

Amplify Science

Unit 1: Balancing Forces

Getting Ready for Next Year - Planning Support
(with a focus on Science & Engineering Practices)

Grade 3

LAUSD

Date: May 7, 2022

Presented by: James Kochi



James Kochi - Amplify Science Facilitator

Born and raised in Kailua, O'ahu, Hawai'i

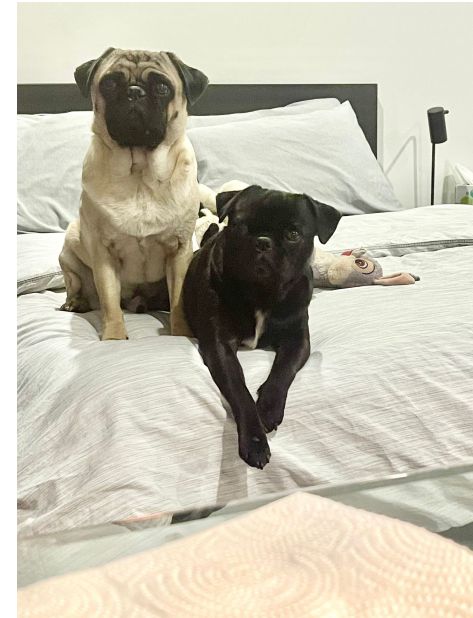
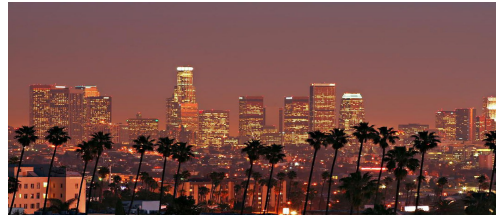
CA State Univ., San Marcos - Molecular Biology

Los Angeles USD for 22+years



Three Beautiful Teenagers

Pug Kids Alfred and Arnold



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.




Last year's Amplify apps.



[About Los Angeles Unified](#) [Find a School](#) [Offices](#) [Classic View](#)


LOS ANGELES UNIFIED SCHOOL DISTRICT



[mCLASS Student](#)

Content Area: ELA
Grade Level: ES
Content Type: Assessment
Integration Type: App (Left Navigation)
Purchase Type: District
[Getting Started Guide](#)
Other Info: App to be installed for all course members.


Vendor Support Desk:
P: 800.823.1969
E: help@amplify.com
S: amplify.com/support/
Textbook Title(s):
NA



[mCLASS Assessment](#)

Content Area: ELA
Grade Level: ES
Content Type: Assessment
Integration Type: App (Left Navigation)
Purchase Type: District
[Getting Started Guide](#)
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[mCLASS Portal](#)


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Textbook Title(s):
NA



LOS ANGELES UNIFIED

COURSES



Course Options

Materials

Updates

Gradebook

Grade Setup

Mastery

Amplify Reading: Teac...

Amplify Science: Eleme...

Amplify Science: Middl...

mCLASS Portal

mCLASS Student



This year's app(s).

LOS ANGELES UNIFIED SCHOOL DISTRICT

COURSES GROUPS RESOURCES TOOLS

[Back to Schoology Home Page](#)

LMS App Center

The LMS App Center provides a catalog of District-approved digital content and learning tools (including digital components of adopted textbooks) that are available for classroom teachers and students to access within the learning management system, Schoology.

For information on District-approval policies and procedures, please visit: [udpp.lausd.net](#).

- To search the full list of digital learning tools, click **"Submit"**.
- To search by Publisher Name or Textbook Title, type in a word associated to your adopted publisher, then click **"Submit"**.
- To narrow your search with filters such as Content Area, Grade Level, or Content Type, select from the dropdown menu, then click **"Submit"**.

To learn more about using the LMS App Center, please refer to the following [video overview](#).

Publisher Name Starts With

Content Area All

Grade Level All

Content Type All

Textbook Title Starts With

Submit

All Amplify Products

Grade Sync for MS Science



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- To narrow your search with filters such as Content Area, Grade Level, or Content Type, select from the dropdown menu, then click **"Submit"**.

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[Search Again](#)

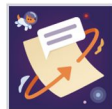
Amplify



Content Area: ELA
Grade Level: ES
Content Type: Supplemental
Integration Type: App (Left Navigation)
Purchase Type: District and School
[Getting Started Guide](#)
Other Info: School licenses required
mCLASS
CKLA
Amplify Reading
Amplify Science
Fractions

Vendor Support Desk:
P: 800.823.1969
E: help@amplify.com
S: amplify.com/support/
Textbook Title(s):
NA

Amplify Classwork



Content Area: ELA
Grade Level: ES
Content Type: Supplemental
Integration Type: App (Left Navigation)
Purchase Type: District and School
[Getting Started Guide](#)
Other Info: School licenses required. This app is for teacher use only (install for Course Admins only)

Vendor Support Desk:
P: 800.823.1969
E: help@amplify.com
S: amplify.com/support/
Textbook Title(s):
NA

 mCLASS Educators: To view or make changes to your account go to mclass.amplify.com.

