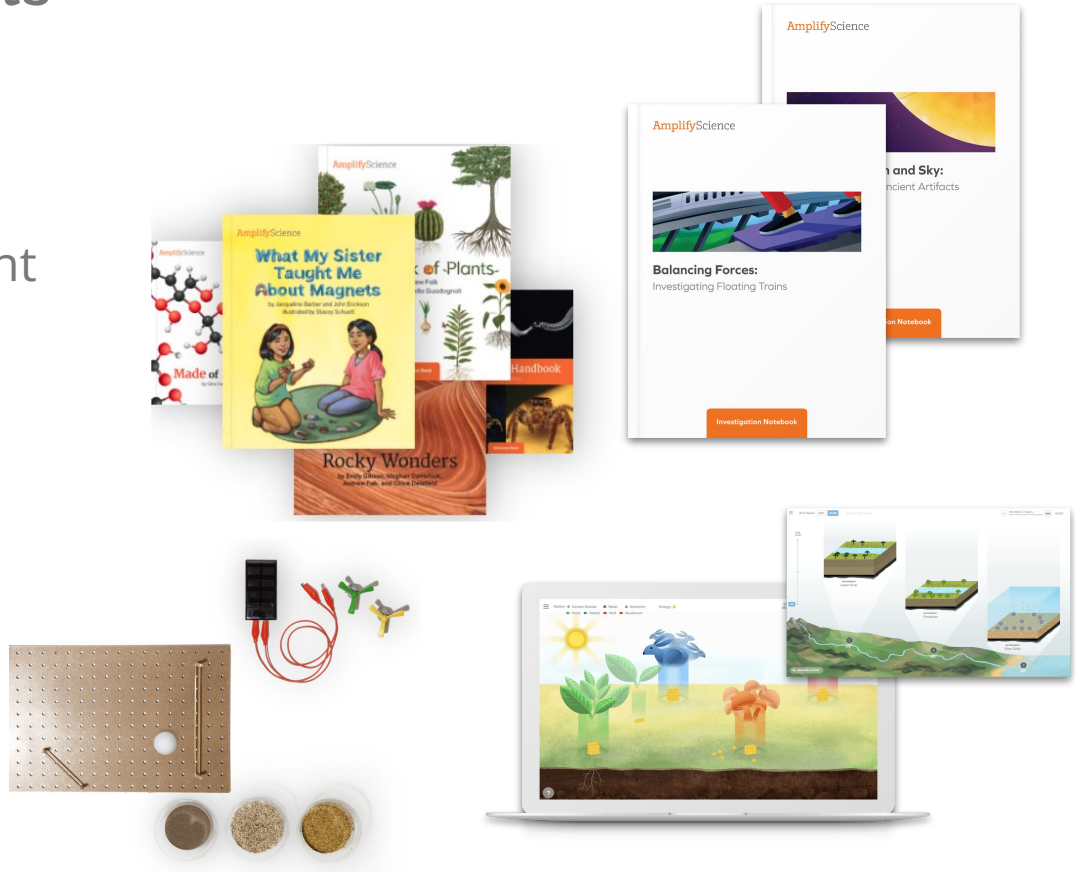




K-5 Program components

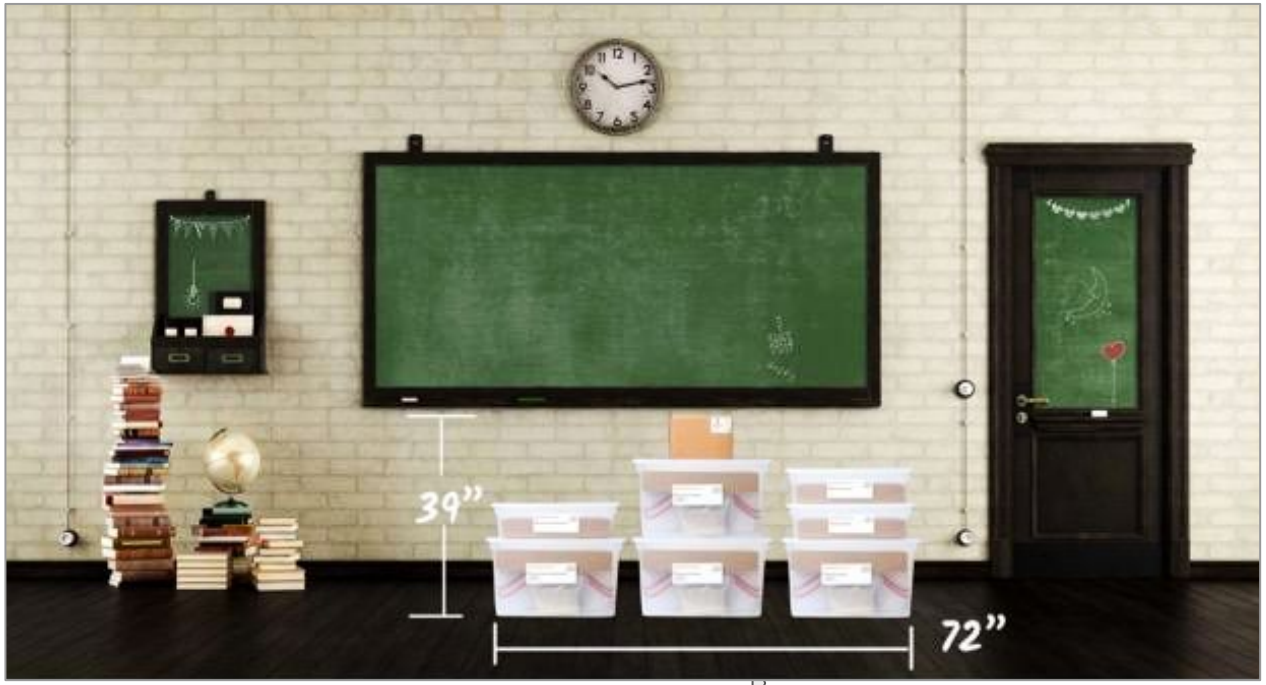
Student materials

- Hands-on materials
- Investigation Notebooks (print and digital)
- Student books
- Digital Applications



Prepping Hands-On Materials for the Unit

Microsite: Unit 1, K-2 Lesson Prep Videos



Classroom Kits

Built for a class of 36 students, with consumables for two years

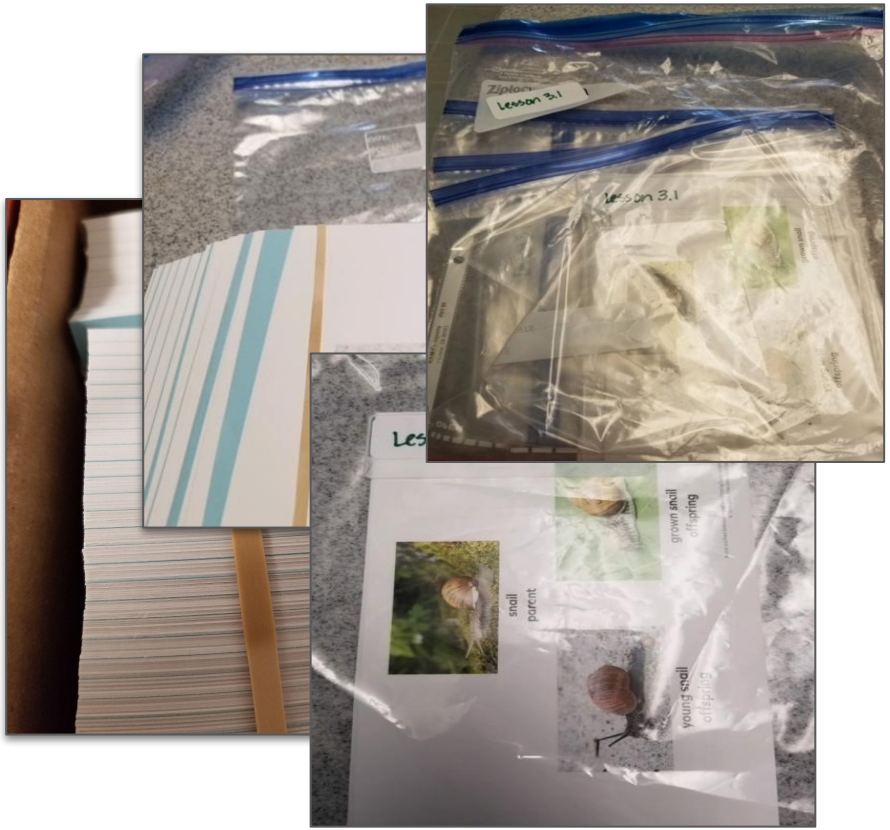
Unpacking the Kit

- Pull out the unit question, key concepts and vocabulary materials.
- Place them on the top of the table or bookcase below your science board
- Take books out of kit and place in the bookcase or on the table. (Always collect books after each lesson use. Return to bookcase so they are easily accessible.)

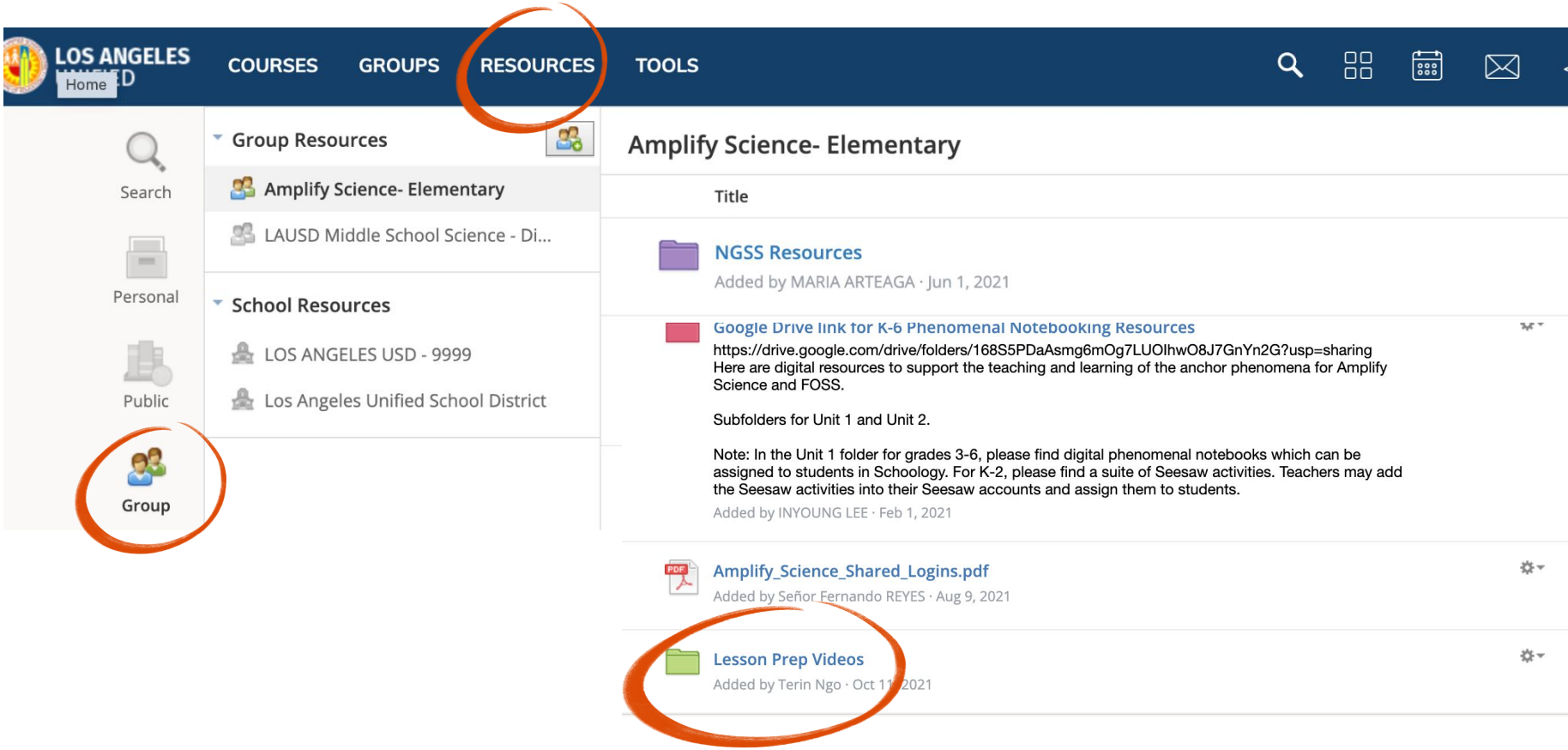
Cards for games, sorting or matching activities

Organization tips:

- Separate and place in envelopes or bags (or clip together)
- Label the envelopes or bags with the name and lesson # and activity # (ex. Lesson 2.4, Act. 1)
- Put each envelope or bag (1 set) into a bigger bag and label



LAUSD Schoology: Unit 1, 3-5 Lesson Prep Videos



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

Welcome to Amplify Science!

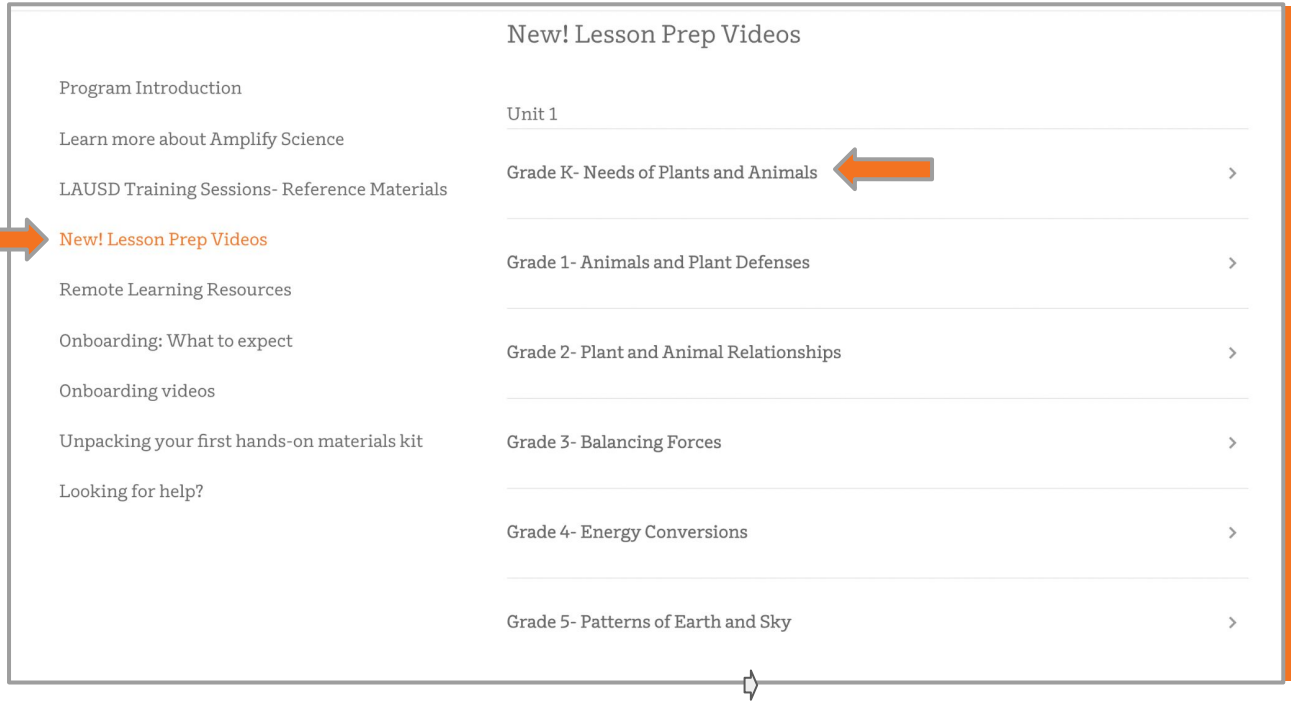
This site contains supporting resources designed for the LAUSD Amplify Science adoption for grades TK–8.

- Access the Amplify Science Program Hub (To help orient you to the new design, watch this video and view this reference guide.)
- Find out more about Amplify Science@Home
- Share the Caregiver Hub (Eng/Span) with your families
- For LAUSD ES Teachers- Amplify Science & Benchmark Advance Crosswalk
- Instructional guidance for a Responsive Relaunch of Amplify Science in 21-22

Click the button below to preview the digital Teacher's Guide, and check back for exciting updates to this site!

Microsite: Unit 1, K-2 Lesson Prep Videos

Classroom kits



Classroom Kits

Built for a class of 36 students, with consumables for two years

Hands On Material Organization

Directions
1. Open the Digital Lesson Guides Only page 7 from the Unit Landing page or go the Print TE to page 31. (Chapter 1 Activities)
2. Look for the lessons with Hands On.
HANDS-ON
3. Note in the table below.
4. Review the materials and preparation to determine if it can be prepared prior to the lesson or on the day of the lesson.
5. Use this same procedure for each Chapter. (Go to the Chapter Activities Contents)

Chapter/Lesson	Activity	Prep Prior	Prep Day of	What to do	
1.1	1	X		Prep plastic bags with labels A, B, C, D and M. Place 1 tsp of the following cinnamon, salt, flour, cornstarch in A,B,C, D. In bag M mix 1 tsp salt and 1 tsp cinnamon.	*This is an example from Properties of Materials Grade 2*

Hands On Material Organization

Completed for Balancing Forces

Directions					
1. Open the Digital Lesson Guides Only page 7 from the Unit Landing page or go the Print TE to page 31. (Chapter 1 Activities)					
2. Look for the lessons with Hands On.					
HANDS-ON					
3. Note in the table below.					
4. Review the materials and preparation to determine if it can be prepared prior to the lesson or on the day of the lesson.					
5. Use this same procedure for each Chapter. (Go to the Chapter Activities Contents)					

Chapter/Lesson	Activity	Prep Prior	Prep Day of	What to do	
1.2	2	X		First, you will need to screw one hook into the short end of each block. You will also need to provide rubber bands. Assemble one gallon-size self-sealing plastic bag of investigation materials for each pair of students, plus one bag for demonstration purposes. Each bag should contain the following items: • 2 blocks, with hooks • 1 balloon • 1 rubber band • 1 paper clip • 1 domino • 1 clothespin • 1 index card	
1.4	2	X		Make sure you have a bag of materials from Lesson 1.2 for each pair. Add a rubber ball to each bag.	
2.1	1	X		For each group of four students prepare a bag with the following materials: You will pass each group two ring magnets as well. • 1 small paper clip • 1 steel spoon • 1 plastic spoon* • 1 washer • 1 piece of wood (craft stick) • 1 balloon • 1 penny* Create Magnet Anticipatory Chart https://learning.amplify.com/m/4c4cd409cedeac1c/original/ELSCI_3-PS_CU_126.pdf	
2.2	1	X		Add to bag from lesson 2.1 • 1 brass-plated paper fastener (brad) • 1 solid-brass paper fastener (brad) • 1 twist tie with iron core • 1 piece of steel wool • 1 scrap of aluminum foil	
2.3	1	X		For each pair of students: • 1 copy of Handbook of Forces • 2 ring magnets • 1 small paper clip • 2 sticky notes*	
3.1	2	X		Assemble sets of investigation materials. Each pair of students will need one set of the following investigation materials. • 1 paper clip • 1 domino • 1 heavy book	
3.3	1	X		For each pair of students: • 1 domino • 1 rubber ball • 1 ring magnet • 1 ball magnet • 1 ramp (cardboard half-pipe) • 1 folded index card • 1 paper clip • 1 piece of wood (craft stick) • 1 steel spoon • 1 washer • 2 wooden blocks with hooks • 1 cardboard half-pipe • 1 rubber band*	
4.1	2	X		Each pair of students will receive one set of investigation materials: • 2 ring magnets • 1 pencil • 1 piece of string (8 inches long) • 4 pieces of masking tape (1 inch each)	
4.2	1	X		For Each Pair of Students: • 2 ring magnets • 1 large pieces of cardboard (7"x 3.5") • 1 small pieces of cardboard (3.5" x 2") • 1 plastic cup • 1 paper clip with a piece of string (about 8" long) tied to it • several pieces of masking tape • 4 sticky notes • 1 copy of Handbook of Forces	

- Open Your **Lesson Guides Only**
- Start with **Chapter 1** and look for the **hands icon**
- Go into the lesson **materials and prep**

JUMP DOWN TO UNIT GUIDE

GENERATE PRINTABLE TEACHER'S GUIDE

Full Teacher's Guide
(Includes Unit Guide & all 22 Lesson Guides)

Lesson Guides Only

OPEN IN NEW TAB

RESET LESSON

Overview
Materials & Preparation
Differentiation
Standards
Vocabulary
Unplugged?

Overview

Through reading an informational text, students continue to explore how organisms can be similar and different. Students read the book *Blue Whales and Buttercups*, which provides many examples of the great diversity of organisms on Earth and the many ways in which they can be similar and different. Students are introduced to the sense-making strategy of asking questions and use this strategy to help them understand and engage with the book. The purpose of this lesson is to introduce students to the concept that even though organisms can be quite different, they are all related.