Hi, Terin

Classes

Programs & Licenses

Account Settings

Help Center 



[CKLA Hub](#)



[CKLA Resource Site](#)



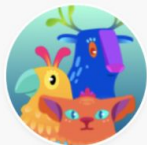
[mCLASS Assessment](#)



[mCLASS Reporting](#)



[Reading 6-8](#)



[Reading K-5](#)



[Science](#)



[Vocabulary](#)



Amplify. on Schoology

2021-2022



Schoology

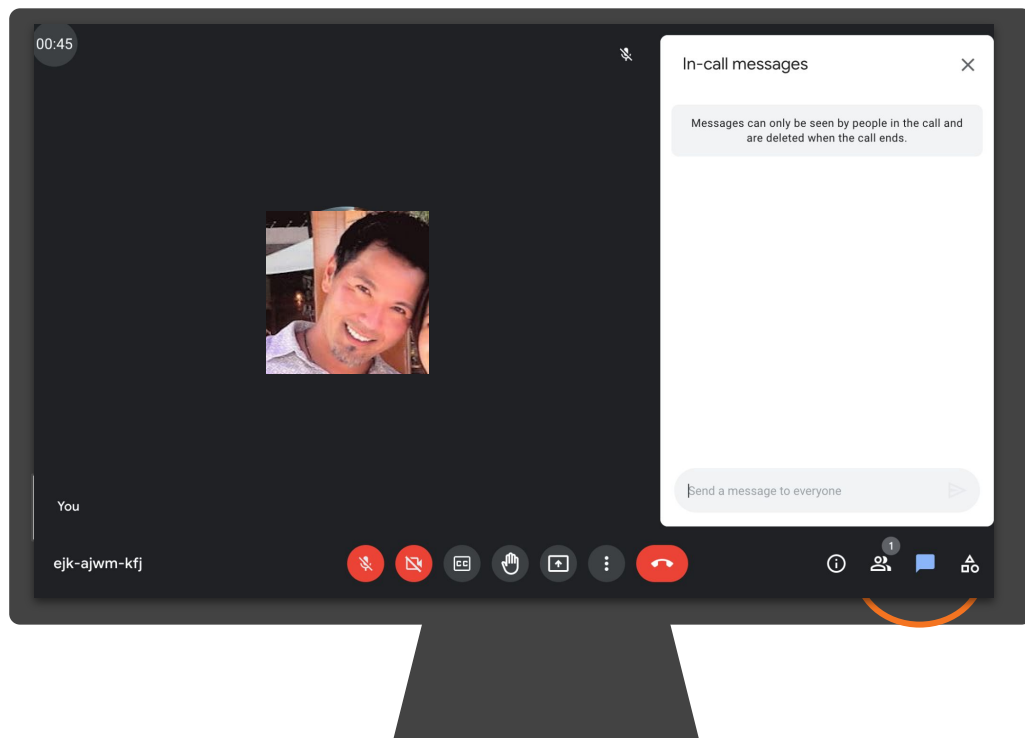
- To join Amplify ES Group: W4PK-W466-63F5B



Ice Breaker!

Who do we have in the room today?

- **Question:** Now that we are coming to the end of this school year, what is one positive experience with your first year of implementing Amplify Science?