6 Lessons

Inheritance and Traits
Lesson Guides

Chapter 1 Activities

Chapter 1 Activities

Lesson 1.1: Pre-Unit Assessment

1. Introducing the Unit — TEACHER-LED DISCUSSION
2. Writing Initial Explanations — WRITING
3. Introducing the Investigation Notebook — TEACHER-LED DISCUSSION
4. Previewing the Reference Book — STUDENT-TO-STUDENT DISCUSSION

Lesson 1.2: Blue Whales and Buttercups

1. Introducing Asking Questions — TEACHER-LED DISCUSSION
2. Partner Reading — READING
3. Reflecting on Relatedness — TEACHER-LED DISCUSSION

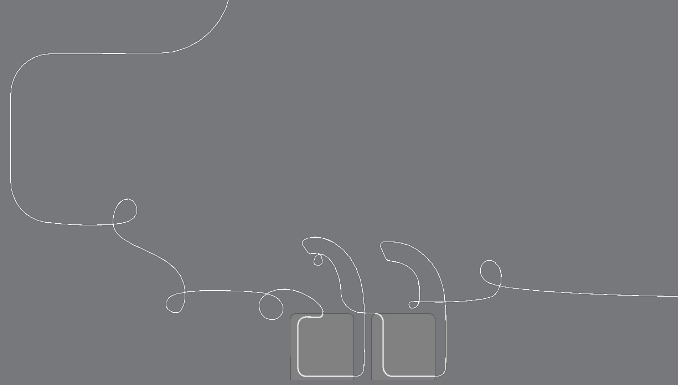
Lesson 1.3: Observing Similarities and Differences

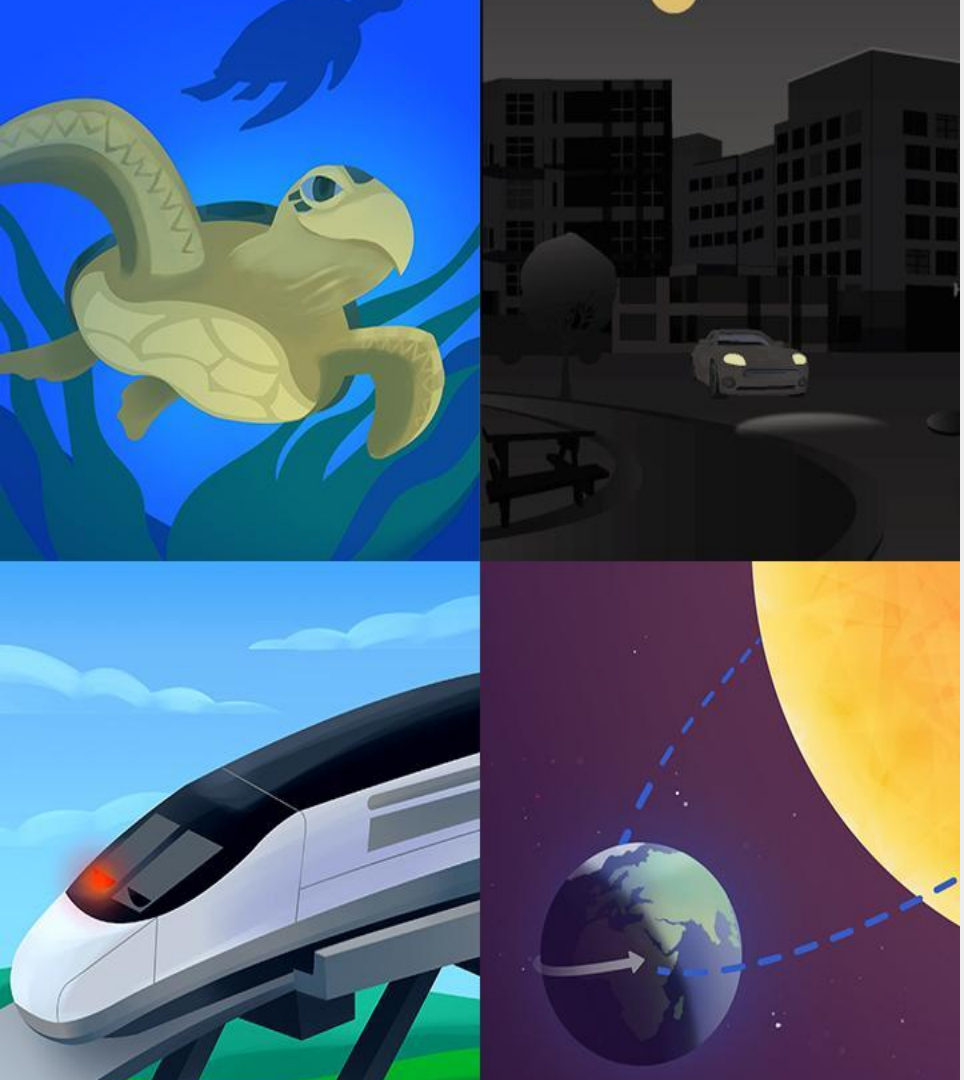
1. Observing Similarities and Differences in Animals — HANDS-ON
2. Observing Bird Traits — STUDENT-TO-STUDENT DISCUSSION
3. Thought Swap — STUDENT-TO-STUDENT DISCUSSION

Lesson 1.4: Introducing Species

T. Observing Bird Sounds — TEACHER
1. Identifying Songbirds — TEACHER-LED DISCUSSION
2. Sorting Bear Species — HANDS-ON
3. Introducing the Problem Students Will Investigate — TEACHER-LED DISCUSSION

Questions?





Plan for the day: Part 1

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Next Generation Science Standards

Phenomenon-based learning and teaching

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

Comparing topics and phenomena

Topic-based	Phenomenon-based
Chemical reactions	There's a reddish-brown substance in a town's tap water.

Next Generation Science Standards

How might learning be different?

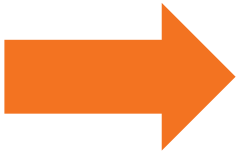
Topic-based	Phenomenon-based
Chemical reactions	There's a reddish-brown substance in a town's tap water.
Electric circuits	A flashlight won't turn on, even though it used to work.
Natural selection	A population of newts has become more poisonous over time.

Comparing topics and phenomena

A shift in science instruction

from learning about

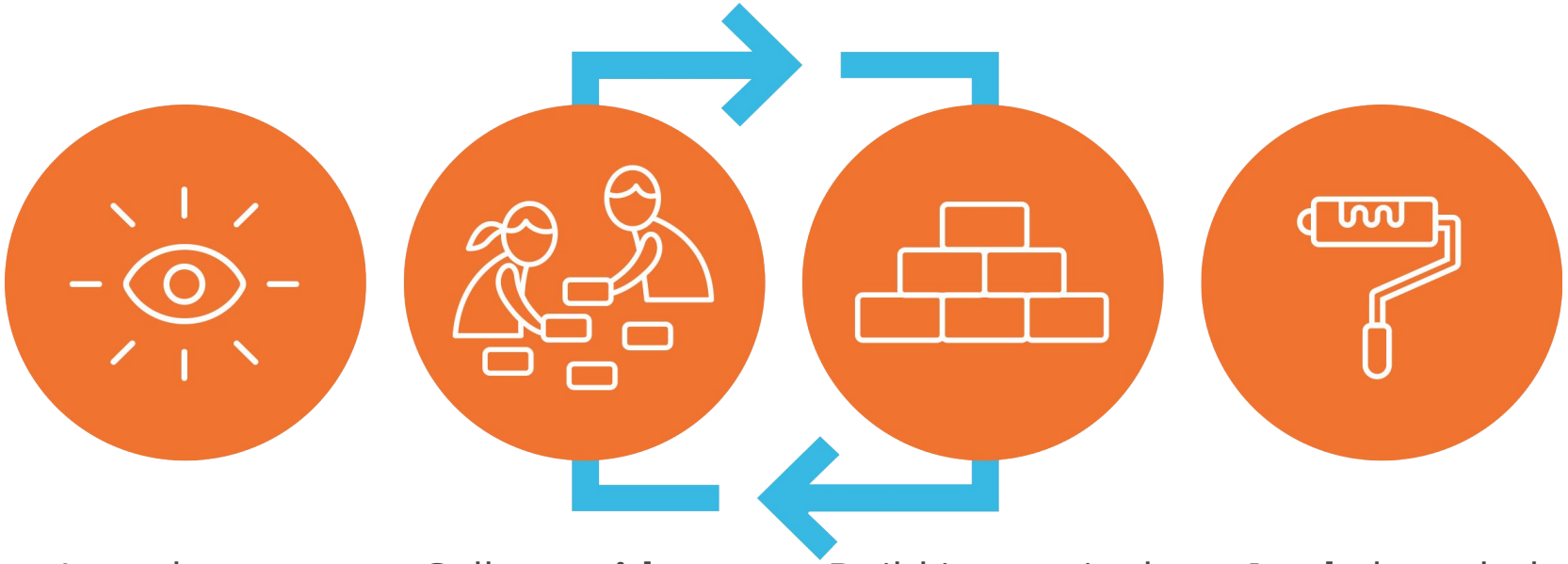
(like a student)



to figuring out

(like a scientist)

Amplify Science Approach



Introduce a **phenomenon** and a related problem

Collect **evidence** from multiple sources

Build increasingly complex **explanations**

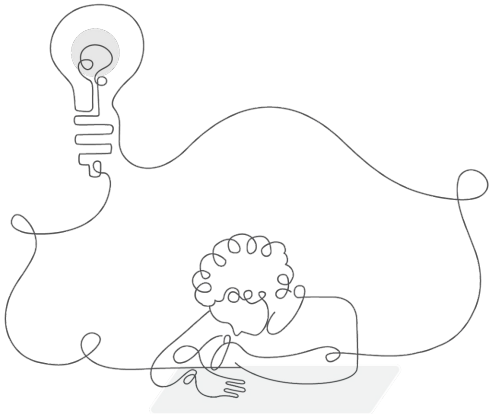
Apply knowledge to solve a different problem

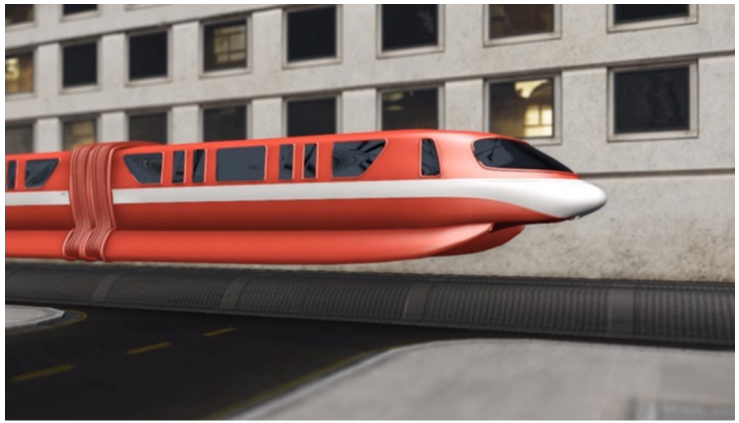
Previewing the unit

Introducing the phenomenon

Amplify Science units are designed around complex phenomena that drive student learning through the unit.

Pay attention to the phenomenon, or observable event, students will figure out in your unit.





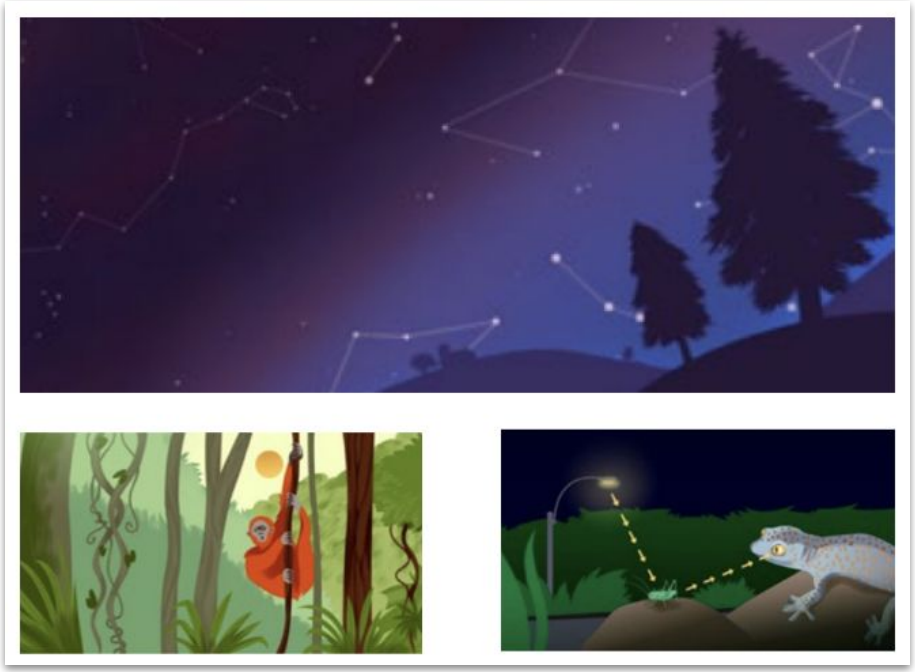
The train floated up without anything touching it. Later, it fell back down to the track.

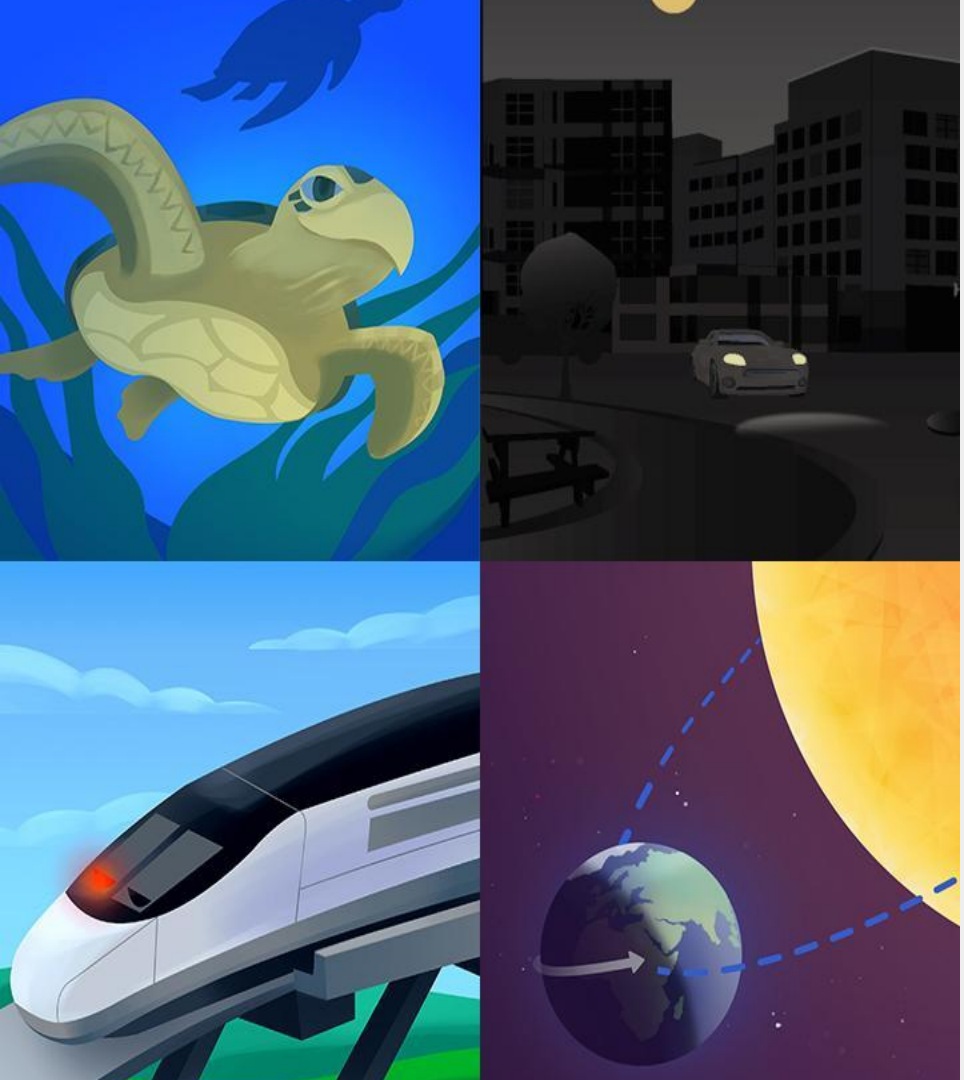
We are going to figure out how floating trains work.

Amplify Science

Anchoring phenomenon

- Complex and rich
- Drives learning through a whole unit
- Specific and observable
- Relatable at students' developmental level





Plan for the day: Part 1

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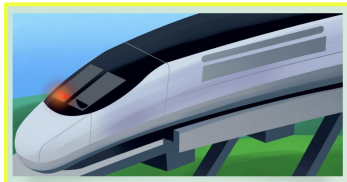
Unit

Chapters

Lessons

Activities

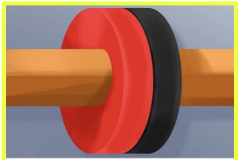


22 Lessons

Balancing Forces

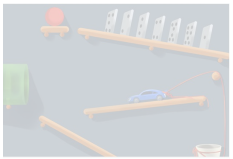
Chapter 1: Why does the train rise?

4 Lessons



Chapter 2: Why does the train rise without anything touching it?

5 Lessons



Chapter 3: Why does the train fall?

4 Lessons

Chapter 4: Why does the train float, even though gravity is acting on it?

4 Lessons

Chapter 5: Why does the train change from floating to falling?

5 Lessons

Lesson 2.1: Discovering Non-Touching Forces

Lesson 2.2: What Objects Do Magnetic Forces Act On?

Lesson 2.3: Investigating Ways Magnetic Force Moves Objects

Lesson 2.4: What My Sister Taught Me About Magnets

Lesson 2.5: Explaining Magnetic Force and the Train

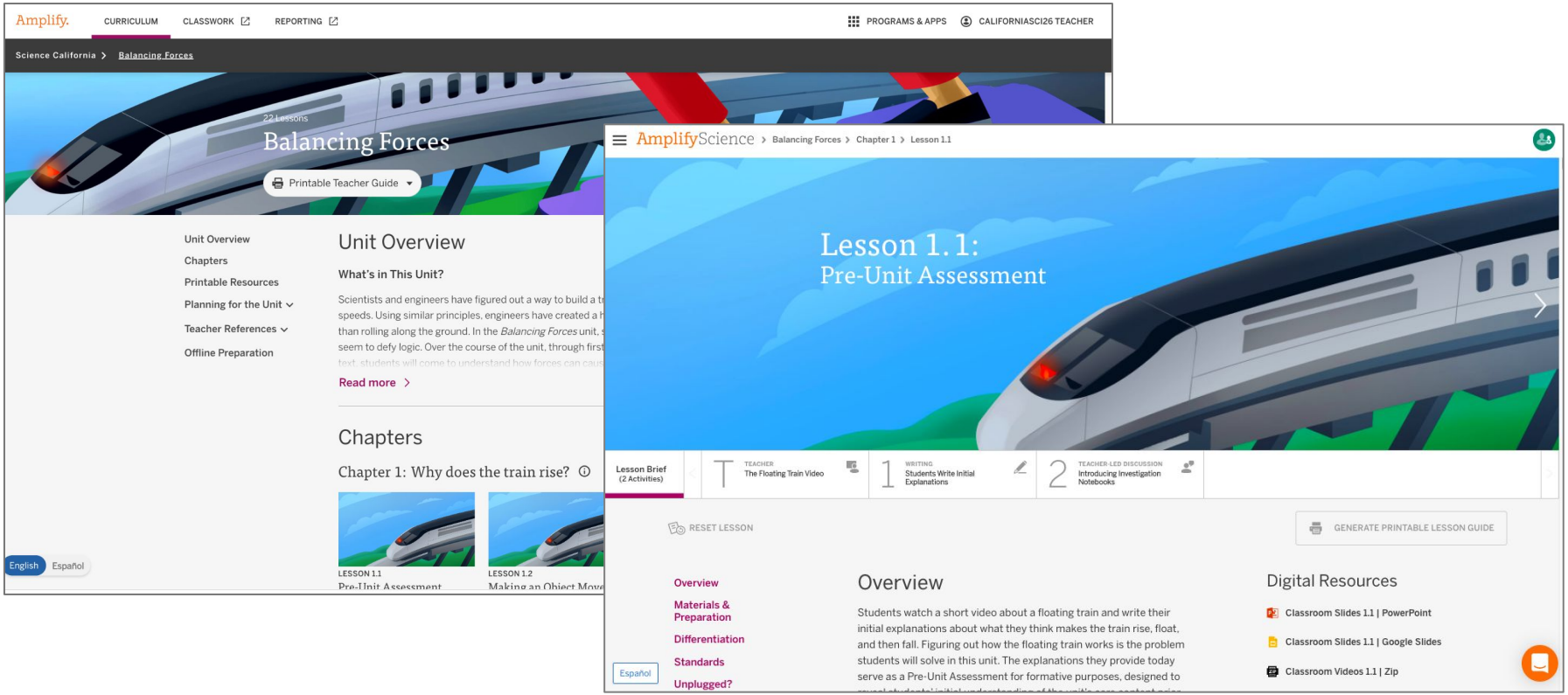
Lesson Brief (3 Activities)

1 HANDS-ON Investigating What Objects Magnetic Forces Act On

2 TEACHER-LED DISCUSSION Discussing What Objects Magnetic Forces Act On

3 READING Reading: Handbook of Forces

Let's Go Live!


Amplify.
CURRICULUM
CLASSWORK
REPORTING
PROGRAMS & APPS
CALIFORNIASCI26 TEACHER
Science California > Balancing Forces
22 Lessons
Balancing Forces
Printable Teacher Guide
Unit Overview
Chapters
Printable Resources
Planning for the Unit
Teacher References
Offline Preparation
Unit Overview
What's in This Unit?
Read more
Chapters
Chapter 1: Why does the train rise?
LESSON 1.1
LESSON 1.2
English
Español
AmplifyScience > Balancing Forces > Chapter 1 > Lesson 1.1
Lesson 1.1:
Pre-Unit Assessment
Lesson Brief
(2 Activities)
TEACHER
The Floating Train Video
WRITING
Students Write Initial Explanations
TEACHER-LED DISCUSSION
Introducing Investigation Notebooks
RESET LESSON
GENERATE PRINTABLE LESSON GUIDE
Overview
Materials & Preparation
Differentiation
Standards
Unplugged?
Español
Overview
Students watch a short video about a floating train and write their initial explanations about what they think makes the train rise, float, and then fall. Figuring out how the floating train works is the problem students will solve in this unit. The explanations they provide today serve as a Pre-Unit Assessment for formative purposes, designed to
Digital Resources
Classroom Slides 1.1 | PowerPoint
Classroom Slides 1.1 | Google Slides
Classroom Videos 1.1 | Zip

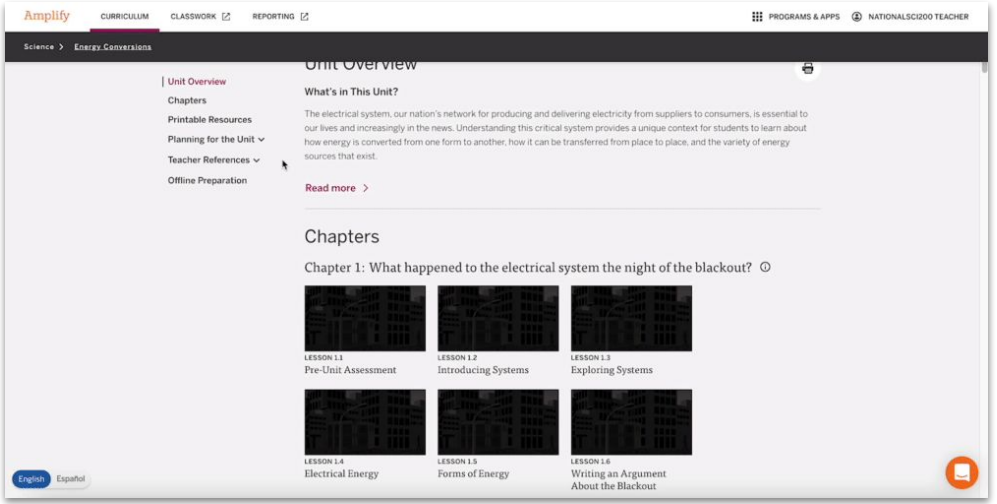
Navigation summary

1. CLICK the caret to select your grade-level.
2. Select your first unit.
    a. You are now on the Unit Landing Page.
3. Expand the **Planning for the unit** menu.
    a. Or scroll down below the lesson buttons.

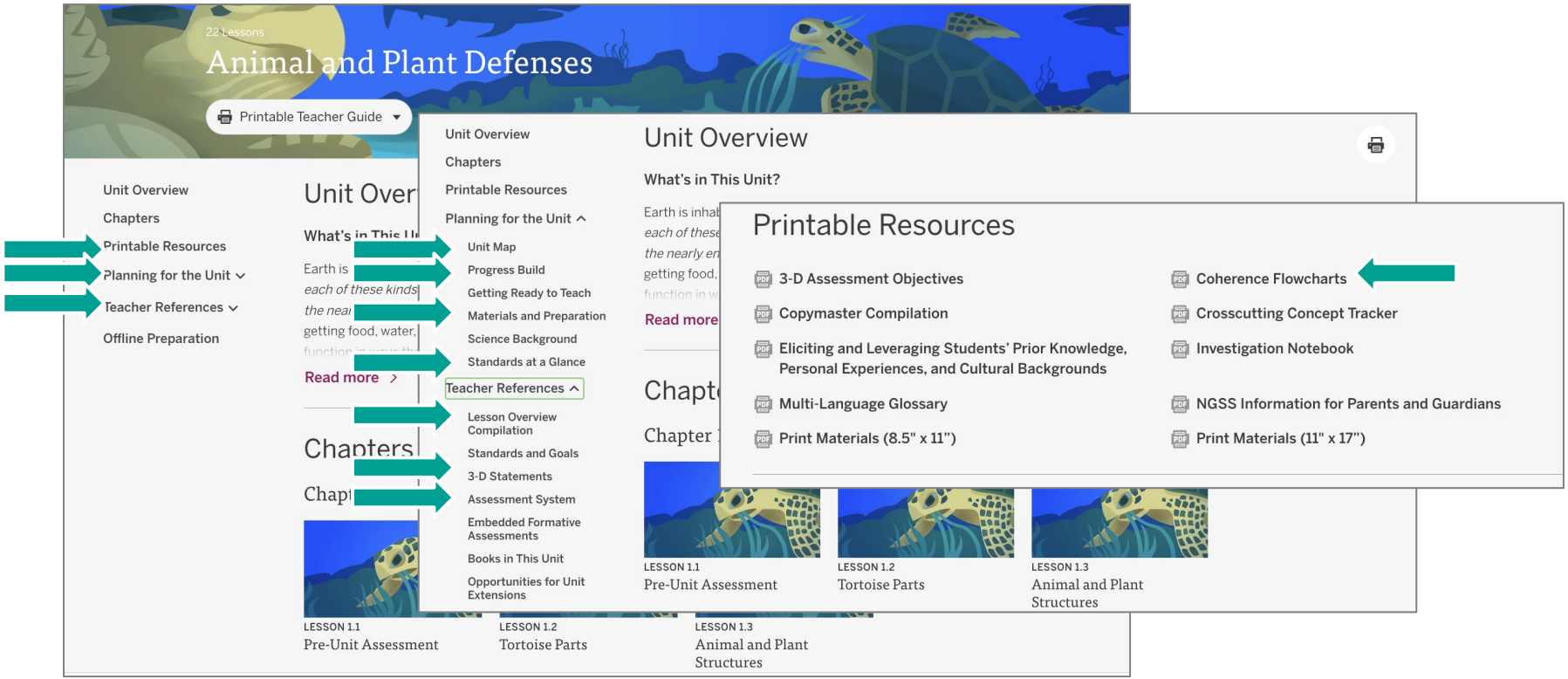
Unit Level resources

Collection of resources to support planning and day-to-day instruction in the unit:

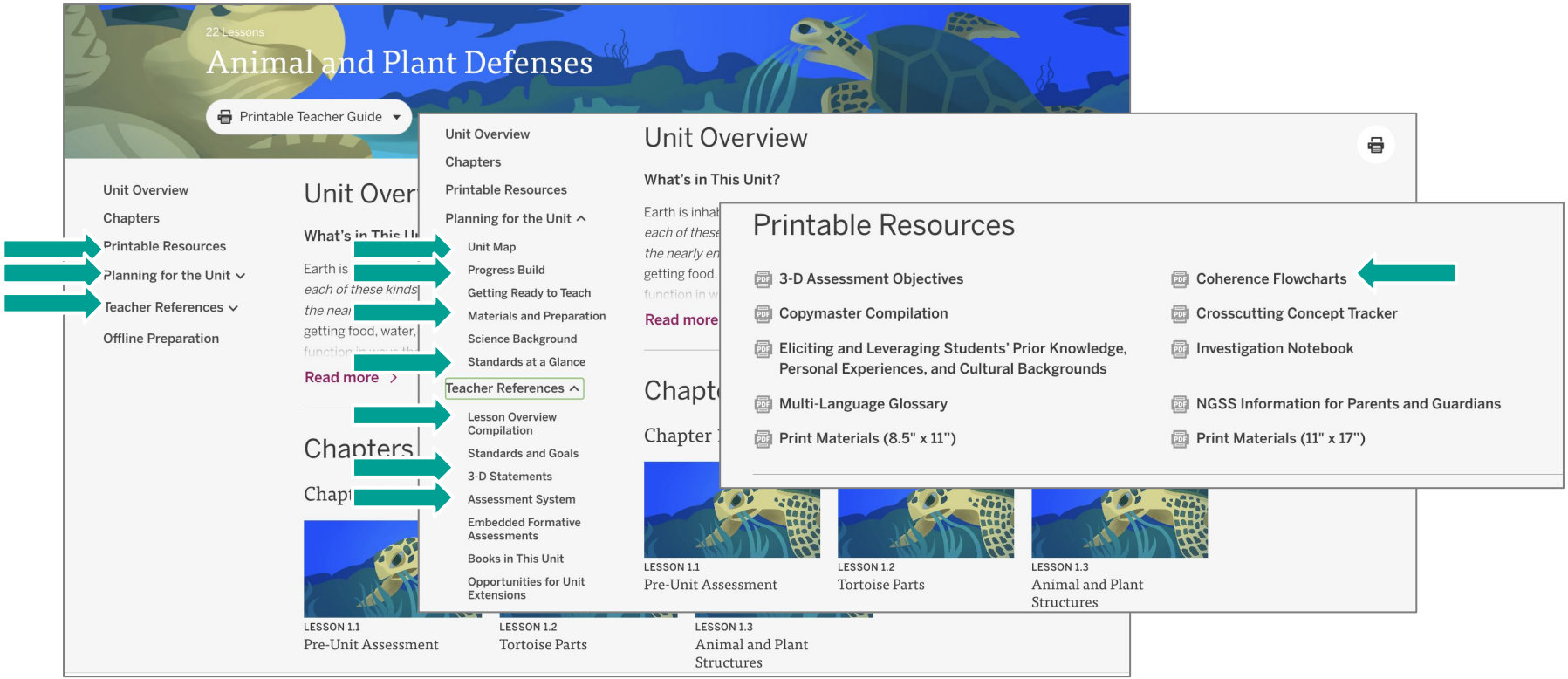
- Printable Resources
- “Planning for the Unit” documents
- Teacher References



Key Unit Documents for Unit Planning



Key Unit Documents for Unit Planning



Core Unit Planning & Internalization

Unit Title:	1

Overview

[Resources: Unit Overview, Teacher's Guide, Coherence Flowchart, Unit Map, 3-D Statements]

What is the phenomenon/real-world problem students are investigating in your unit? 2	Student Role: 3
Unit Question: 4	Relationship between the Unit Phenomenon and Unit Question: 5
By the end of the unit, students figure out... 6	
How do students engage with three-dimensional learning to figure out the phenomenon/real-world problem in your unit? 7	

Unit Guide resources:
- Unit Overview
- Unit Map
- Coherence Flowchart

Unit Guide resources:
- Lesson Overview Compilation
- Unit Overview

Unit Guide resources:
- Unit Map

Unit Guide resources:
- 3D Statements at the Unit Level

Core Unit Planning & Internalization

Unit Title:	Balancing Forces

Overview

[Resources: Unit Overview, Teacher's Guide, Coherence Flowchart, Unit Map, 3-D Statements]

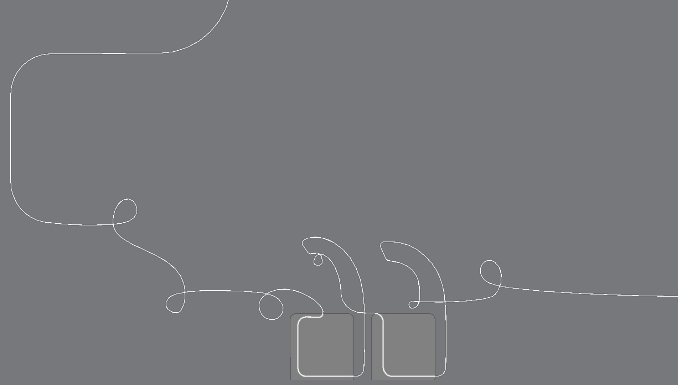
What is the phenomenon/real-world problem students are investigating in your unit?	Student Role:
How is it possible for a train to float?	Engineer
Unit Question:	**Relationship between the Unit Phenomenon and Unit Question:**
What can make an object move or not move?	In coming to understand how a floating train works, students grasp of an array of foundational concepts in the area of force and motion.

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

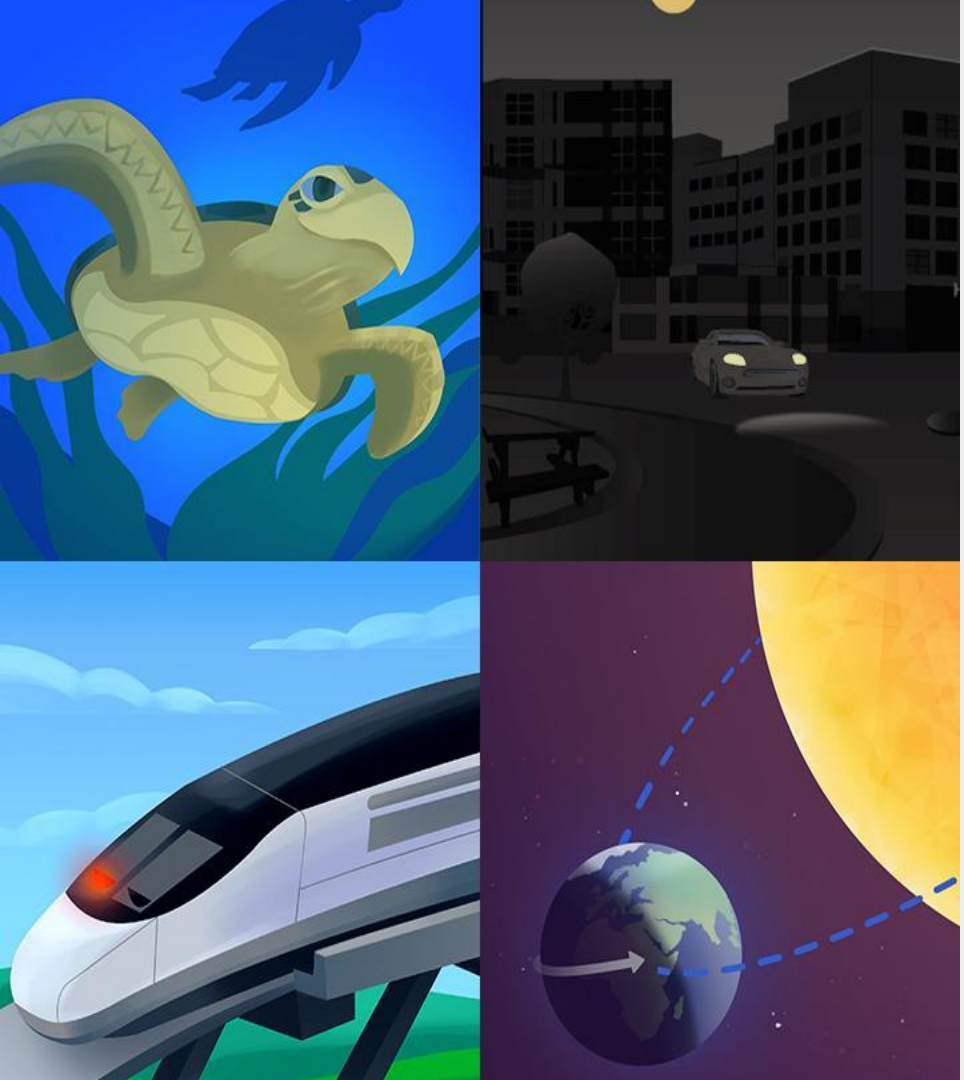
More than one force can be exerted on the train at a time. The force of gravity is pulling the train toward Earth, and magnetic force is pushing the train up away from the tracks. Those forces work in opposite directions so when the forces are balanced, the train floats and stays in the air.

How do students engage with three-dimensional learning to figure out the phenomenon/real-world problem in your unit?

Students plan and conduct investigations, analyze patterns in data (patterns), and obtain information about magnetic force, gravity, and balanced and unbalanced forces. Students write explanations and create physical models and diagram models to show why the train's vertical motion is stable at times and changes at times.



Questions?



Plan for the day: Part 1

- Introduction and Framing
- Phenomenon-based Instruction
- Unit Internalization
- Additional Resources
- Closing

Additional resources

Welcome, caregivers!

We hope you enjoy learning more about Amplify Science and what students are learning in science this year.

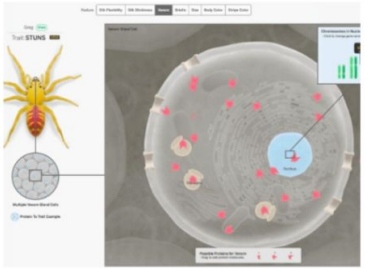
Para acceder a este sitio en español haga clic aquí.

Amplify welcomes you and your learner to the Science program for the new school year. We are very excited to provide you with exceptional learning opportunities through Science. Below are resources and helpful guides for enabling your student to have the most productive experience with our platform throughout the year.

Contact Us

TOP RATED BY EDREPORTS

Grades 6-8



Caregivers

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

Welcome to Amplify Science!

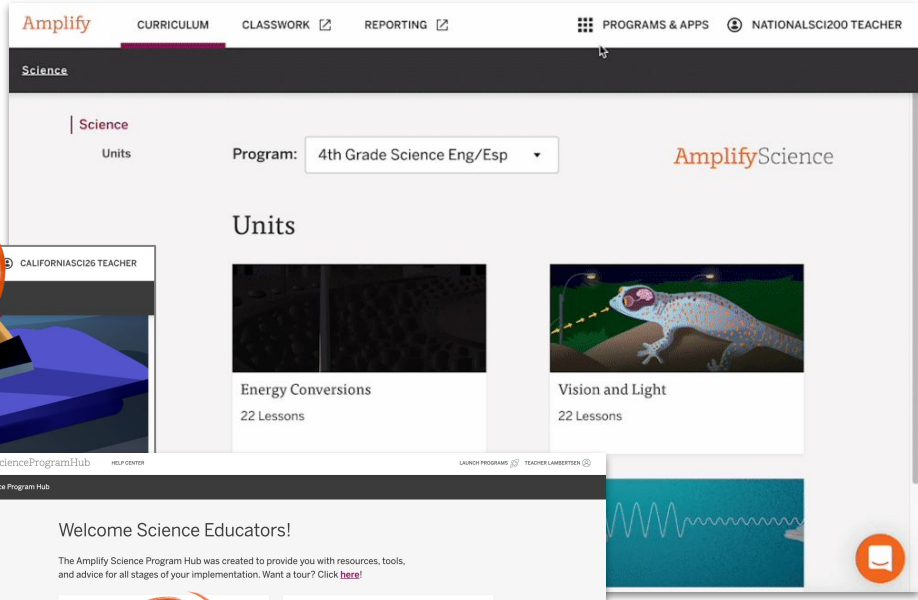
This site contains supporting resources designed for the LAUSD Amplify Science adoption for grades TK–8.

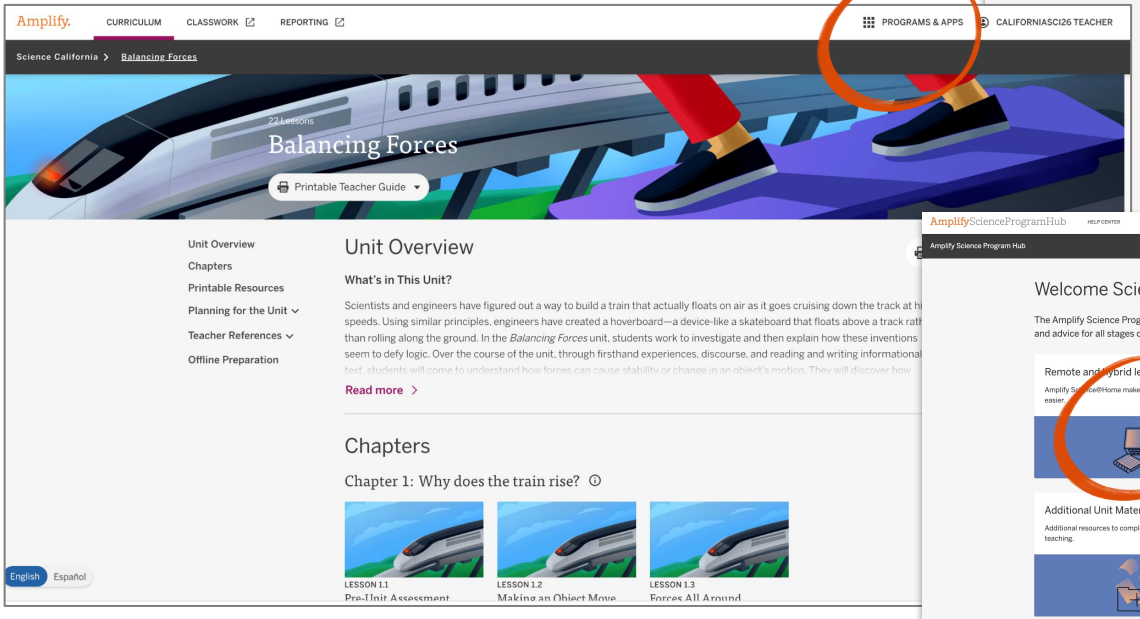
- Access the Amplify Science Program Hub (To help orient you to the new design, watch this video and view this reference guide.)
- Find out more about Amplify Science@Home
- Share the Caregiver Hub (Eng/Span) with your families
- For LAUSD ES Teachers- Amplify Science & Benchmark Advance Crosswalk
- Instructional guidance for a Responsive Relaunch of Amplify Science in 21-22

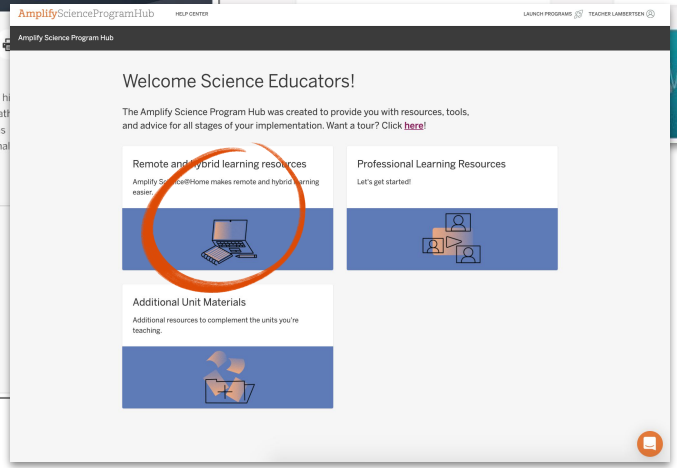
Click the button below to preview the digital Teacher's Guide, and check back for exciting updates to this site!

Program Hub

Use the Amplify Science Program Hub to find useful resources for implementing Amplify Science, including unit overview videos and planning tools.