Navigation Temperature Check

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

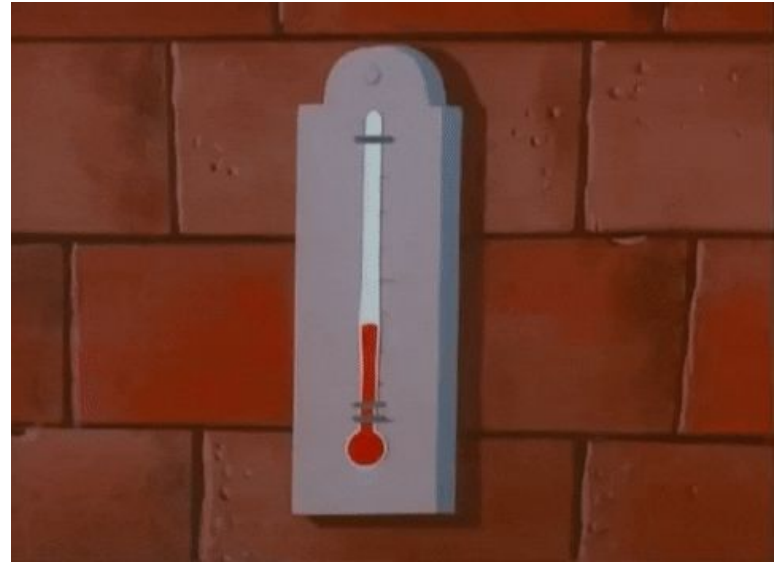
1 = Extremely Uncomfortable

2 = Uncomfortable

3 = Mild

4 = Comfortable

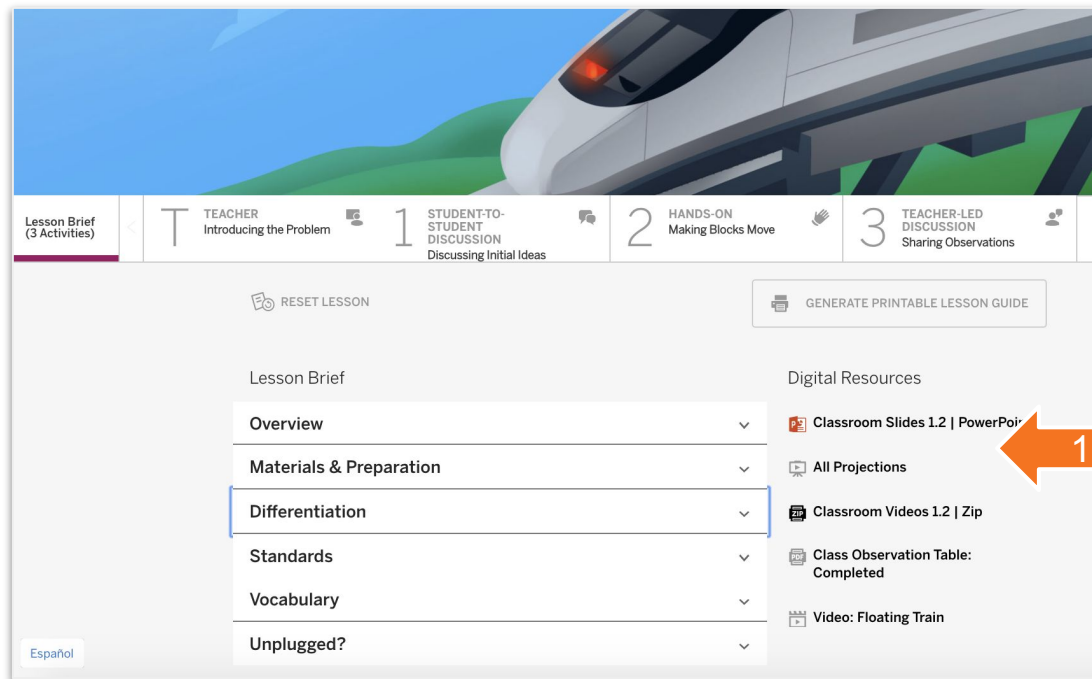
5 = Extremely Comfortable



4 Easy Steps to Teaching a lesson

DIRECTIONS:

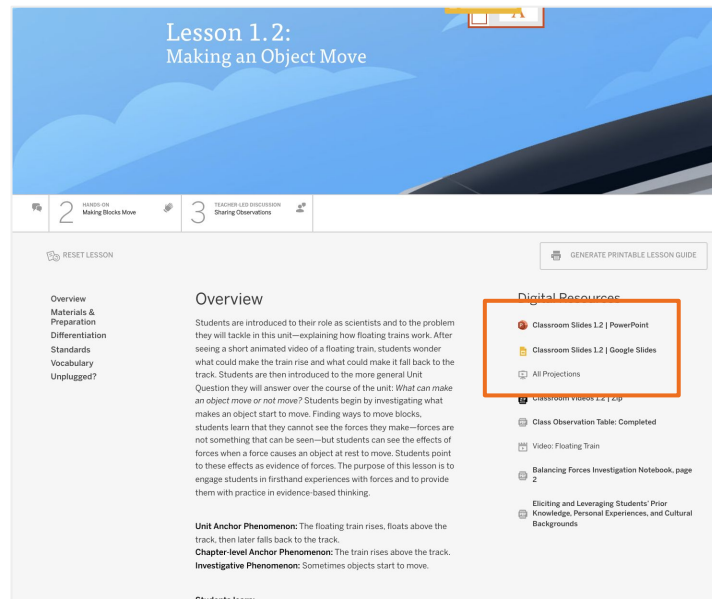
1. Download the **Classroom Slides** for **Lesson 1.1** and review them.
2. Read the **Overview**.
3. Explore the **Materials & Preparation** document.
4. Read the **Differentiation** document.



Preparing to teach

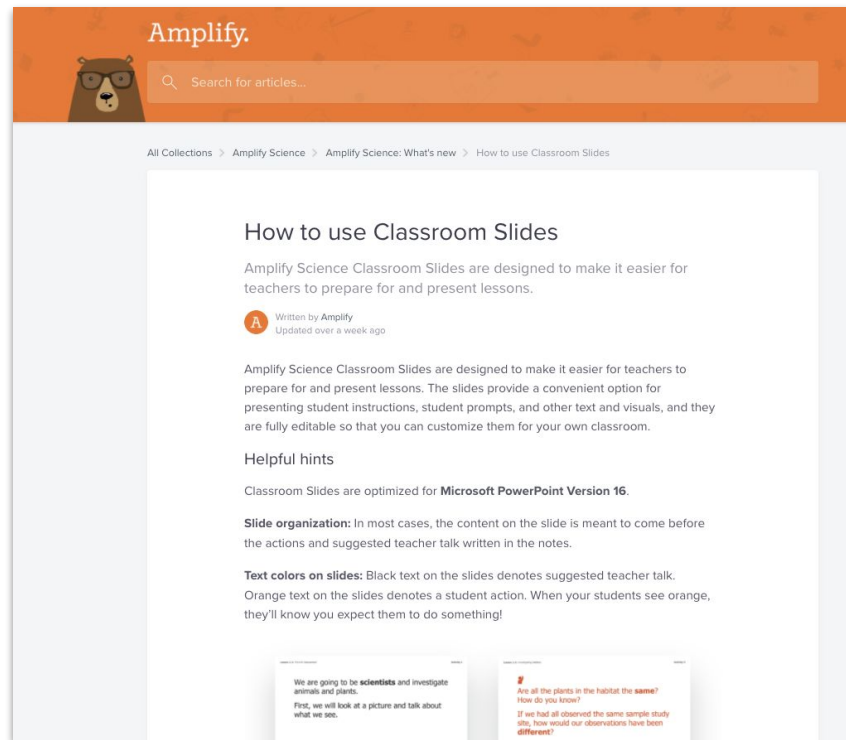
Classroom Slides

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?



Teaching with Classroom Slides

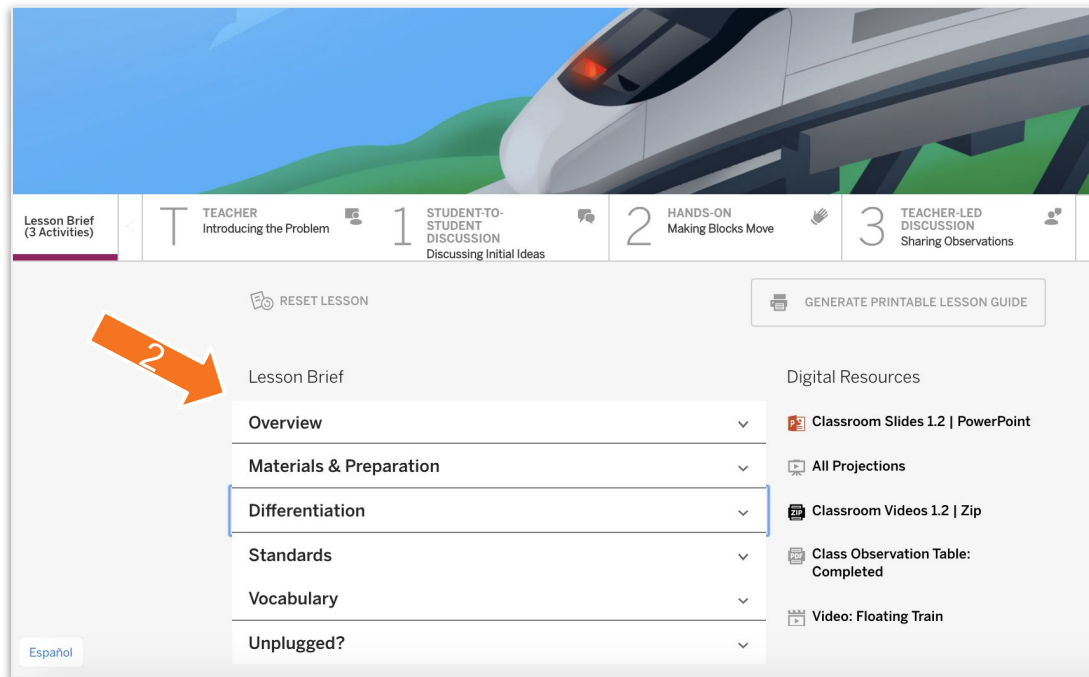
This detailed guide on the Amplify Science Help Site includes tips for teaching with Classroom Slides and information about the different symbols and activity types you'll find in the slide deck.



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.

Lesson 1.2:
Making an Object Move

2 HANDS ON
Making Blocks Move

3 TEACHER-LED DISCUSSION
Sharing Observations

RESET LESSON

Overview
Materials & Preparation
Differentiation
Standards
Vocabulary
Unplugged?

Overview

Students are introduced to their role as scientists and to the problem they will tackle in this unit—explaining how floating trains work. After seeing a short animated video of a floating train, students wonder what could make the train rise and what could make it fall back to the track. Students are then introduced to the more general Unit Question they will answer over the course of the unit: *What can make an object move or not move?* Students begin by investigating what makes an object start to move. Finding ways to move blocks, students learn that they cannot see the forces they make—forces are not something that can be seen—but students can see the effects of forces when a force causes an object at rest to move. Students point to these effects as evidence of forces. The purpose of this lesson is to engage students in firsthand experiences with forces and to provide them with practice in evidence-based thinking.

Unit Anchor Phenomenon: The floating train rises, floats above the track, then later falls back to the track.
Chapter-level Anchor Phenomenon: The train rises above the track.
Investigative Phenomenon: Sometimes objects start to move.