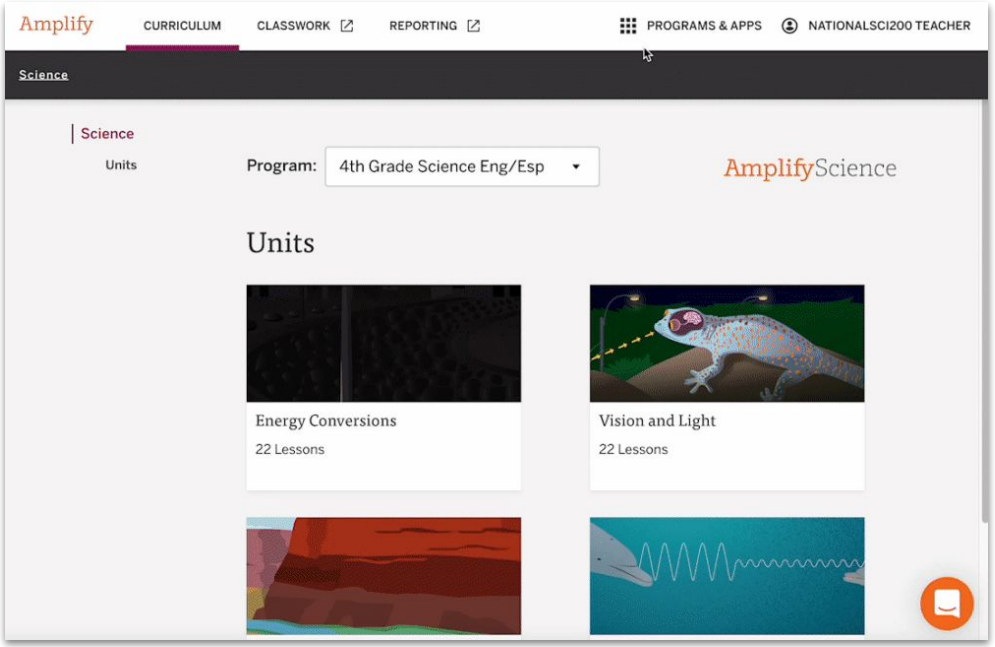


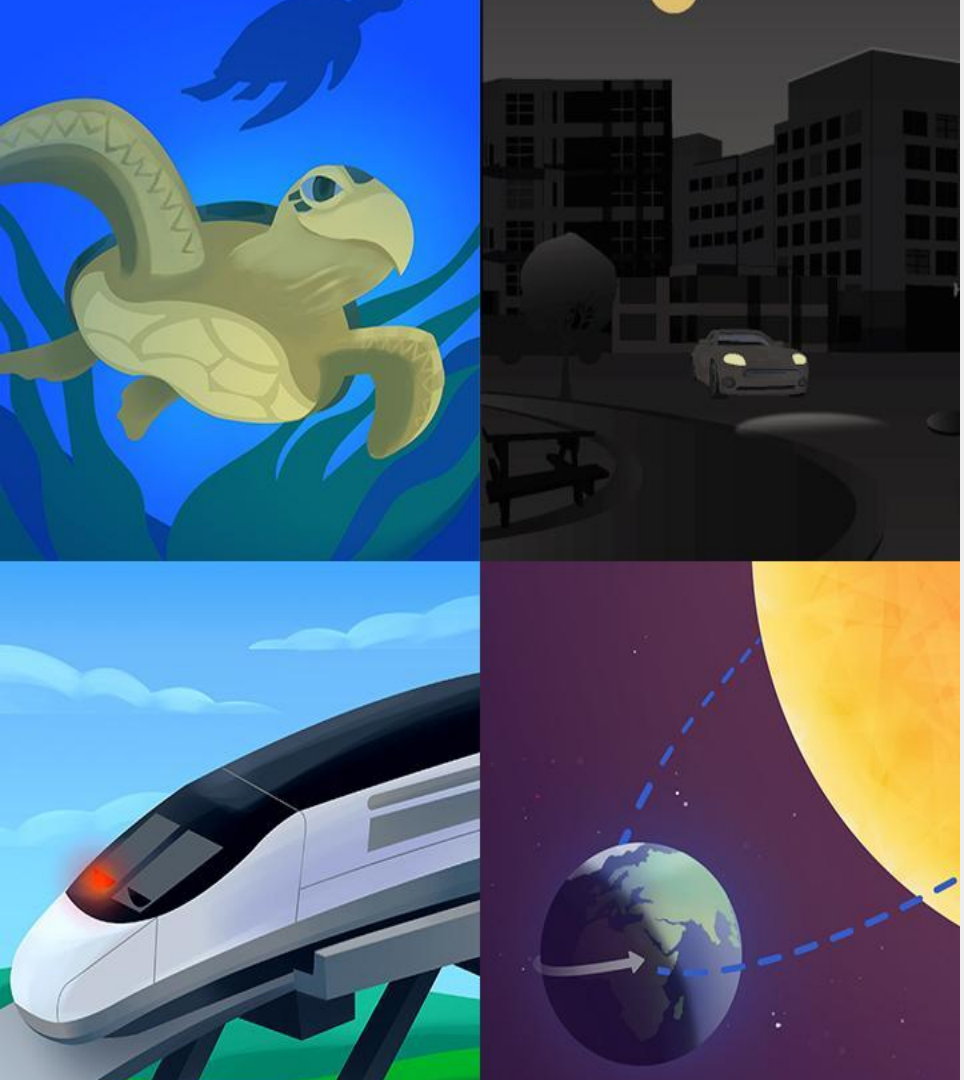


Explore the Program Hub

Familiarize yourself with the Program Hub.

Be ready to share one resource you've found that you'll use while planning and teaching.





Plan for the day: Part 1

- Introduction and Framing
- Phenomenon-based Instruction
- Unit Internalization
- Additional Resources
- Closing

Overarching goals

- ✓ Explain how students engage in phenomenon based and 3D learning to construct an understanding of the science concepts introduced in the unit
- ✓ Internalize the unit and apply your new understanding to plan for the diverse needs of your classroom and students

Closing reflection

Based on our work in Part 1, share:

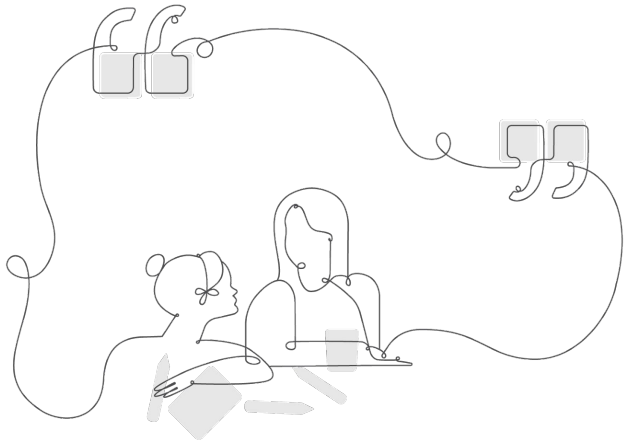
Head: something you'll keep in mind

Heart: something you're feeling

Feet: something you're planning to do

Onsite Upcoming Professional Development!

Part 3: Unit 1 - Supporting English Learners



- October 15th (Alta California ES, NW)
- October 29th (Ochoa Learning Center, East)

In this session, participants explore strategies to support English learners' ability to do, talk, read, write, visualize, and construct arguments like scientists. Participants will identify the supports and strategies embedded in Unit 1 by engaging in model activities followed by independent planning.

Additional resources and ongoing support

Customer Care

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-10PM EST and weekends 10AM-6PM EST.

help@amplify.com

800-823-1969

Amplify Chat

Please provide feedback!

Type:

Strengthen

Session title:

Unit Internalization / Guided Planning

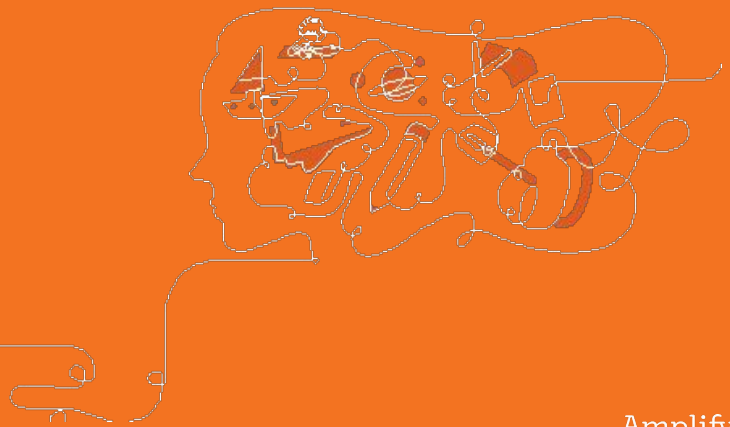
(Part 1)

Professional Learning Specialist name:

Insert name

(insert email, if you would like)

Part 2:
Guided Lesson Planning

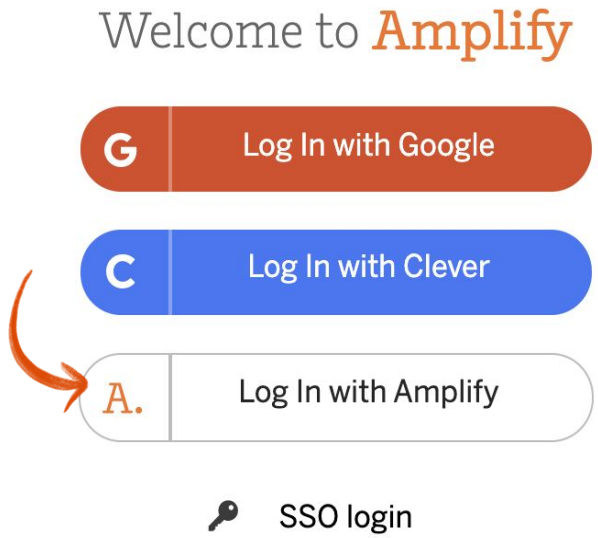


Welcome to Amplify Science!

Do Now: Log in through your Schoology account

or use Demo Account

1. Go to **learning.amplify.com**
2. Select **Log in with Amplify**
3. If you're already logged in with other Google accounts, click **Use another account**
4. Enter teacher demo account credentials
   - UN: californiasci60@pd.tryamplify.net
   - PW: AmplifyNumber1
5. Explore as we wait to begin

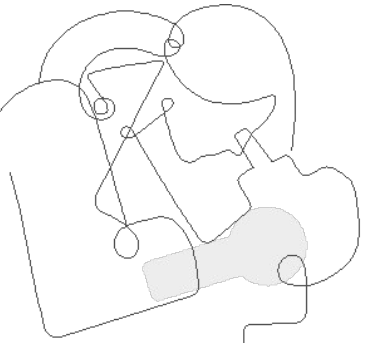


Amplify Science

Unit Internalization / Guided Planning

Grade 3, Unit 1: Balancing Forces

Part 2



School/District Name: LAUSD
Date: September, 2022
Presented by:

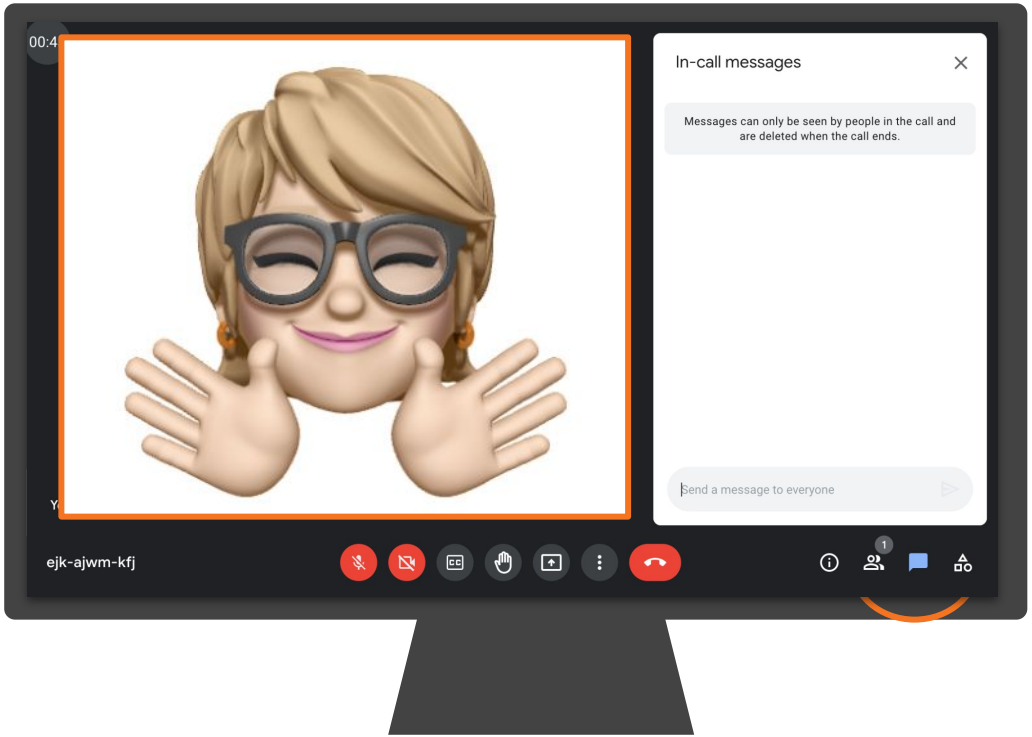
TOP RATED BY EDREPORTS

PLPG CERTIFIED PROVIDER

Ice Breaker!

Who do we have in the room today?

- **Question 1:** Which aspects of implementing the Amplify Science standard curriculum has been the most successful?
- **Question 2:** Which aspects have been the most challenging?



Amplify's Purpose Statement

Dear teachers,

You do a job that is nearly impossible and **utterly essential.**

We are in your corner – extending your reach, saving you time, and enhancing your understanding of each student.

Thank you for working with us to craft rigorous and riveting learning experiences for your classroom.

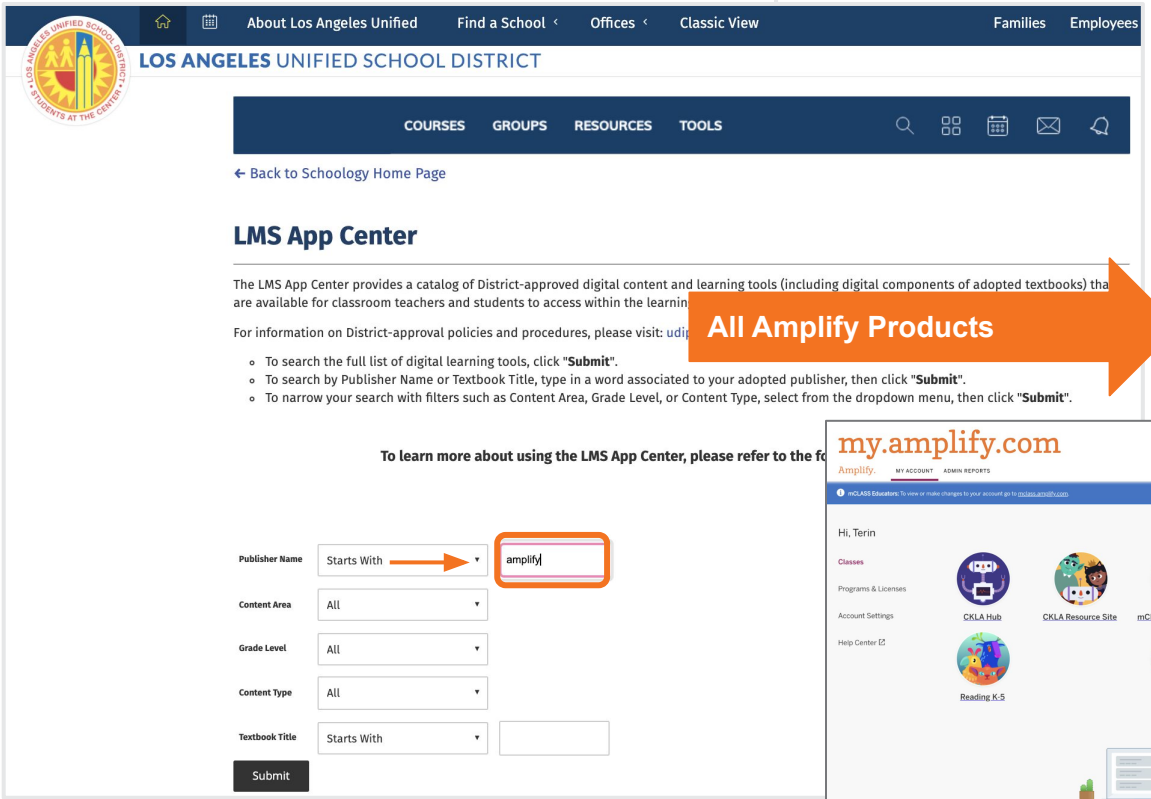
We share your goal of **inspiring all students to think deeply, creatively, and for themselves.**

Sincerely,
Amplify

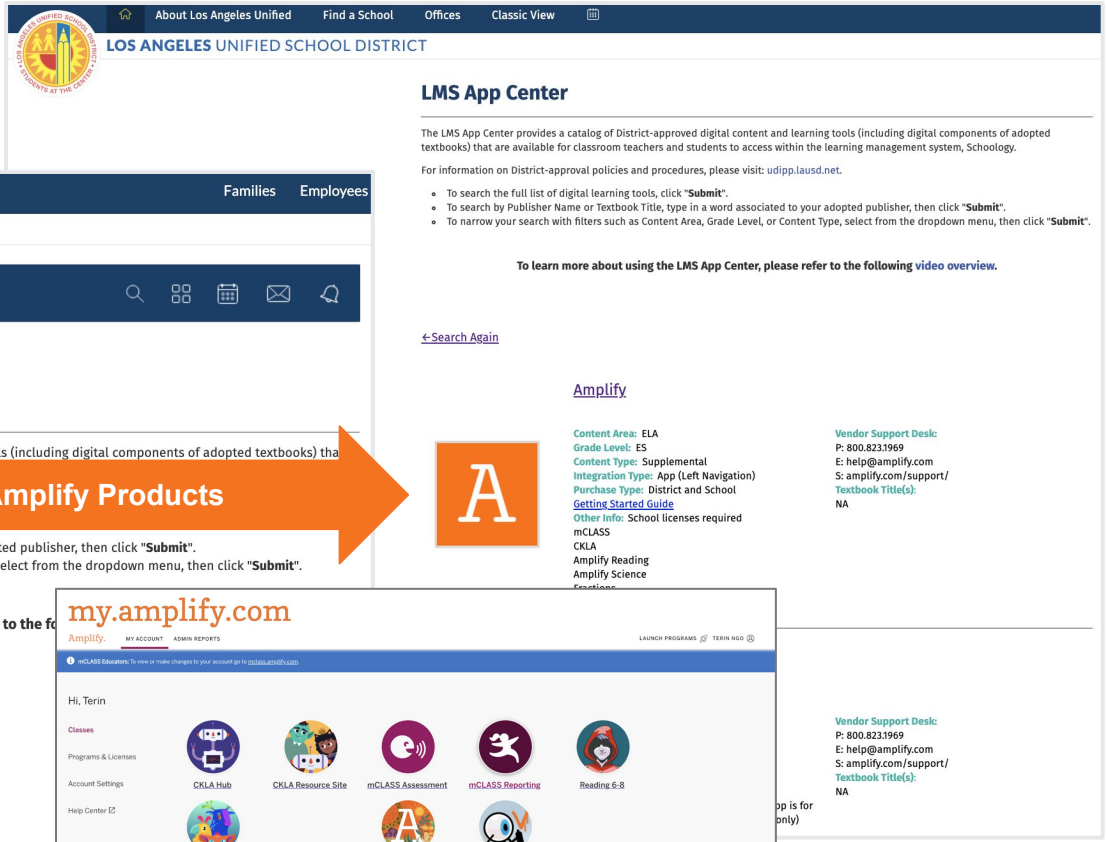
Norms: Establishing a culture of learners

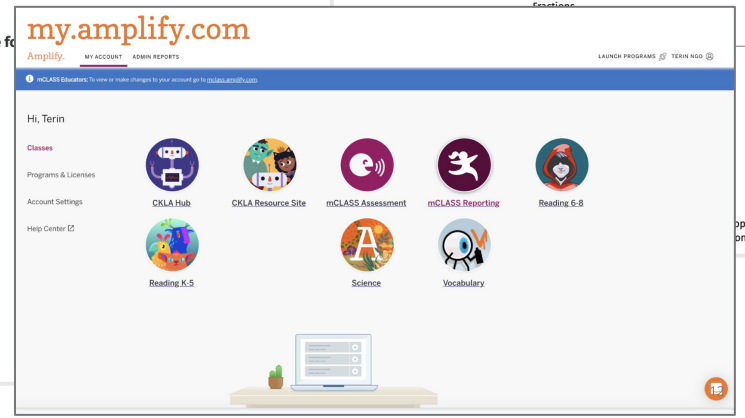
- **Take risks:** Ask any questions, provide any answers.
- **Participate:** Share your thinking, participate in discussion and reflection.
- **Be fully present:** Unplug and immerse yourself in the moment.
- **Physical needs:** Stand up, get water, take breaks.

Schoology



All Amplify Products





Join Amplify Science Schoology Group

To join Amplify Science Schoology ES Group: W4PK-W466-63F5B

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

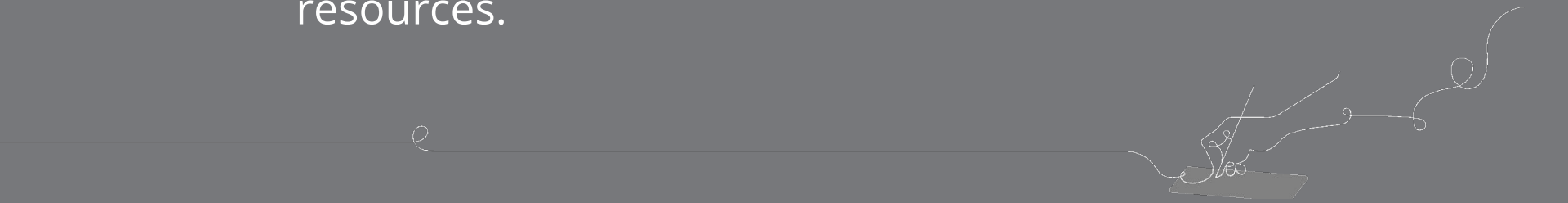
4 = Comfortable

5 = Extremely Comfortable

Overarching goals

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

- ❏ Describe what teaching and learning look like in Amplify Science.
- ❏ Prepare to teach using Amplify Science resources.

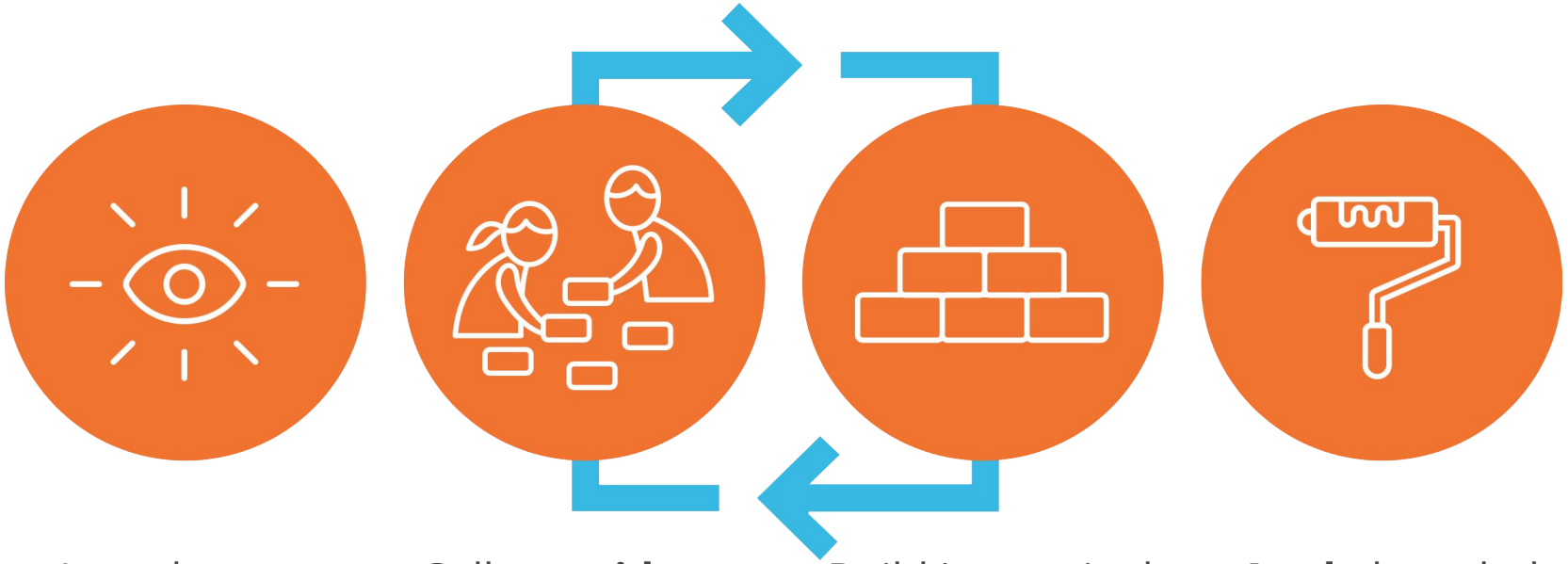


Gr. 1 LAUSD New Teacher Part 2:
Unit 1, Animal and Plant Defenses

Plan for the day: Part 2

- Teaching and Learning in an Amplify Science Lesson
- Instructional Approach Reflection
- Planning a Lesson
- Closing

Amplify Science Approach



Introduce a **phenomenon** and a related problem

Collect **evidence** from multiple sources

Build increasingly complex **explanations**

Apply knowledge to solve a different problem

Balancing Forces

What can make an object move or not move?

Students explore forces that are acting on and around them every day, often unseen and misunderstood.They will discover how magnetic force can be used to counterbalance the force of gravity.

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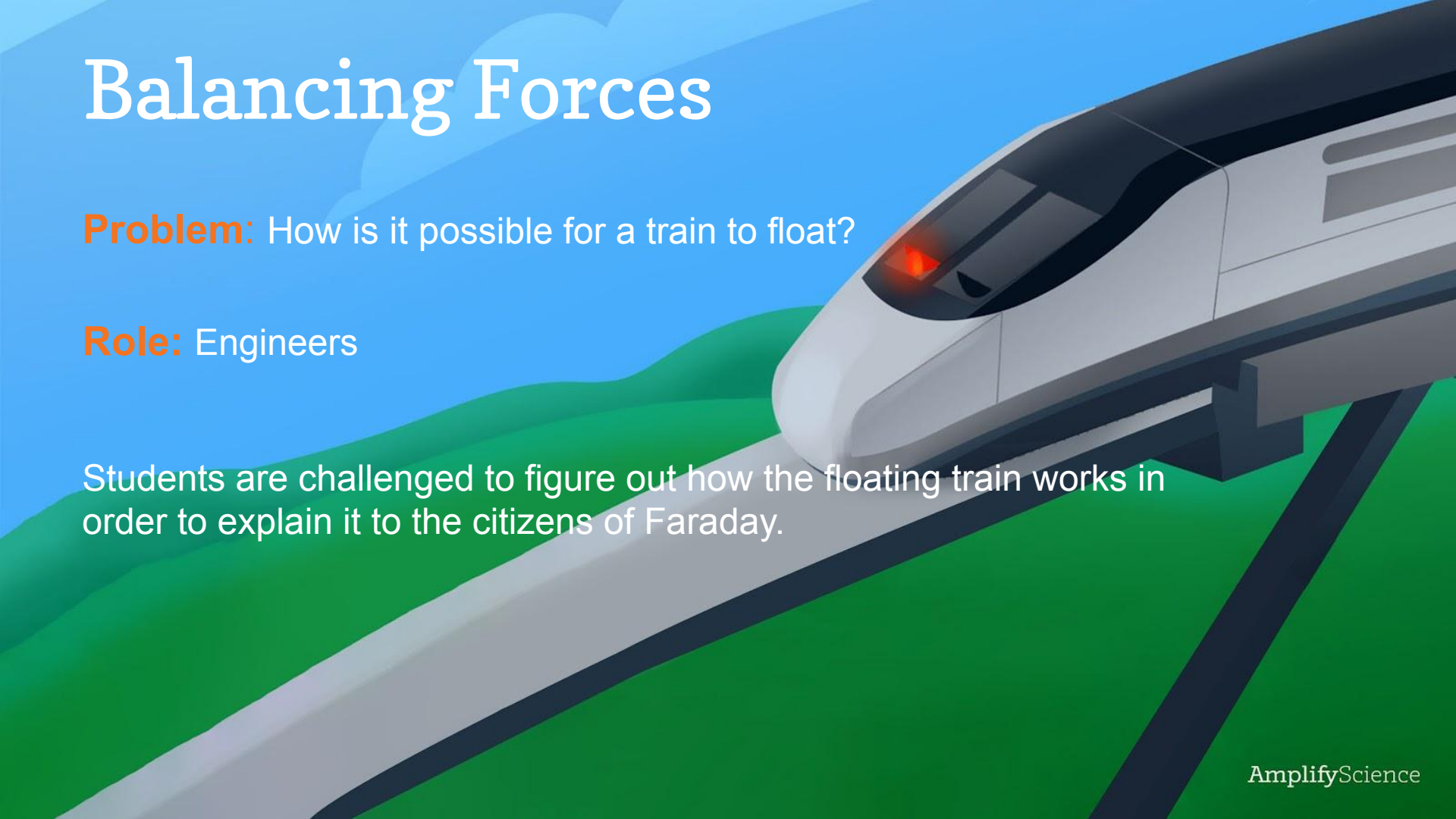
Balancing Forces

Problem: How is it possible for a train to float?

Role: Engineers

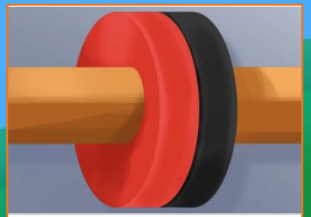
Students are challenged to figure out how the floating train works in order to explain it to the citizens of Faraday.



Coherent Storylines

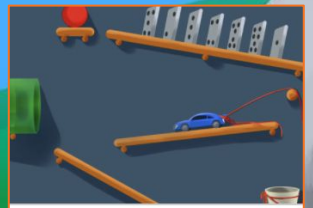
Chapter 1: Why does the train rise?

4 Lessons



Chapter 2: Why does the train rise without anything touching it?

5 Lessons



Chapter 3: Why does the train fall?

4 Lessons

Chapter 4: Why does the train float, even though gravity is acting on it?

4 Lessons

Chapter 5: Why does the train change from floating to falling?

5 Lessons

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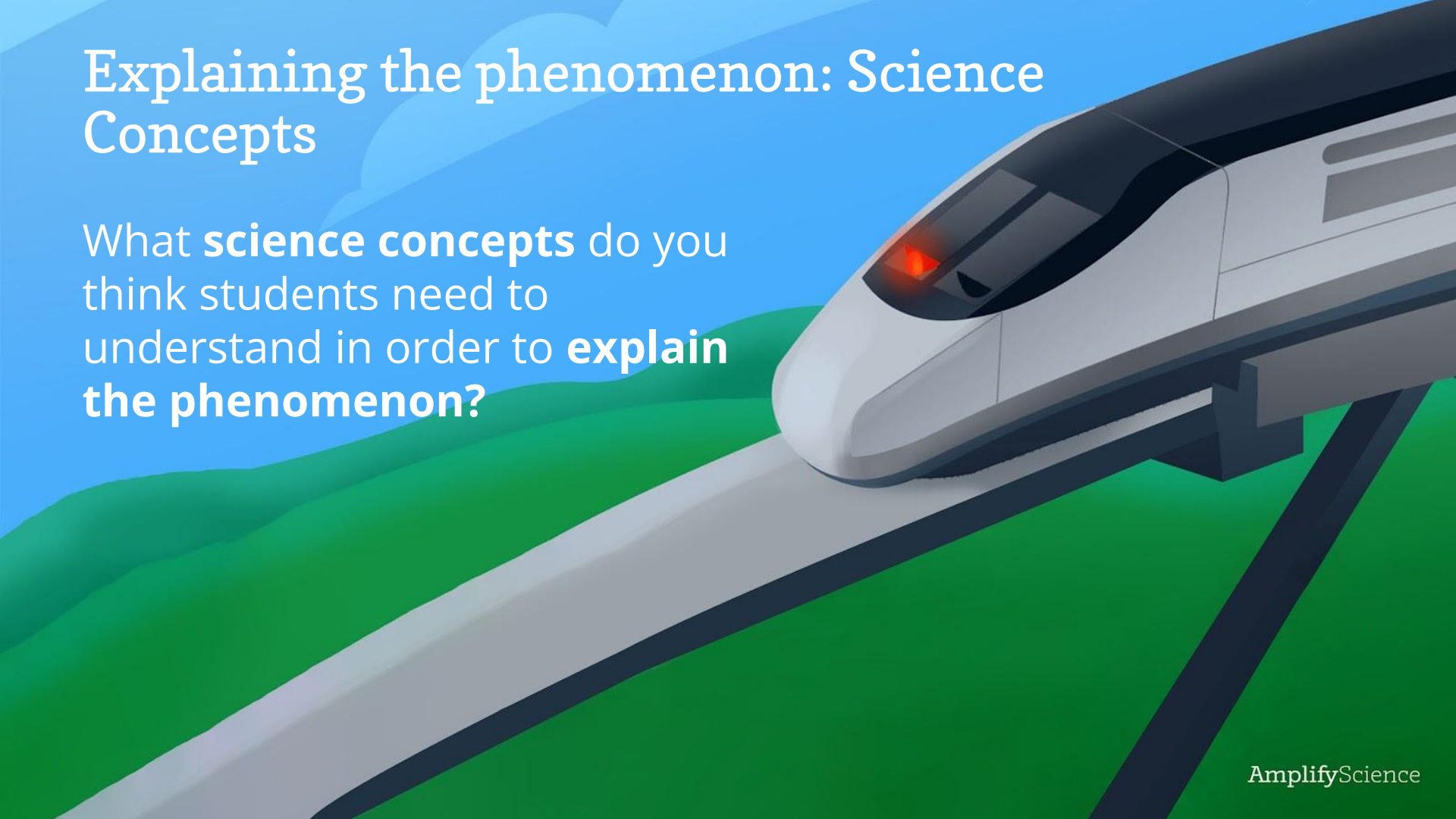
Explaining the phenomenon: Science Concepts

What **science concepts** do you think students need to understand in order to **explain the phenomenon?**



Progress Build

Balancing Forces

Assumed prior knowledge (preconceptions): When you push or pull something, it starts moving.

Level 1

A force is a push or pull that acts between two objects.

Level 2

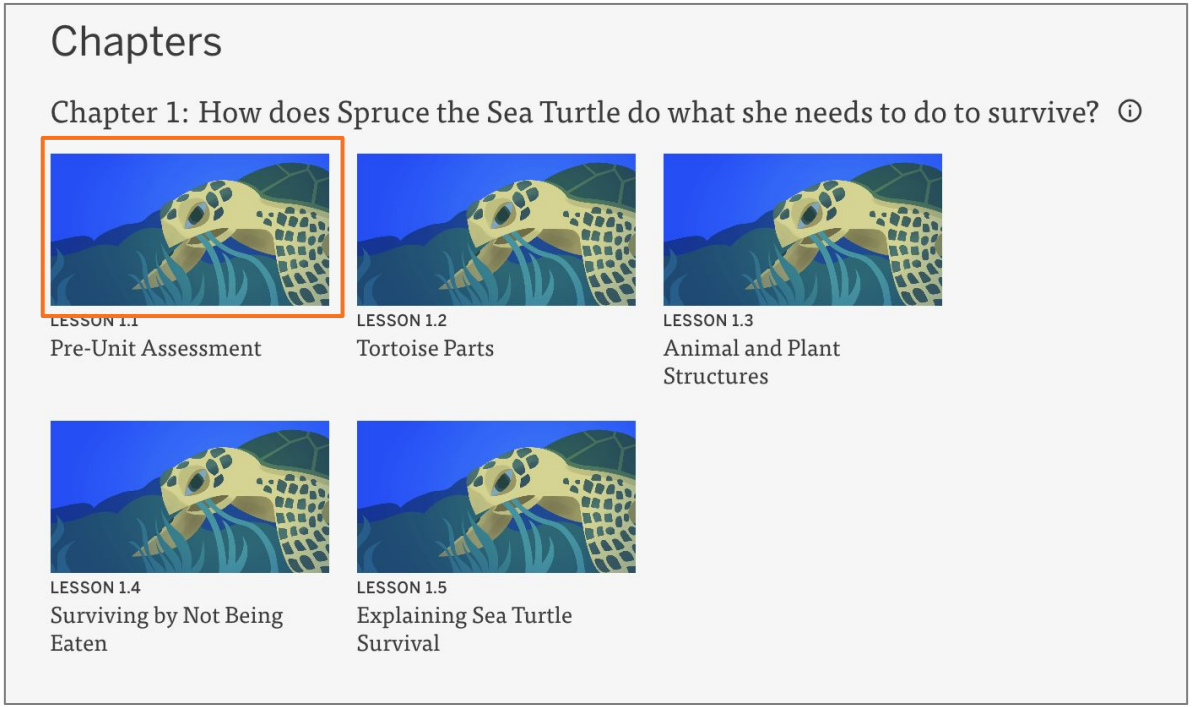
Forces can be touching or non-touching.

Level 3

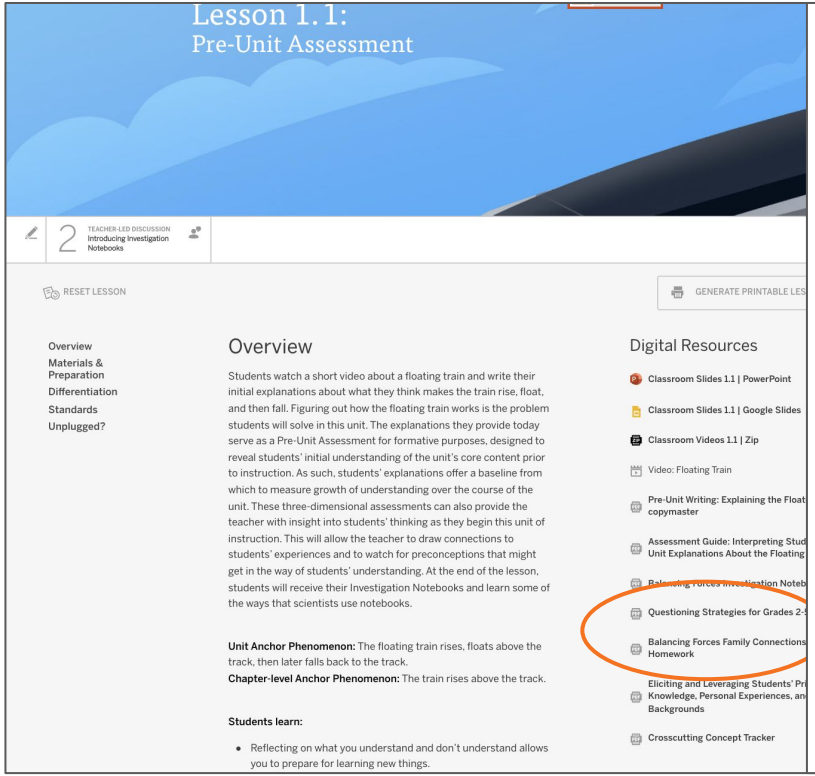
More than one force can act on an object at the same time. When those forces are balanced, a still object will remain still; when those forces are unbalanced, the object will start to move.

Beginning the Unit

The first lesson of every Unit is a pre-unit assessment.



Balancing Forces Family Connection



Name: _____ Date: _____

Balancing Forces Family Connections Homework

1. Choose a member of your family and tell them about what we are investigating in science class.
2. Ask them about their experiences, ideas, and questions related to our investigations.
3. Write notes about what you learn.

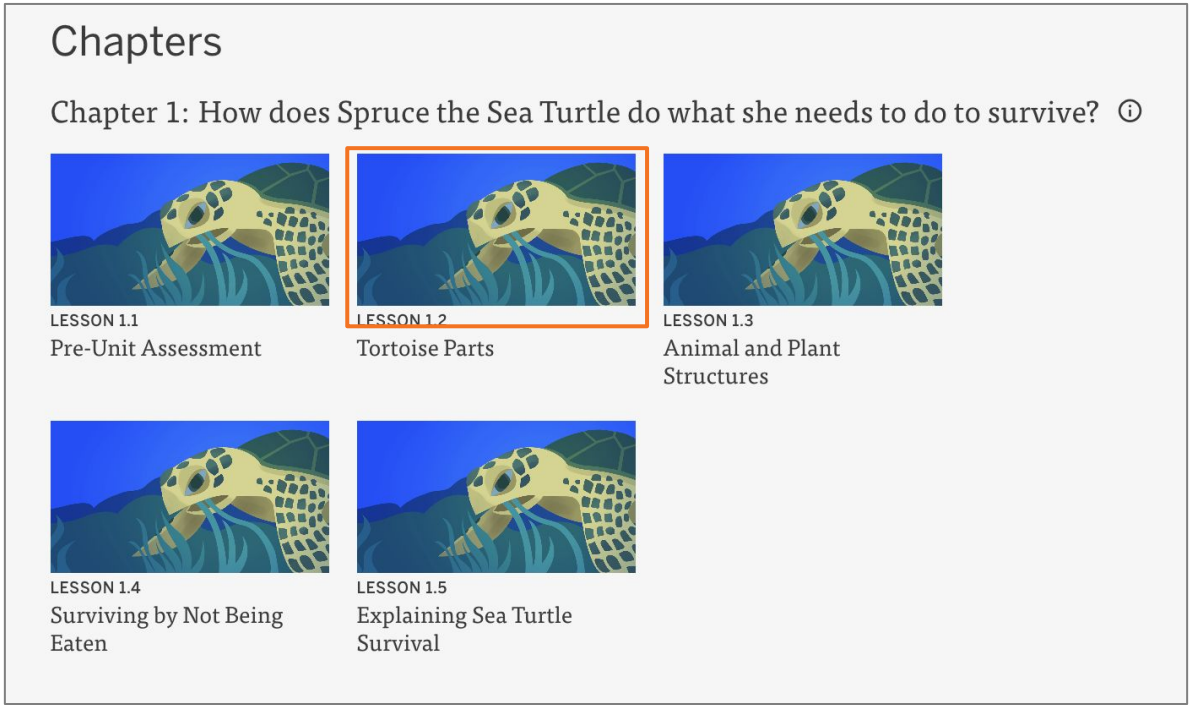
Summary of our investigation you can share:
In science class, we are working as scientists to figure out how a floating train works. We will be answering the question, *What can make an object move or not move?*

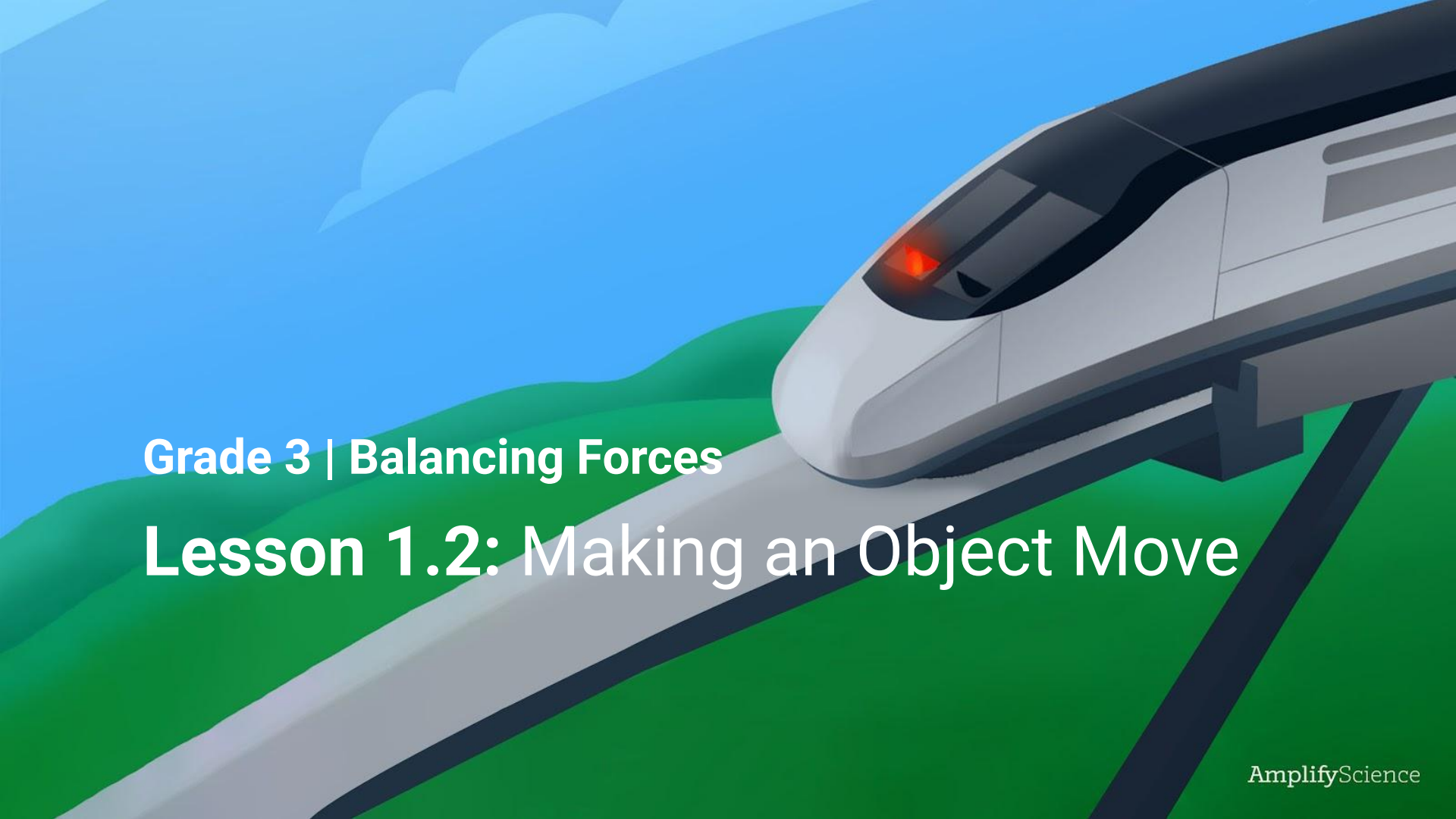
Ask questions such as:

- What does our investigation make you think of?
- Do you have any memories, stories, expertise, or experiences about something like what we're investigating?
- What have you heard or learned about these topics?
- What do you wonder about what we are investigating?