Students learn:

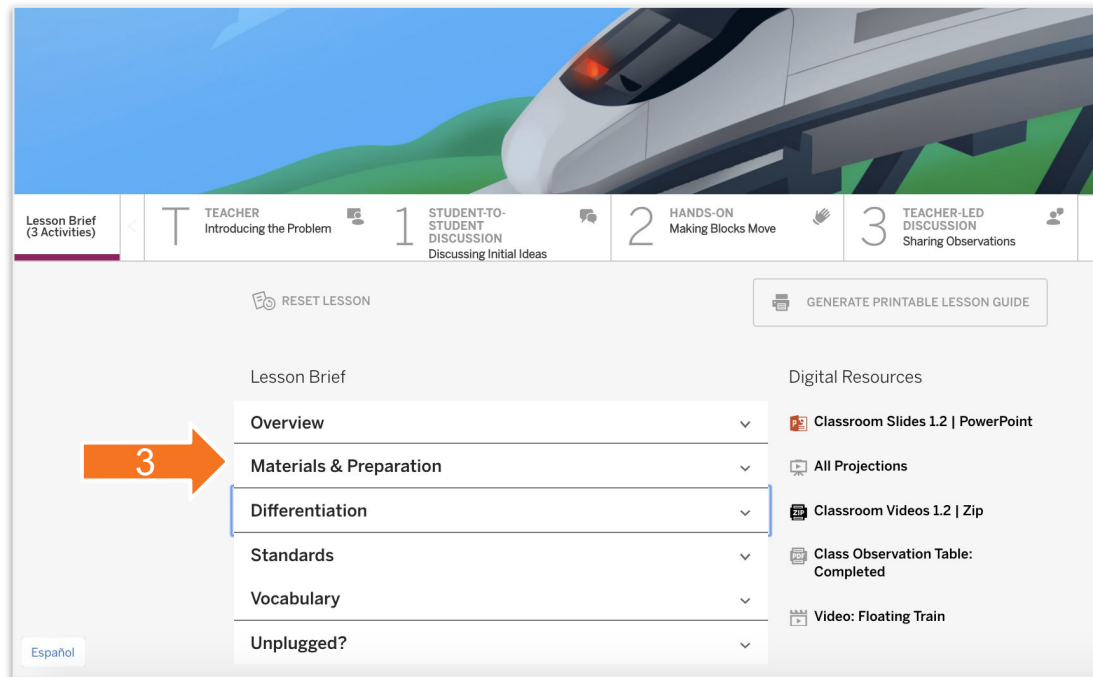
Digital Resources

- Classroom Slides 1.2 | PowerPoint
- Classroom Slides 1.2 | Google Slides
- All Projections
- Classroom Videos 1.2 | Zip
- Class Observation Table: Completed
- Video: Floating Train
- Balancing Forces Investigation Notebook, page 2
- Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds

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.



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

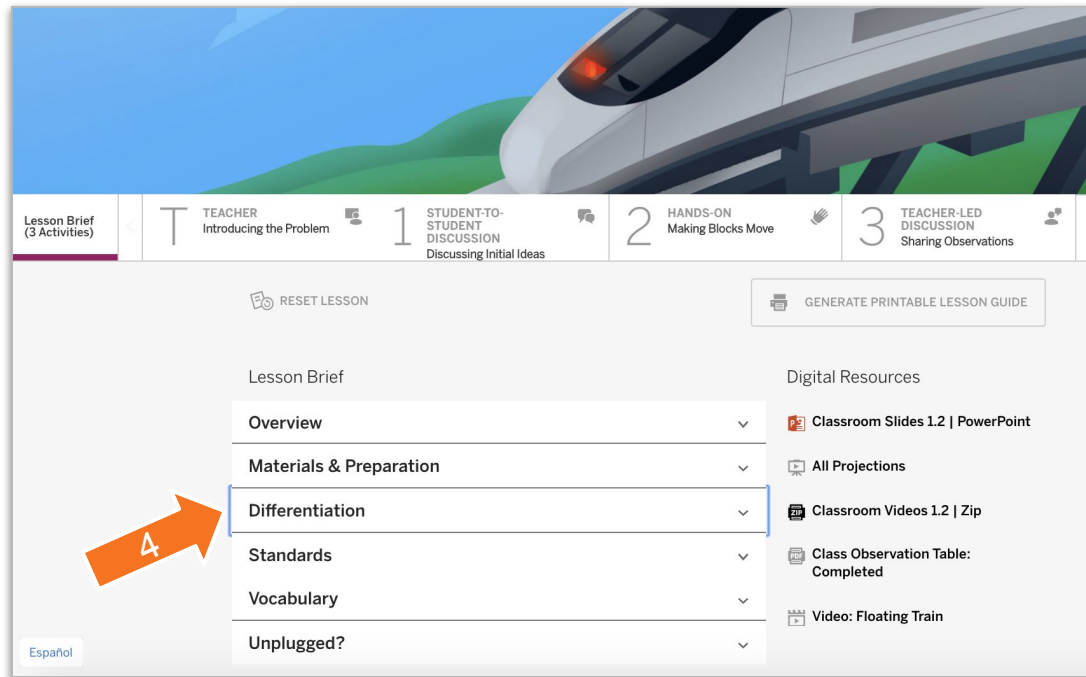
- 1 bag, plastic, gallon, self-sealing
- 2 wooden blocks, with hooks
- 1 balloon

4 Easy Steps to Teaching a lesson



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.