Beginning the Unit

Model lesson 1.2





Grade 3 | Balancing Forces

Lesson 1.2: Making an Object Move

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20 MIN

Activity 1

Discussing Initial Ideas

Real engineers invented floating trains. The trains are faster and use less energy than regular trains.

You will be student **scientists** investigating what can make things move, float, and fall.

Think-Pair-Share Routine

Think

Think silently about the question.

Pair

Turn and talk to a partner about the question.

Share

Share your ideas about the question with the class.

What do you think could make a train **rise up** off the track?

What do you think could make a train **float above** the track?

What do you think could make a train **fall back** onto the track?

What questions do you have about the floating train?

Unit Question

What can make an object move or not move?

Chapter 1 Question

Why does the train rise?

20 MIN

Activity 2

Making Blocks Move

Today, we're going to investigate this question:

What makes an object start to move?

Vocabulary

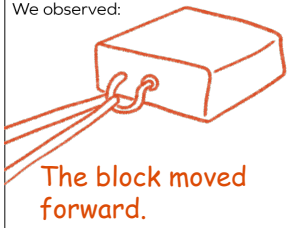
observe

to use any of the five senses to learn more about something

Name: _____ Date: _____

Making Blocks Move

Directions:
1. With your partner, use the materials in your bag to make a block start moving.
2. In each box, record the object you used to make the block move.
3. In each box, record or draw your observation.

We used a rubber band. We observed:  	We used _____. We observed:
We used _____. We observed:	We used _____. We observed:

On page 2 of the Investigation Notebook, we will **record what we observed** with words and drawings.

Name: _____ Date: _____

Making Blocks Move

Directions:

1. With your partner, use the materials in your bag to make a block start moving.
2. In each box, record the object you used to make the block move.
3. In each box, record or draw your observation.

We used _____. We observed:	We used _____. We observed:
We used _____. We observed:	We used _____. We observed:

Write and **draw** to record how you made the block move and what you observed.

Find many ways to make one of the blocks start moving.

20 MIN

Activity 3

Sharing Observations

Class Observation Table

Object 1	Object 2	Observation	Push, a pull, or not sure
			

We will gather observations from the whole class and record them in this table.

Class Observation Table

Object 1	Object 2	Observation	Push, a pull, or not sure
			

When scientists gather observations, they look for patterns they can notice.

What patterns do you notice?

Vocabulary

force

a push or a pull

End of Lesson

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

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Gr. 1 LAUSD New Teacher Part 2:
Unit 1, Animal and Plant Defenses

Plan for the day: Part 2

- Teaching and Learning in an Amplify Science Lesson
- Instructional Approach Reflection
- Planning a Lesson
- Closing

Gathering evidence

Balancing Forces Lesson 1.2

Chapter Question: Why does the train rise?

Investigation Question: What makes an object start to move?

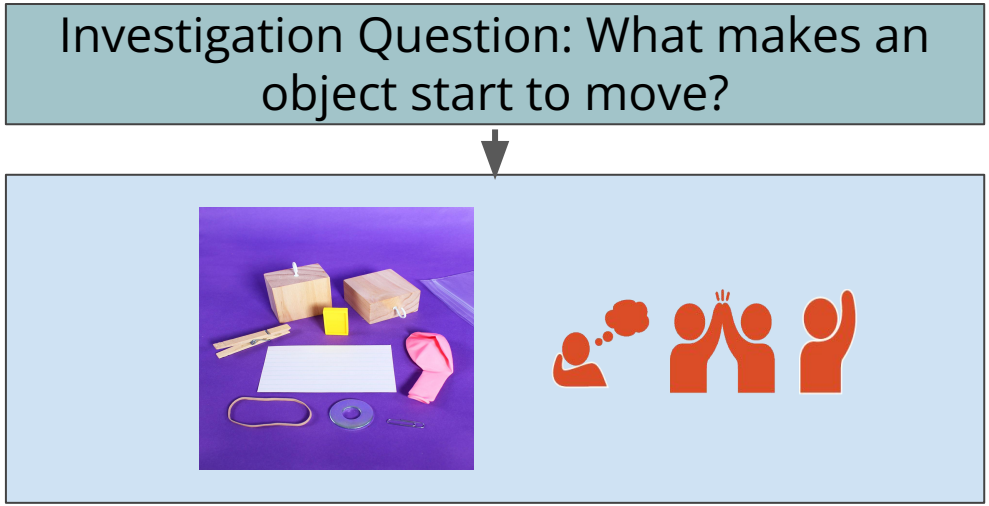
Class Observation Table

Object 1	Object 2	Observation	Push, a pull, or not sure

Evidence sources work together

Investigate making blocks move and sharing observations

How do these activities **work together** to support understanding of what makes an object start to move?



Gathering evidence

Balancing Forces Lesson 1.2

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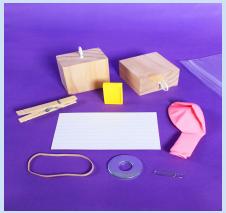
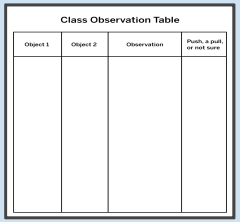
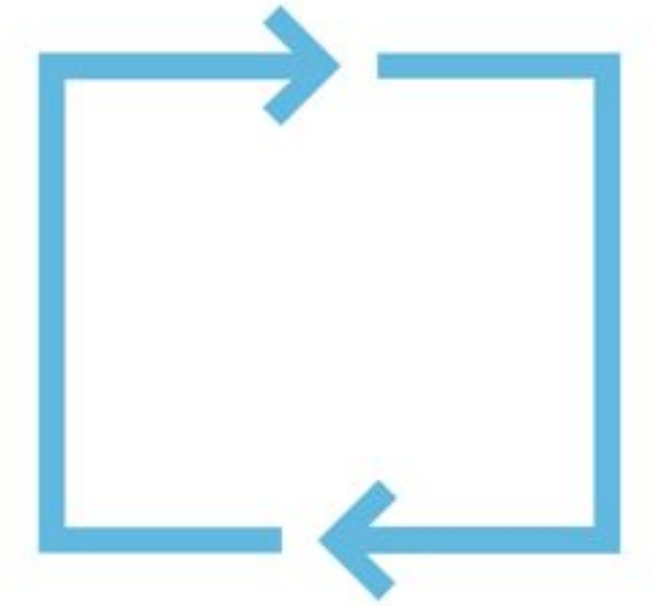




What have students figured out so far?

Multimodal learning

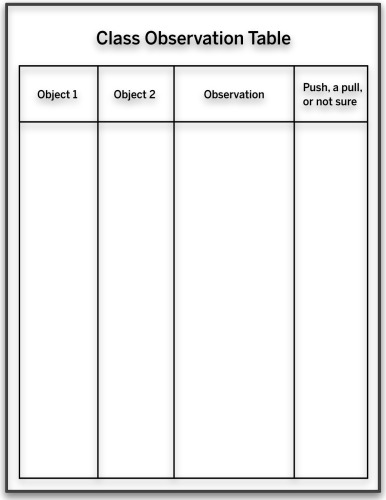
Gathering evidence over multiple lessons



Do,
Talk,
Read,
Write,
Visualize

Evidence sources work together

Teacher tip: Every evidence source plays an important role in student learning. Be sure to teach every activity in order!



Coherence Flowchart

A diagram of student learning

Phenomenon
(Chapter Question)

↓

Investigation Question

↓

Multiple sources of evidence

↓

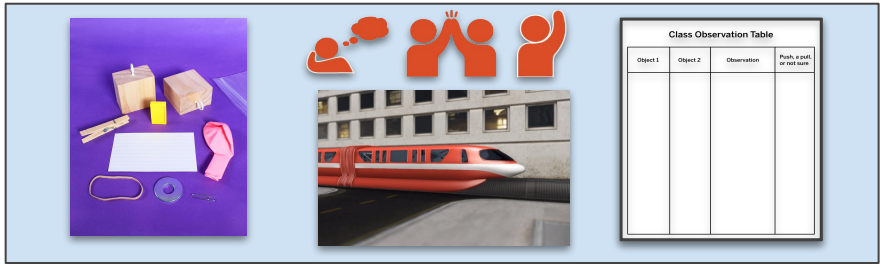
Key concepts

Chapter Question: Why does the train rise?

↓

Investigation Question: What makes an object start to move?

↓



Coherence Flowchart

Balancing Forces Lesson 1.2-1.4

Chapter Question: Why does the train rise?

↓

Investigation Question: What makes an object start to move?

↓

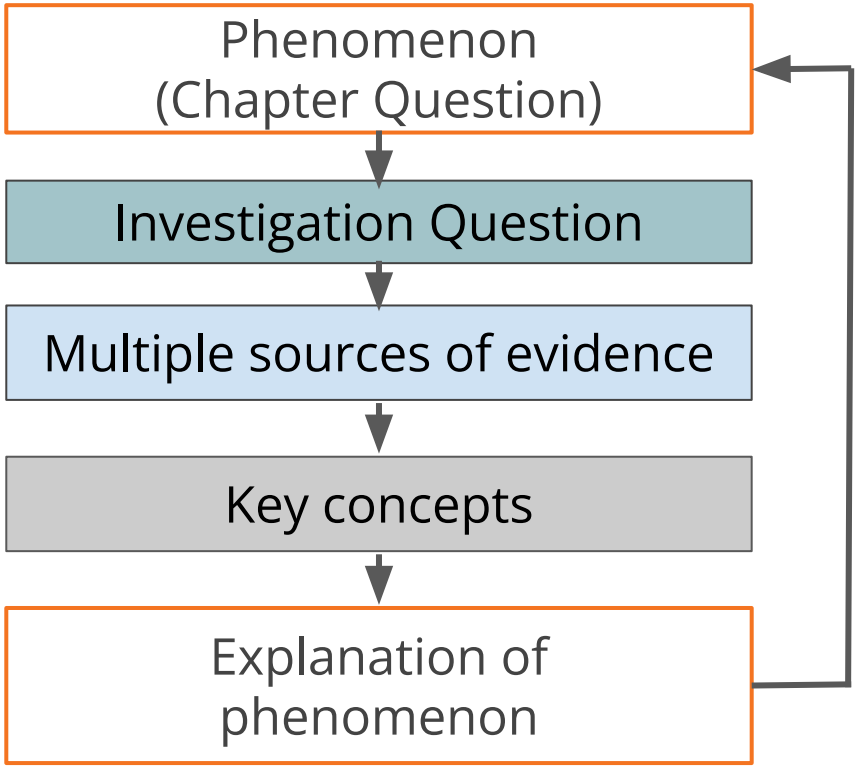
Evidence: Investigate by making blocks move (1.2)
Evidence: Read *Forces All Around* (1.3)
Evidence: View *Domino* video(1.4)
Evidence: Create and analyze chain reactions (1.4)

↓

Key concepts: A force acts between two objects. When an object starts moving or stops moving, that is evidence that a force has acted on it.

Coherence Flowchart

A diagram of student learning



Coherence Flowchart

Balancing Forces Lesson 1.2-1.4

Chapter Question: Why does the train rise?

↓

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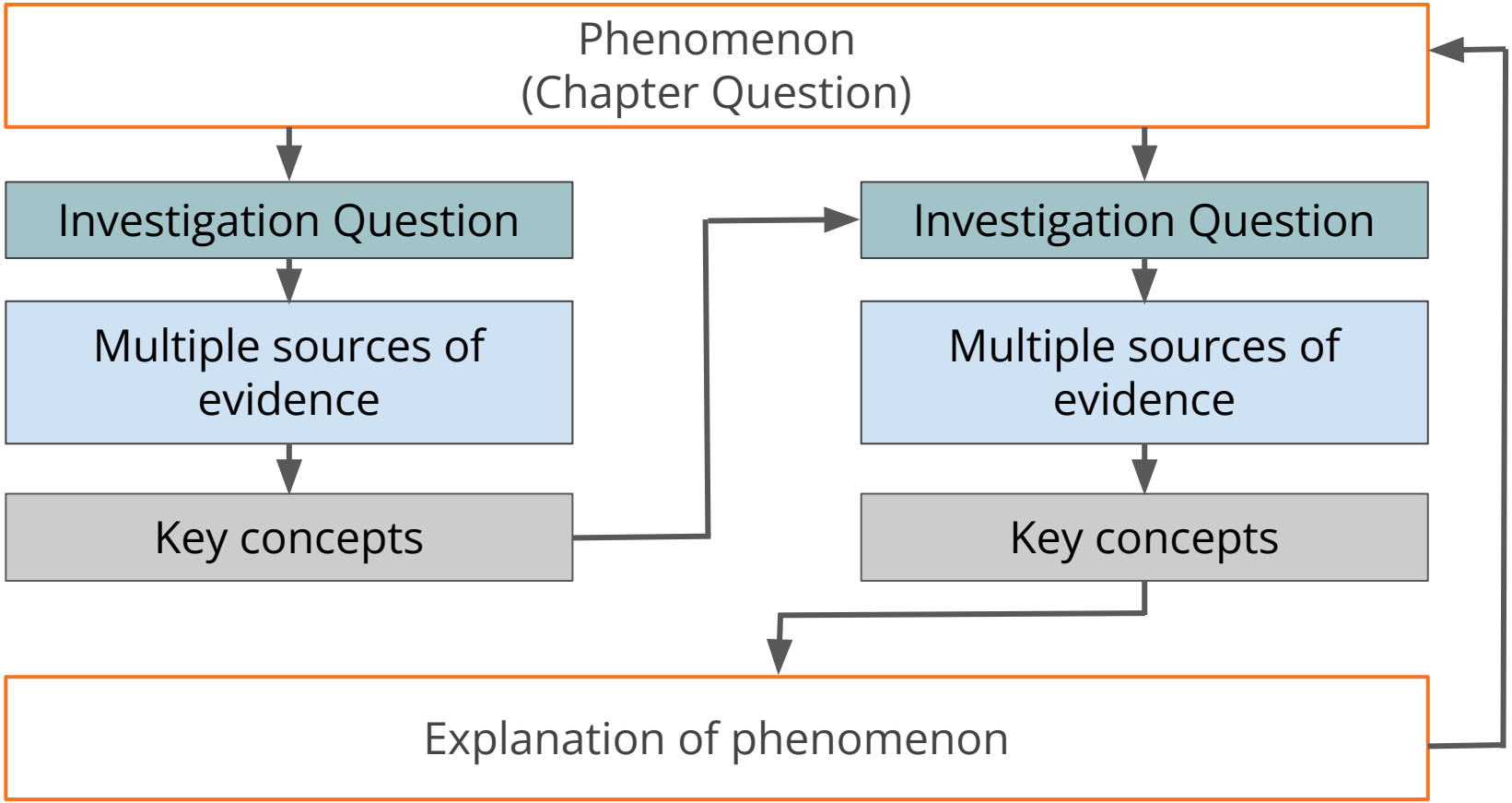
Coherence Flowchart



Balancing Forces: Investigating Floating Trains

Unit Anchor Phenomenon

Problem students work to solve

The floating train rises, floats above the track, then later falls back to the track.
How is it possible for a train to float?

Chapter-level Anchor Phenomenon
Chapter 1 Question

The train rises above the track.
Why does the train rise?

Investigative Phenomenon
Investigation Question

Sometimes objects start to move.
What makes an object start to move? (1.2, 1.3, 1.4)

Evidence sources and reflection opportunities

- Investigate by making blocks move (1.2)
- Read *Forces All Around* (1.3)
- View *Domino* video (1.4)
- Create and analyze chain reactions (1.4)

Key concepts

- A force acts between two objects. (1.3)
- When an object starts moving or stops moving, that is evidence that a force has acted on it. (1.3)

Application of key concepts to problem

- Discuss why the train starts to move (1.4)
- Write a scientific explanation about the floating train (1.4)

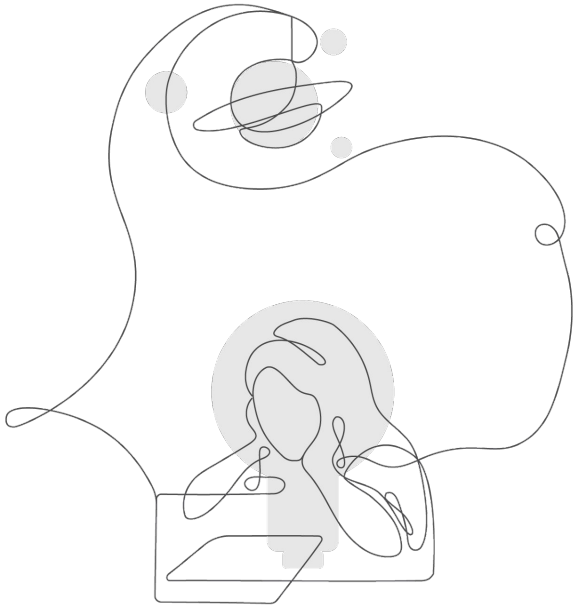
Explanation that students can make to answer the Chapter 1 Question

The train rises because a force acts on it. The train started to move and when an object changes how it is moving, that means a force acted on it.

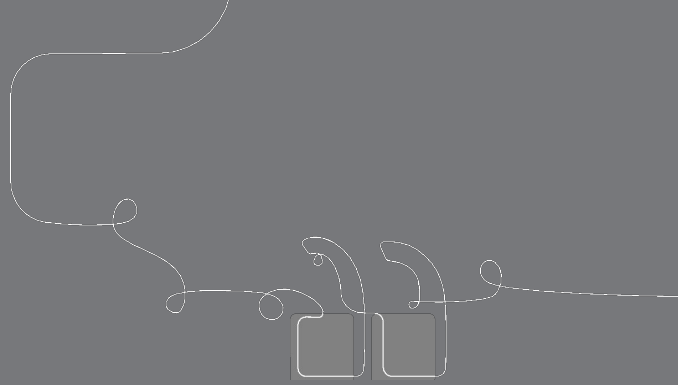
Explore the Coherence Flowchart

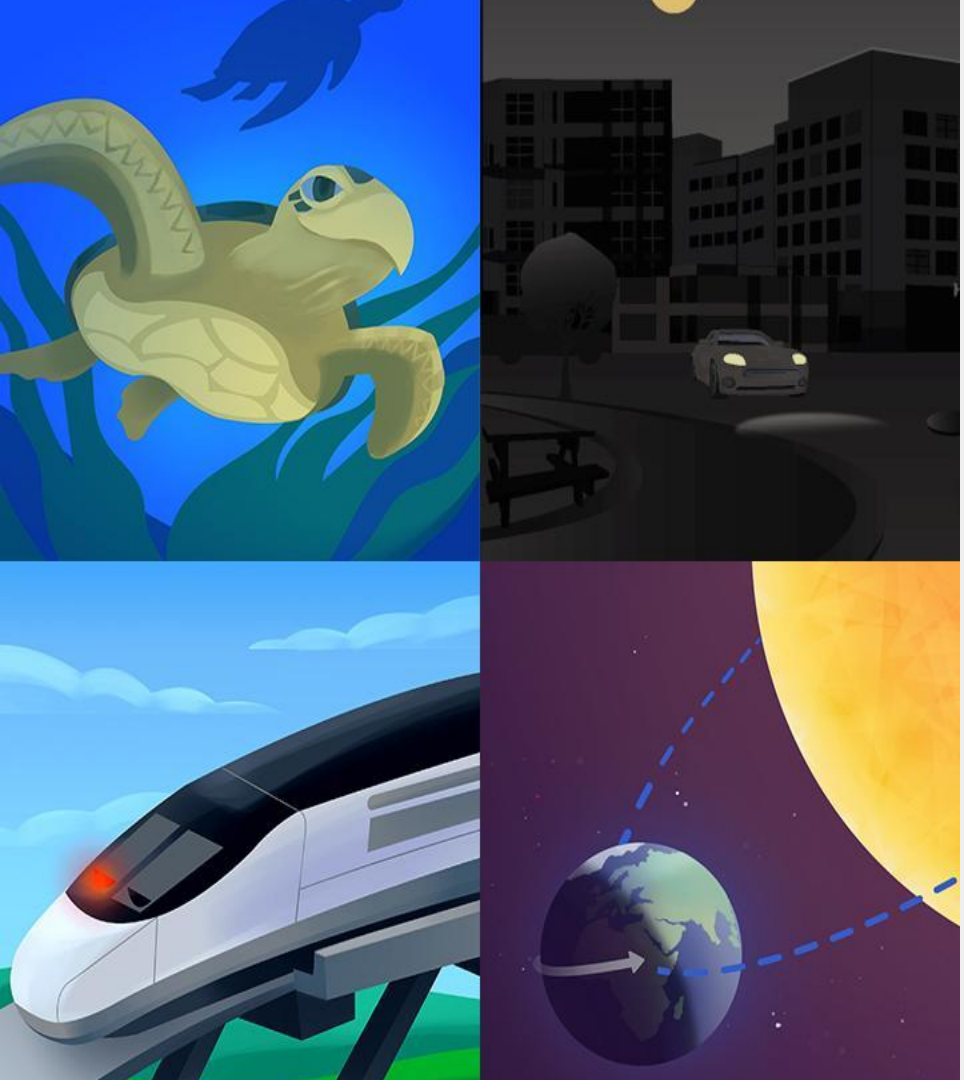
Skim the Chapter 1 Coherence Flowchart.

Think about how you might use the Coherence Flowchart to summarize learning throughout Chapter 1.



Questions?





Plan for the day: Part 2

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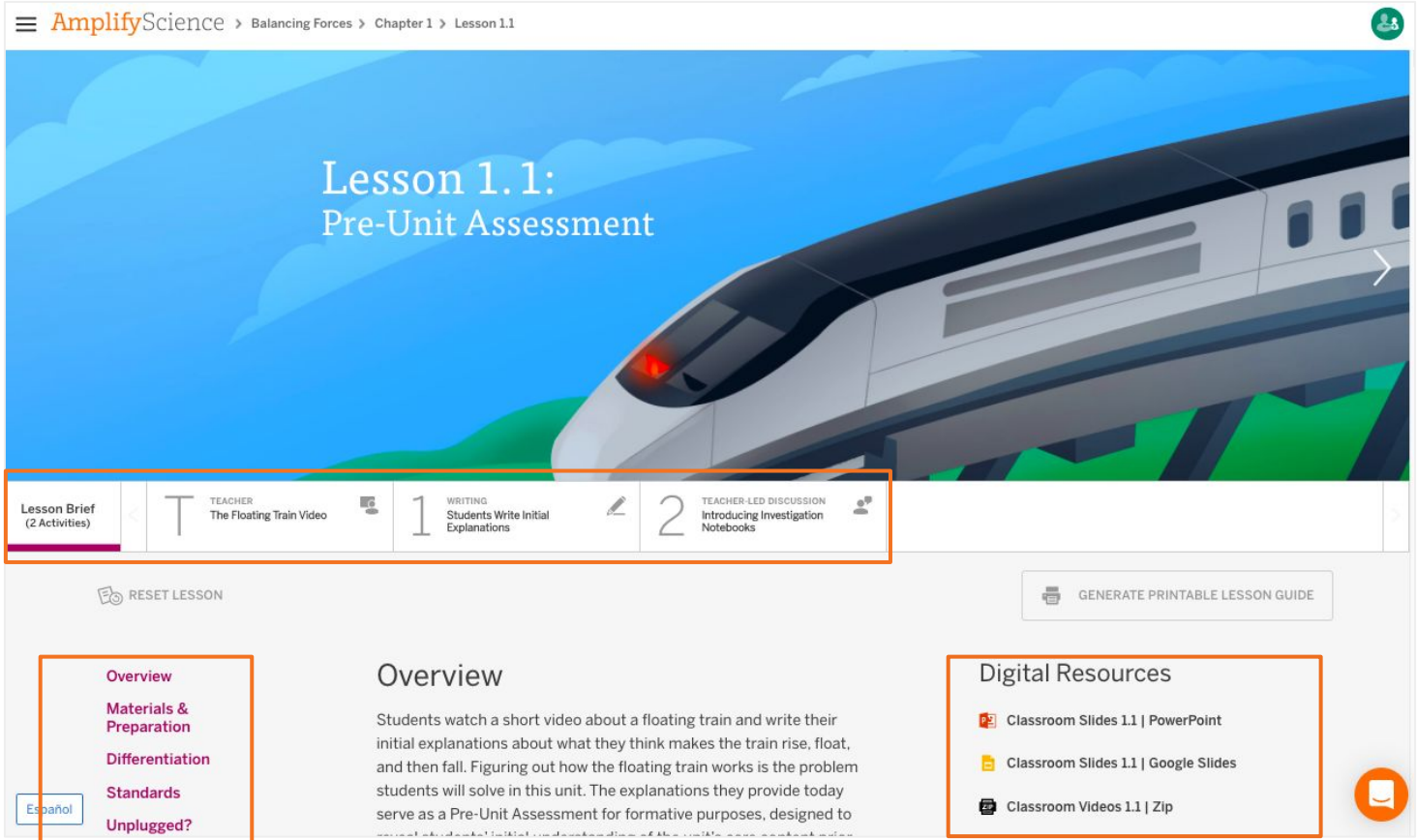
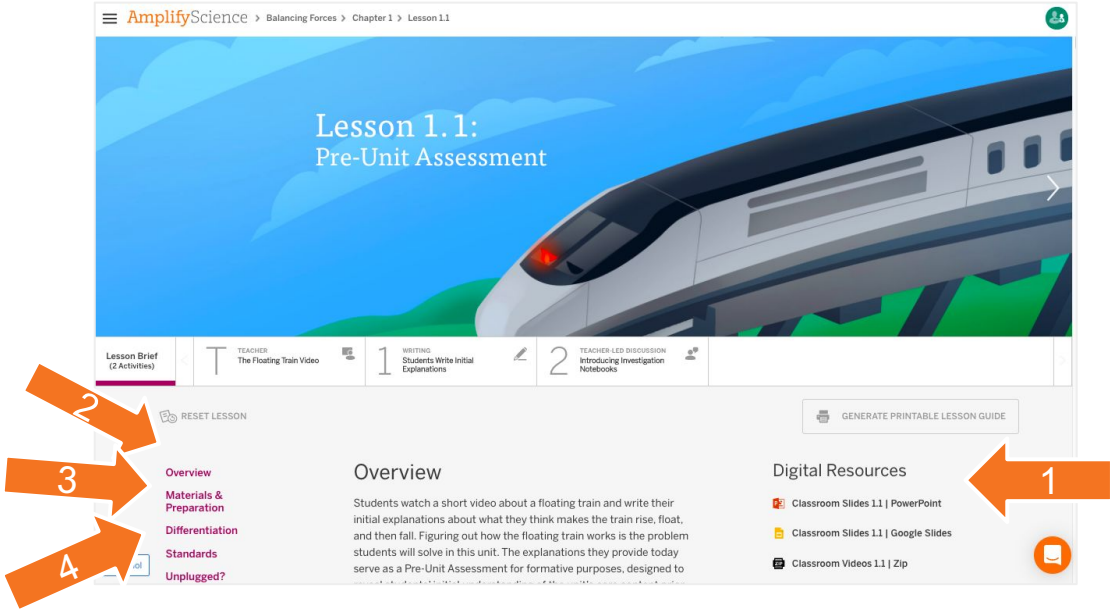
The Lesson Brief



4 Easy Steps to Teaching a lesson

DIRECTIONS:

1. Download the **Classroom Slides** for **Lesson 1.1** and review them.
2. Read the **Overview**.
3. Explore the **Materials & Preparation** document.
4. Read the **Differentiation** document.



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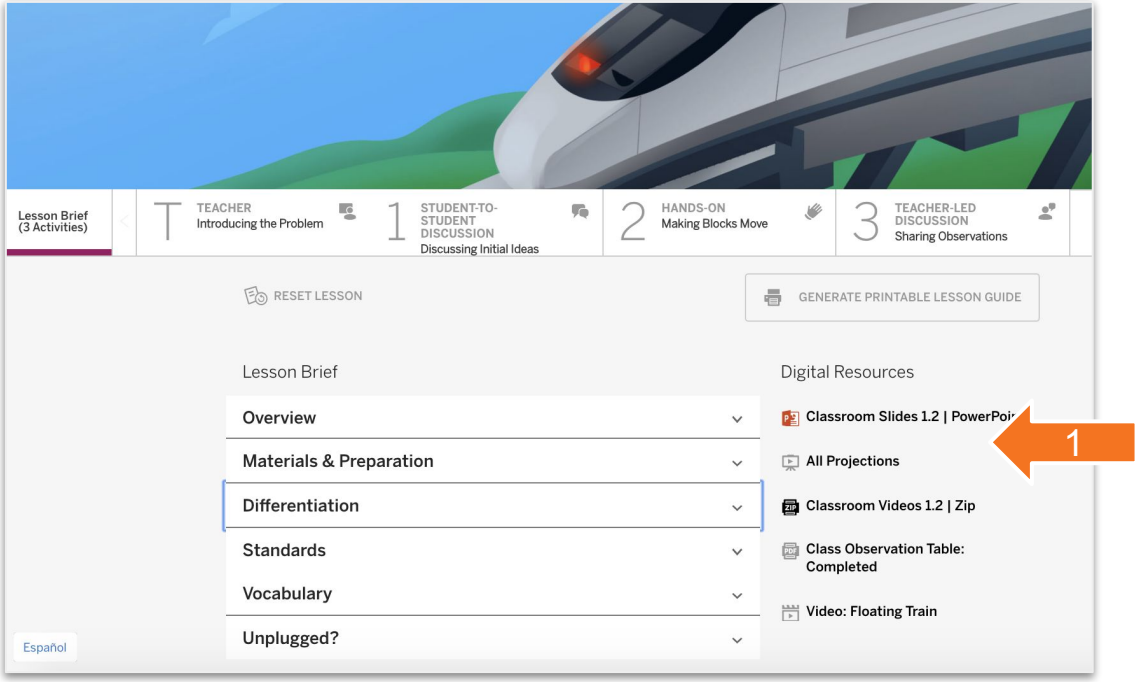
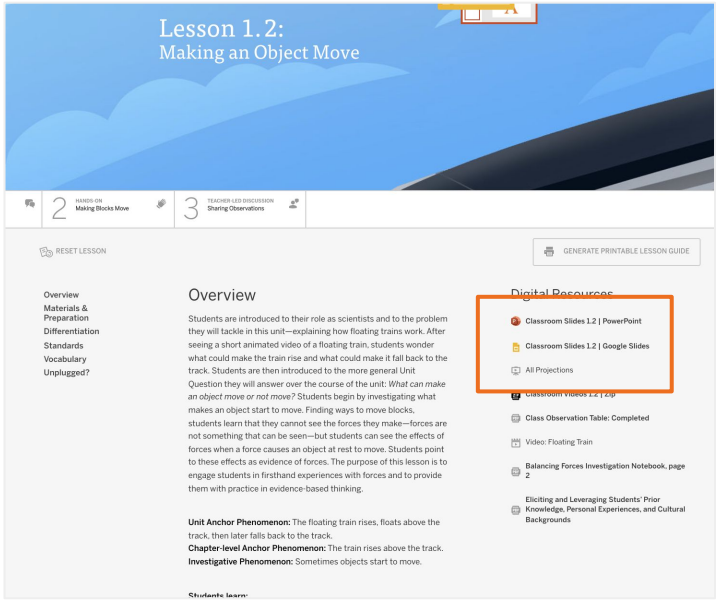


Preparing to teach

Classroom Slides

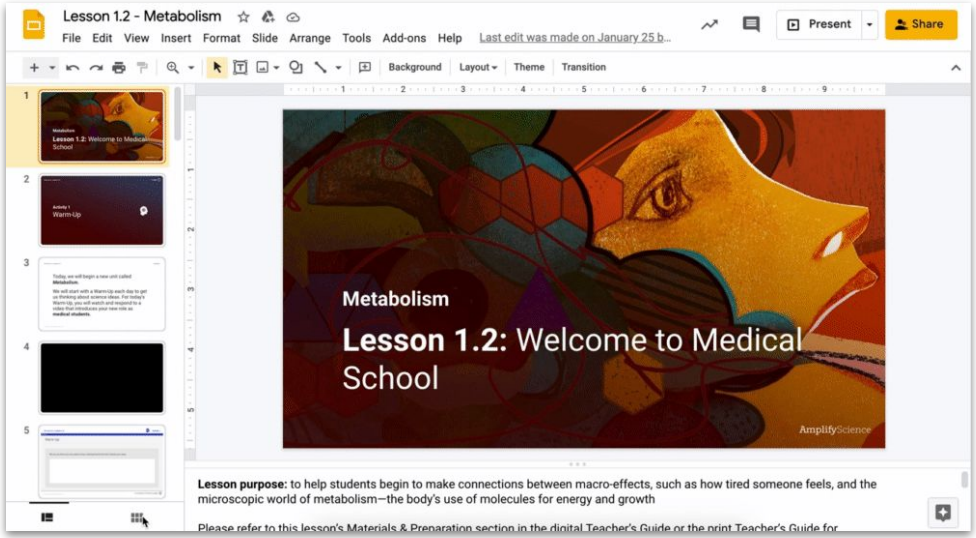
1. Open the **Classroom Slides** under the **Digital Resources** (a lesson of your choice)
2. Read through the Classroom Slides including the **presenter notes** to gain a better understanding of the lesson.
3. **Consider:**
   - What features of the Classroom Slides will support you in teaching this lesson?



Using Classroom Slides as a planning tool

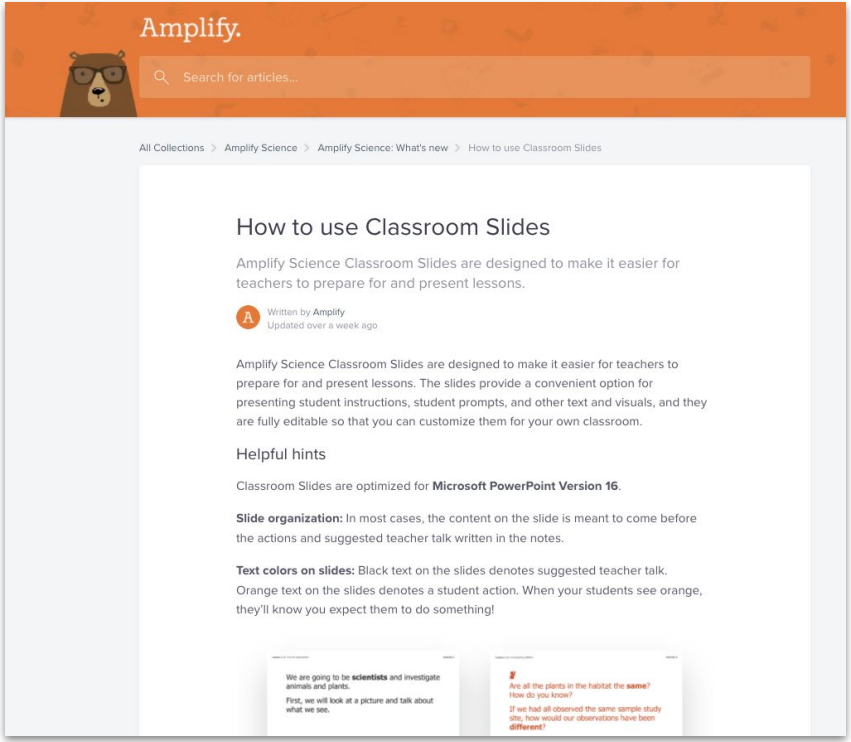
Teacher tip: Classroom Slides are a great visual summary of a lesson. Many teachers download and flip through a lesson's Classroom Slides deck to preview what happens in the lesson.

This is a useful first step for preparing to teach the lesson.



Teaching with Classroom Slides

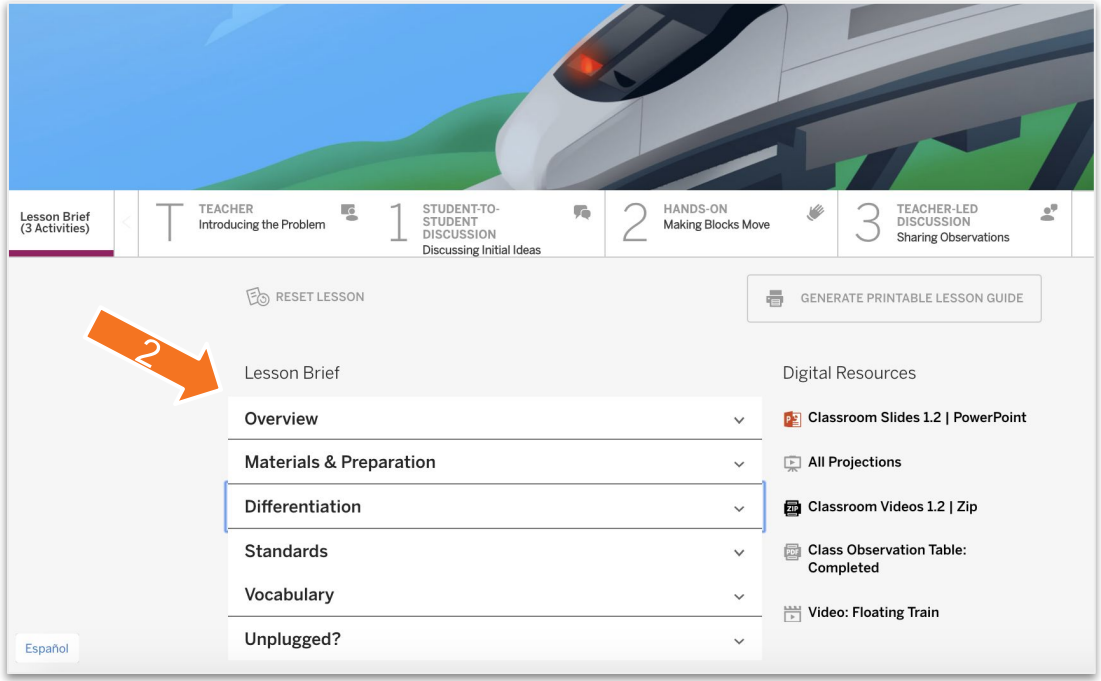
This detailed guide on the Amplify Science Help Site includes tips for teaching with Classroom Slides and information about the different symbols and activity types you'll find in the slide deck.



4 Easy Steps to Teaching a lesson

DIRECTIONS:

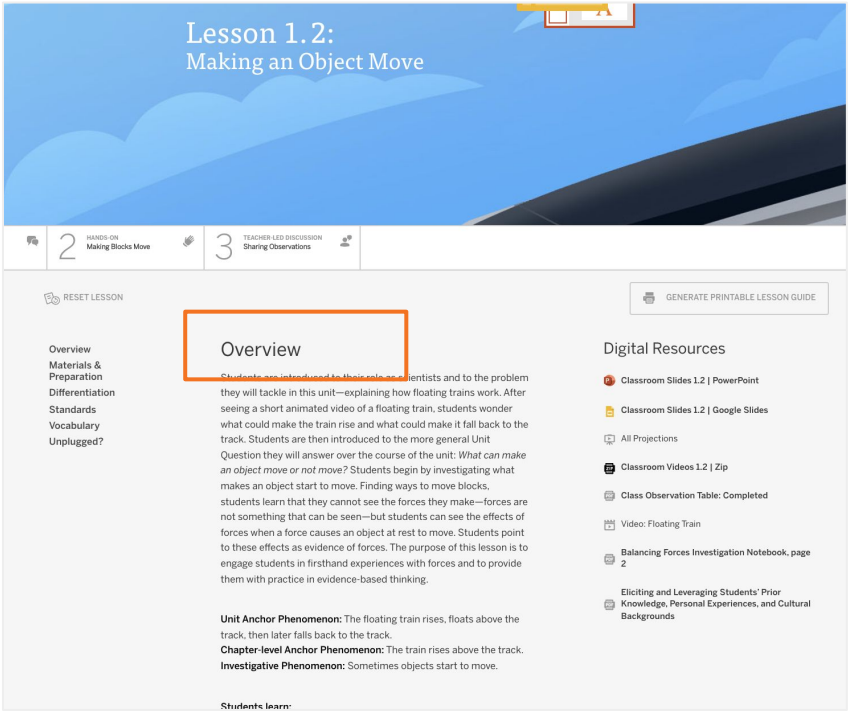
1. Download the **Classroom Slides** for **Lesson 1.2** and review them.
2. Read the **Overview**.
3. Explore the **Materials & Preparation** document.
4. Read the **Differentiation** document.



Preparing to teach

The Overview

- Read through the lesson overview.
- Find the purpose of the lesson.