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

4 Easy Steps to Teaching a lesson

DIRECTIONS:

1. Download the **Classroom Slides** for **Lesson 1.1** and review them.
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4. Read the **Differentiation** document.

AmplifyScience > Balancing Forces > Chapter 1 > Lesson 1.1

Lesson 1.1: Pre-Unit Assessment

Lesson Brief (2 Activities) | TEACHER The Floating Train Video | 1 WRITING Students Write Initial Explanations | 2 TEACHER LED DISCUSSION Introducing Investigation Notebooks

RESET LESSON

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

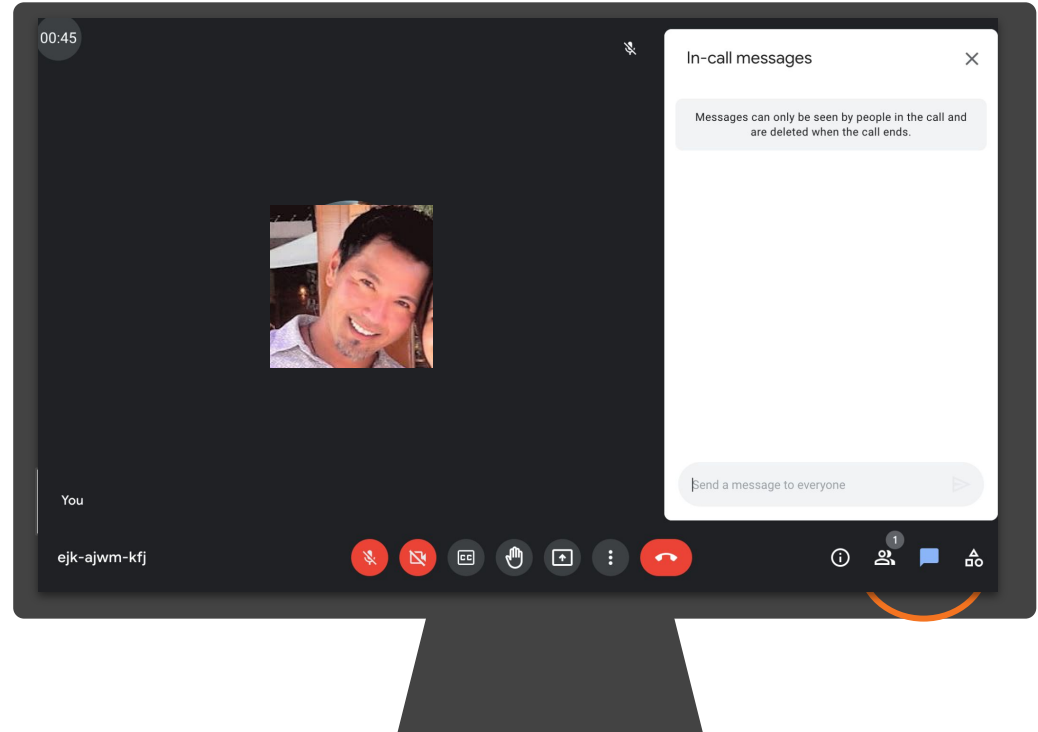
- Classroom Slides 1.1 | PowerPoint
- Classroom Slides 1.1 | Google Slides
- Classroom Videos 1.1 | Zip

GENERATE PRINTABLE LESSON GUIDE

Ice Breaker!

Who do we have in the room today?

Question: In the chat, share one or two of the Science and Engineering Practices in NGSS.





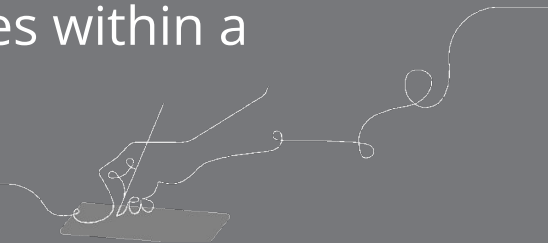
Plan for the day

- Framing and Review
- Introducing the Unit
- Unit Internalization
- Identifying the Science and Engineering Practices (Unit and Chapters)
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing

Overarching goals

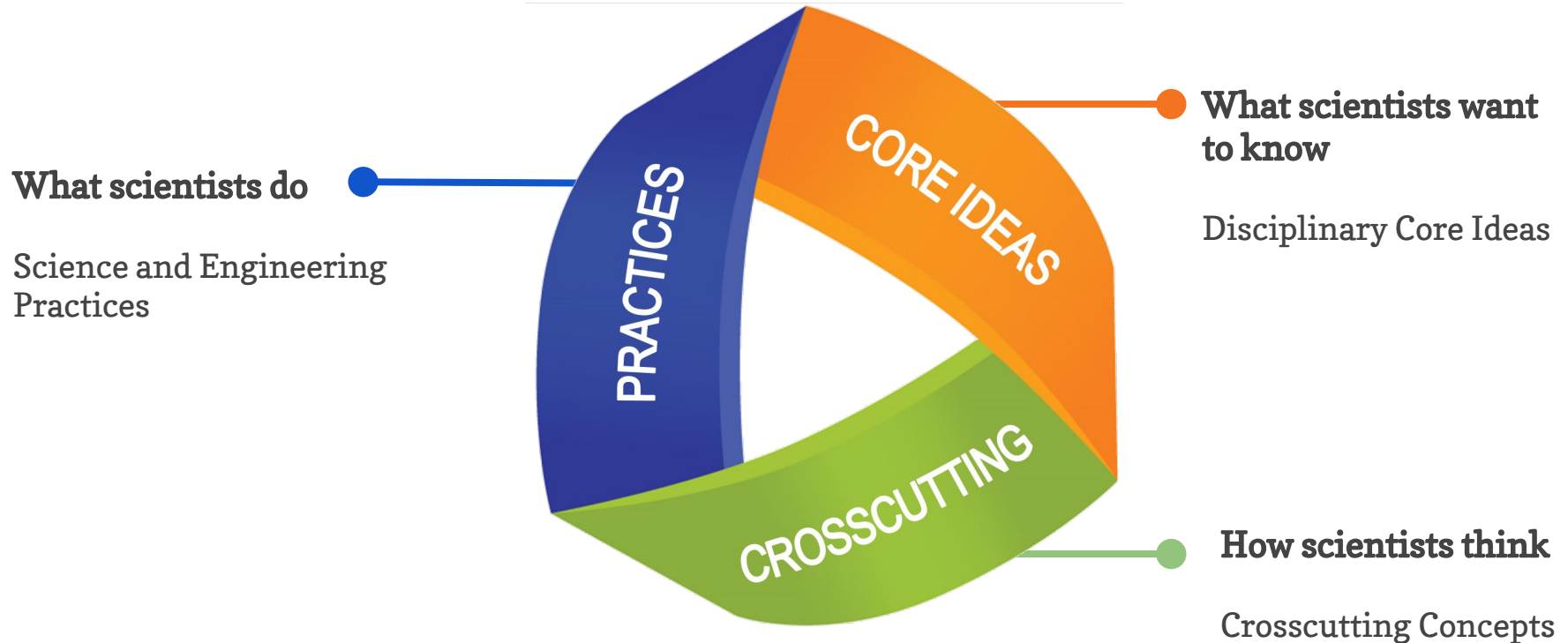
By the end of this workshop, you will be able to:

- ❑ Internalize the unit
- ❑ Identify the Science and Engineering Practices within the unit
- ❑ Identify the Science and Engineering Practices within a lesson and how they are taught.
- ❑ Apply this knowledge to prepare to teach.



Next Generation Science Standards

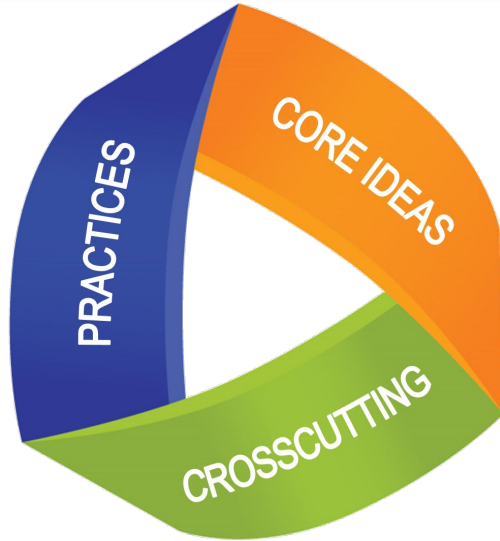
Designed to help students build a cohesive understanding of science