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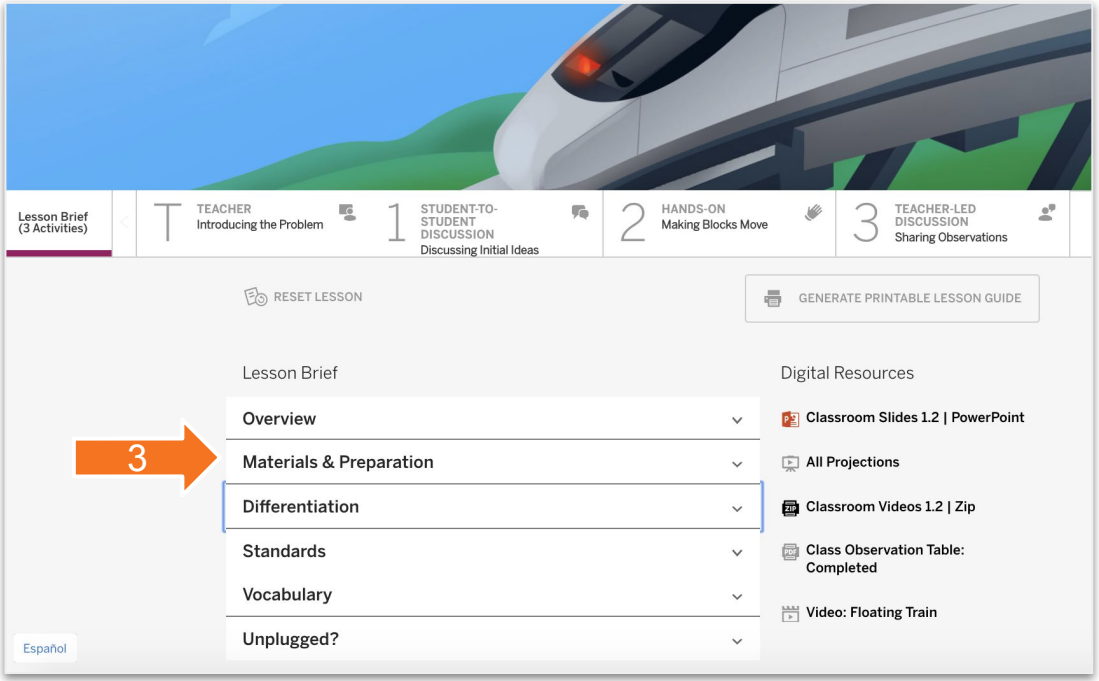
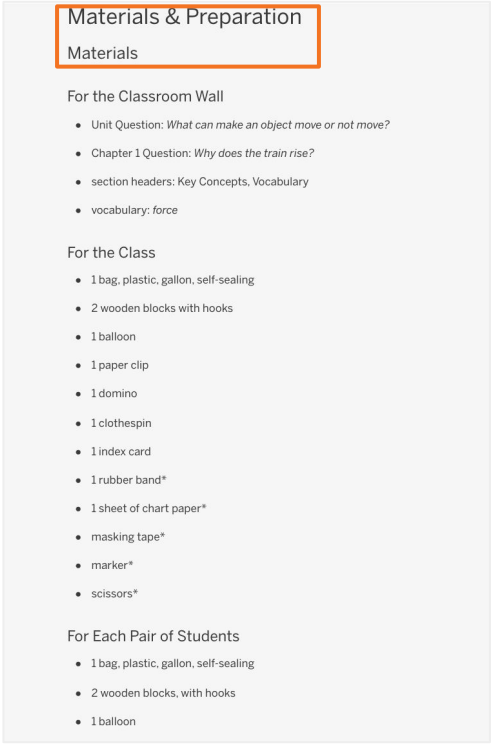


Preparing to teach

Materials and Prep

Review the materials needed for:

- The Classroom Wall
- For the Class
- For each pair of students (if applicable)
- Preparation



Materials & Preparation

Materials

For the Classroom Wall

- Unit Question: *What can make an object move or not move?*
- Chapter 1 Question: *Why does the train rise?*
- section headers: Key Concepts, Vocabulary
- vocabulary: *force*

For the Class

- 1 bag, plastic, gallon, self-sealing
- 2 wooden blocks with hooks
- 1 balloon
- 1 paper clip
- 1 domino
- 1 clothespin
- 1 index card
- 1 rubber band*
- 1 sheet of chart paper*
- masking tape*
- marker*
- scissors*

For Each Pair of Students

- 1 bag, plastic, gallon, self-sealing
- 2 wooden blocks, with hooks
- 1 balloon

4 Easy Steps to Teaching a lesson

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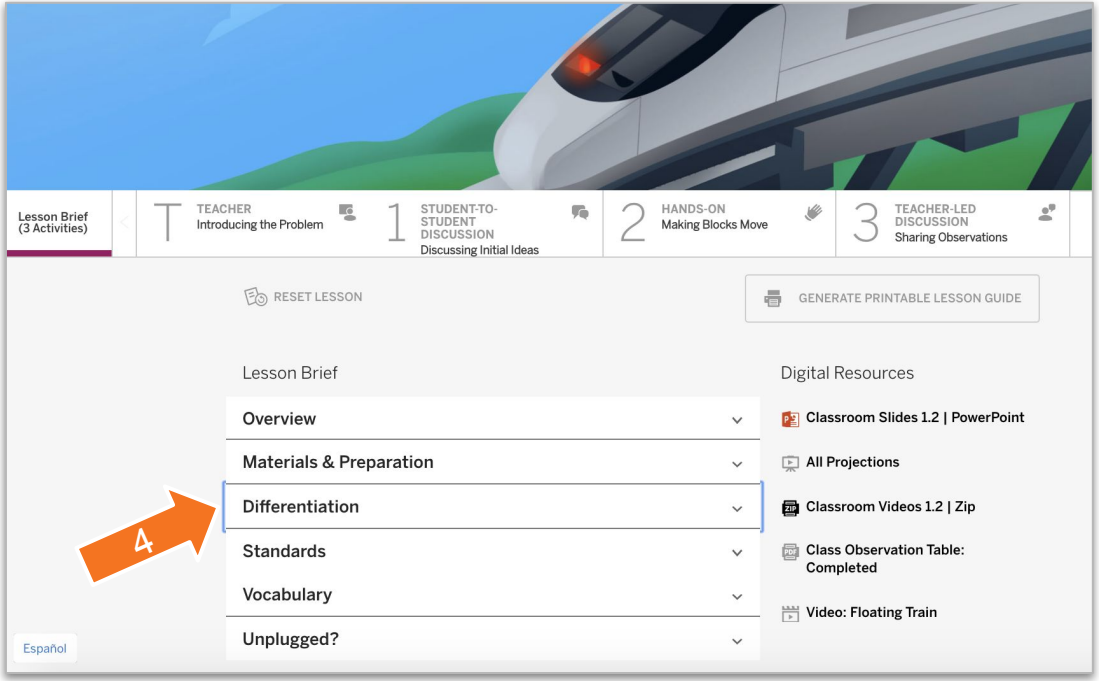
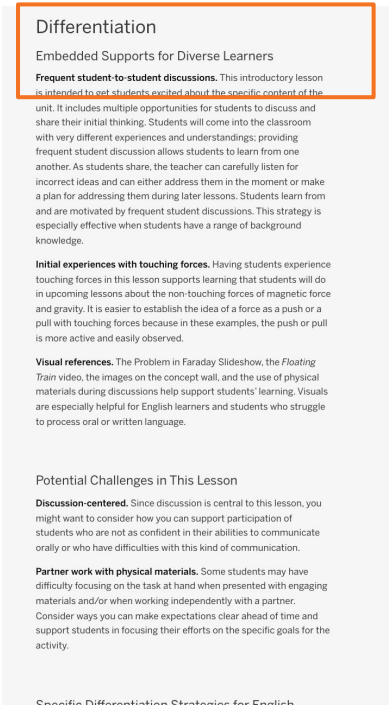


Preparing to Teach

Lesson-specific differentiation

- Embedded supports
- Potential challenges
- Strategies for:
  - English Learners
  - Students who need more support
  - Students who need more challenge



Differentiation

Embedded Supports for Diverse Learners

Frequent student-to-student discussions. This introductory lesson is intended to get students excited about the specific content of the unit. It includes multiple opportunities for students to discuss and share their initial thinking. Students will come into the classroom with very different experiences and understandings; providing frequent student discussion allows students to learn from one another. As students share, the teacher can carefully listen for incorrect ideas and can either address them in the moment or make a plan for addressing them during later lessons. Students learn from and are motivated by frequent student discussions. This strategy is especially effective when students have a range of background knowledge.

Initial experiences with touching forces. Having students experience touching forces in this lesson supports learning that students will do in upcoming lessons about the non-touching forces of magnetic force and gravity. It is easier to establish the idea of a force as a push or a pull with touching forces because in these examples, the push or pull is more active and easily observed.

Visual references. The Problem in Faraday Slideshow, the *Floating Train* video, the images on the concept wall, and the use of physical materials during discussions help support students' learning. Visuals are especially helpful for English learners and students who struggle to process oral or written language.

Potential Challenges in This Lesson

Discussion-centered. Since discussion is central to this lesson, you might want to consider how you can support participation of students who are not as confident in their abilities to communicate orally or who have difficulties with this kind of communication.

Partner work with physical materials. Some students may have difficulty focusing on the task at hand when presented with engaging materials and/or when working independently with a partner. Consider ways you can make expectations clear ahead of time and support students in focusing their efforts on the specific goals for the activity.

Specific Differentiation Strategies for English

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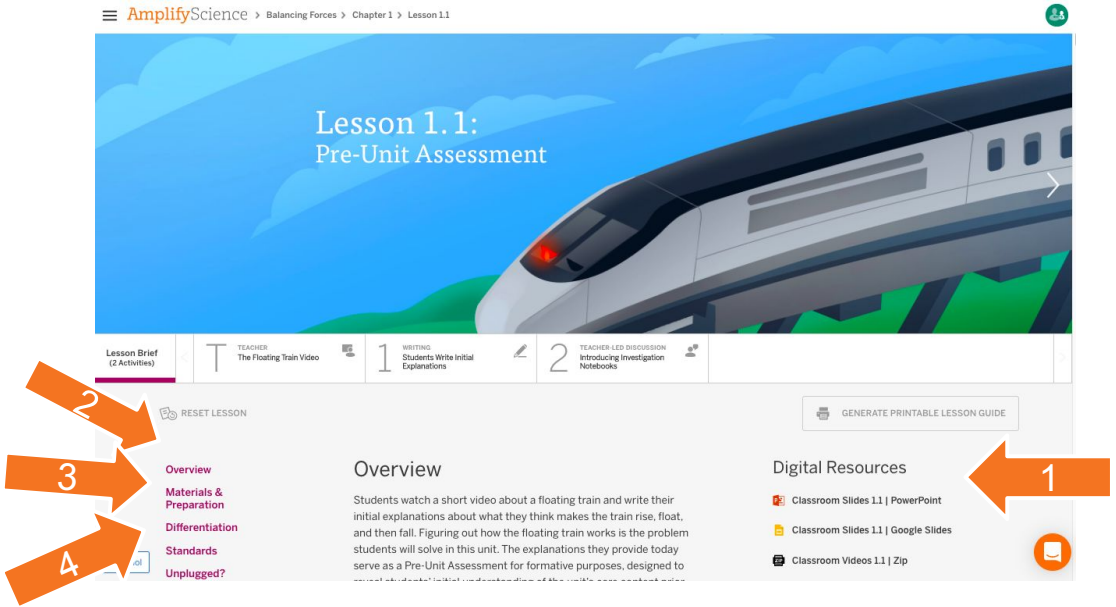
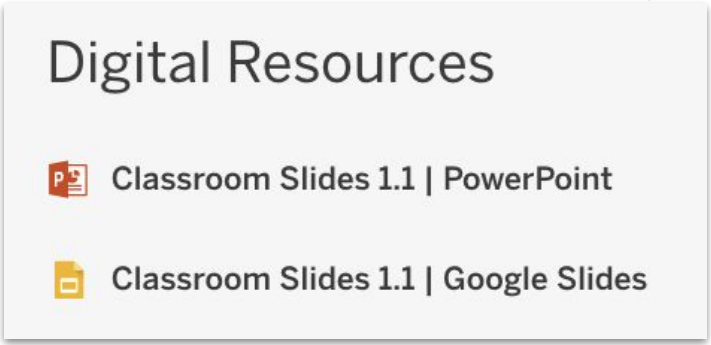


Lesson __	Activity Overview	From the Lesson at a glance in the overview
What is the purpose of this lesson? From the lesson overview	**Activity 1 (##min)**	
What will students learn?	**Activity 2 (##min)**	
3-D Statement (identify SEP, CCC, and DCI): From the lesson standards	**Activity 3 (##min)**	
Student Resources: From the lesson materials and preparation	**Activity 4 (##min)**	
Assessment Opportunities: From the lesson at a glance in the overview or classroom slides	**Activity 5 (##min)**	

Directions for Planning Time

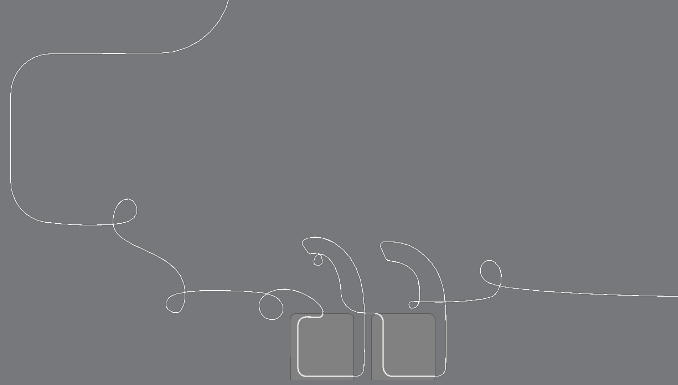
(Make your own copy first before planning)

1. Make a copy of this planning slide.
2. Download the classroom slides for the lesson you would like to plan
3. Insert the planning slide at the front of the classroom slide deck
4. Navigate at the lesson level to answer the questions on this slide
5. Make edits directly on your side deck to meet the needs of your students



Lesson _1.2_	Activity Overview	
What is the purpose of this lesson? The purpose of this lesson is to engage students in firsthand experiences with forces and to provide them with practice in evidence-based thinking	**Activity 1 (10 min)**	Introducing the Problem
What will students learn? Scientists gather information by making observations. Compiling many observations in a table makes it easier to look for patterns. An object can start moving when it is pushed or pulled by another object. This push or pull is called a force.	**Activity 2 (10 min)**	Discussing Initial Ideas
3-D Statement (identify SEP, CCC, and DCI): Students ask questions about the floating train. They plan and conduct investigations to figure out many ways to cause a wooden block to start to move (cause and effect) and learn that these pushes and pulls are called forces.	**Activity 3 (20 min)**	Making Blocks Move
Student Resources: 1 bag, plastic, gallon, self-sealing, 2 wooden blocks, with hooks, 1 balloon, 1 rubber band*, 1 paper clip, 1 domino, 1 clothespin, 1 index card, Investigation Notebook (pg 2)	**Activity 4 (20 min)**	Sharing Observations
Assessment Opportunities: n/a	**Activity 5 (## min)**	

Questions?



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Unit 1, Animal and Plant Defenses

Plan for the day: Part 2

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Additional resources

Welcome, caregivers!

—

We hope you enjoy learning more about Amplify Science and what students are learning in science this year.

Para acceder a este sitio en español haga clic aquí.

Amplify welcomes you and your learner to the Science program for the new school year. We are very excited to

TOP RATED BY EDREPORTS

Grades 6-8

[Caregivers]

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

Welcome to Amplify Science!

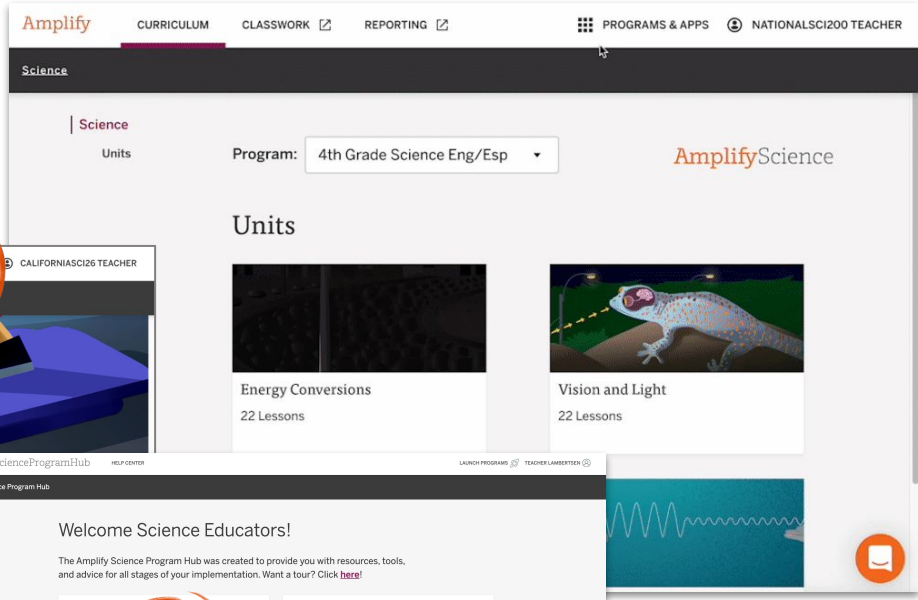
This site contains supporting resources designed for the LAUSD Amplify Science adoption for grades TK–8.

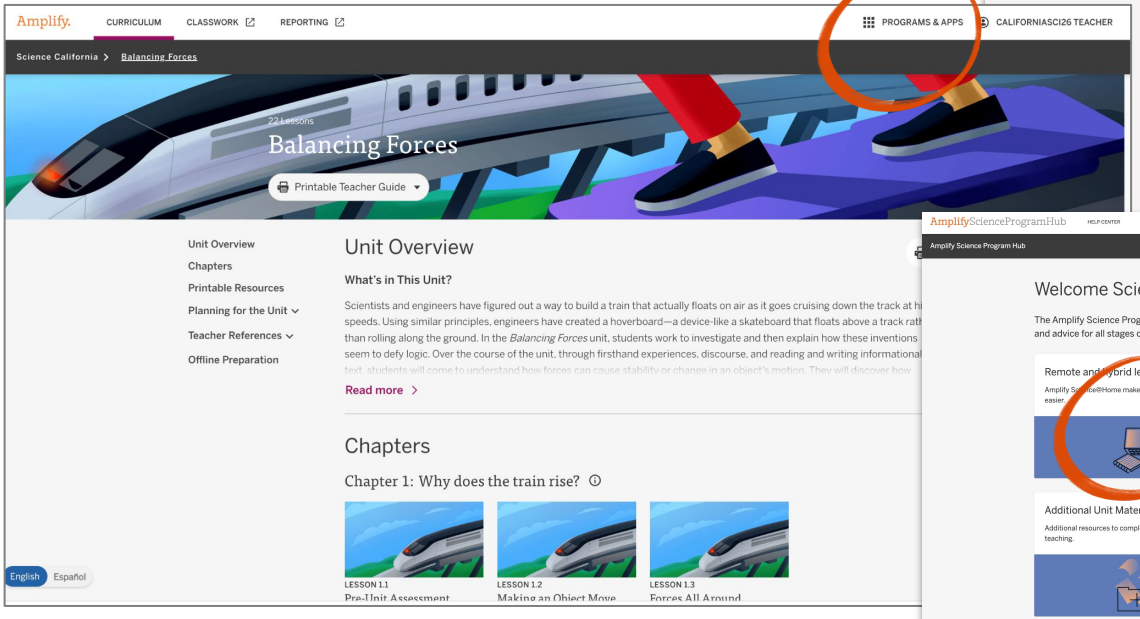
- Access the Amplify Science Program Hub (To help orient you to the new design, watch this video and view this reference guide.)
- Find out more about Amplify Science@Home
- Share the Caregiver Hub (Eng/Span) with your families
- For LAUSD ES Teachers- Amplify Science & Benchmark Advance Crosswalk
- Instructional guidance for a Responsive Relaunch of Amplify Science in 21-22

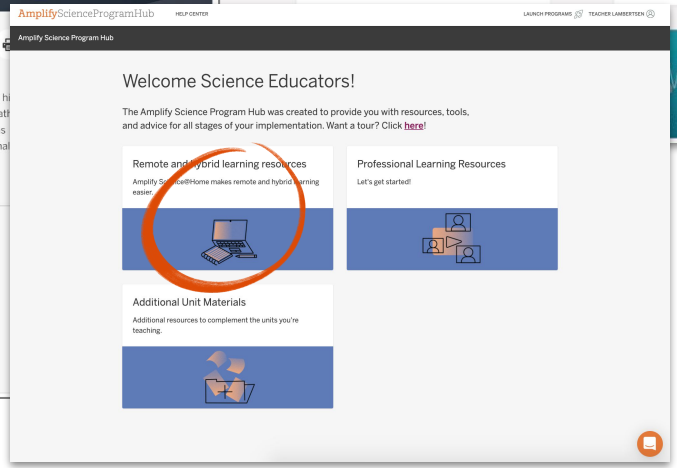
Click the button below to preview the digital Teacher's Guide, and check back for exciting updates to this site!

Program Hub

Use the Amplify Science Program Hub to find useful resources for implementing Amplify Science, including unit overview videos and planning tools.



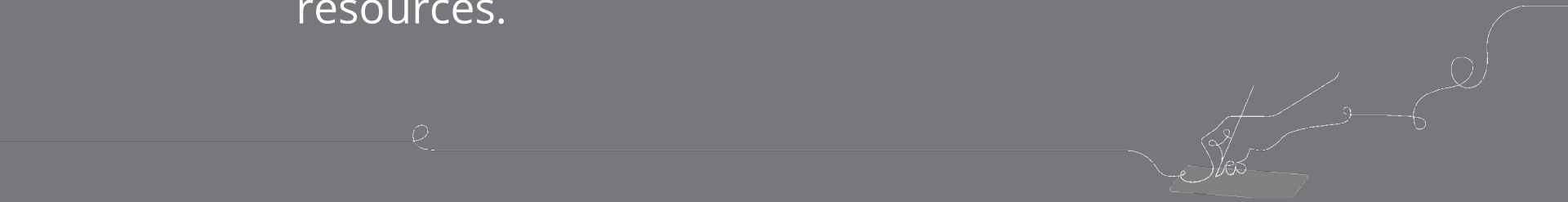




Overarching goals

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

- ✓ Describe what teaching and learning look like in Amplify Science.
- ✓ Prepare to teach using Amplify Science resources.



Closing reflection

Based on our work today in Part 2, share:

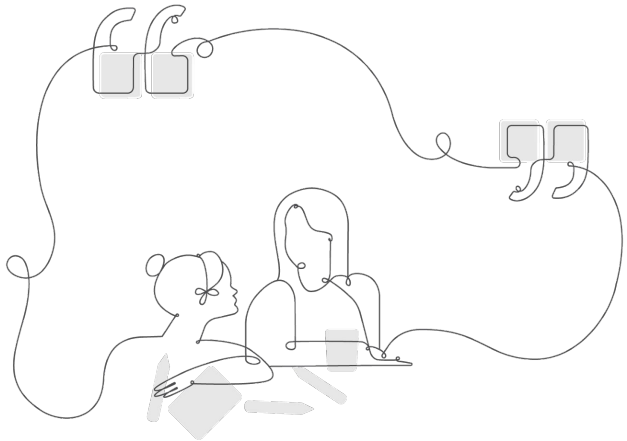
Head: something you'll keep in mind

Heart: something you're feeling

Feet: something you're planning to do

Onsite Upcoming Professional Development!

Part 3: Unit 1 - Supporting English Learners



- October 15th (Alta California ES, NW)
- October 29th (Ochoa Learning Center, East)

In this session, participants explore strategies to support English learners' ability to do, talk, read, write, visualize, and construct arguments like scientists. Participants will identify the supports and strategies embedded in Unit 1 by engaging in model activities followed by independent planning.

Additional resources and ongoing support

Customer Care

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-10PM EST and weekends 10AM-6PM EST.

help@amplify.com

800-823-1969

Amplify Chat

Please provide feedback!

Type:

Strengthen

Session title:

Unit Internalization / Guided Planning

(Part 2)

Professional Learning Specialist name:

Insert name

(insert email, if you would like)