Next Generation Science Standards

Science and Engineering Practices

**“Language
Intensive”**

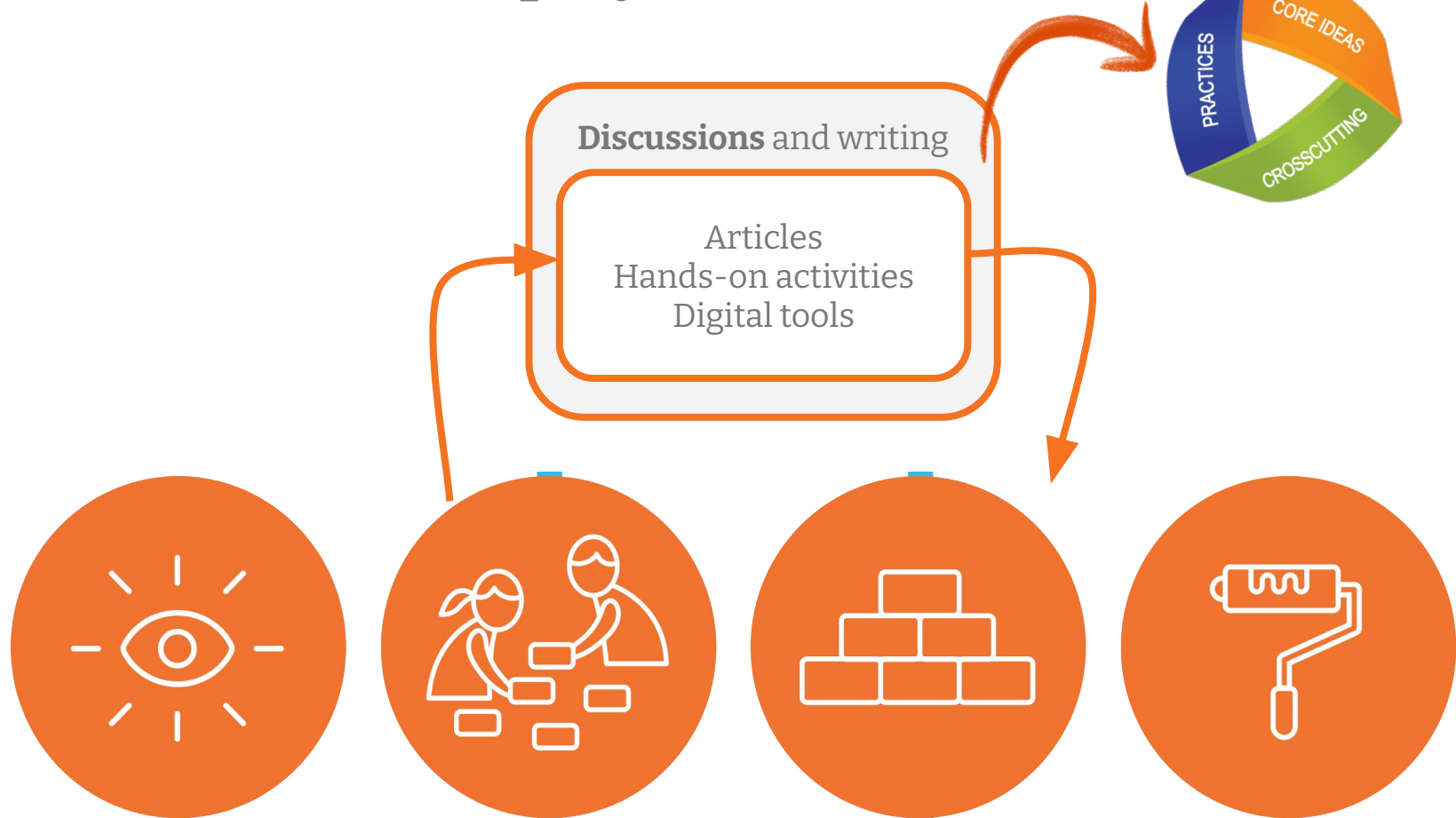


1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Amplify Science Approach



Discourse within Amplify Science



Questions?





Plan for the day

- Framing and Review
- **Introducing the Unit**
- Unit Internalization
- Identifying the Science and Engineering Practices (Unit and Chapters)
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing

A high-speed train, white with a black stripe and a red light, is shown from a side-front perspective, moving along a grey track. The track curves through a green, hilly landscape. The sky is blue with stylized white clouds. The train is the central focus, moving towards the left of the frame.

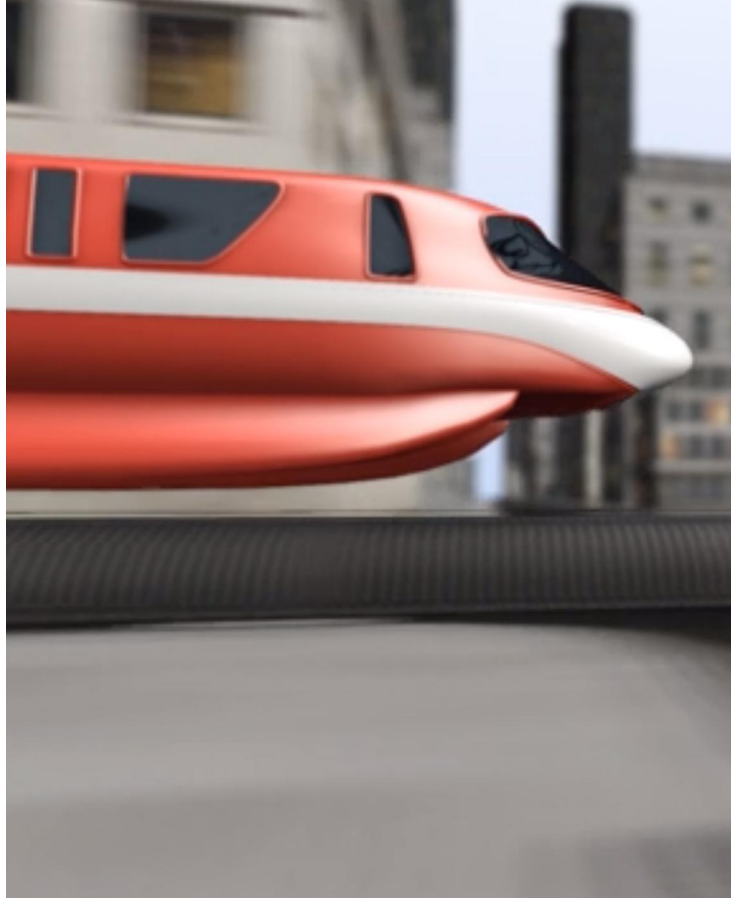
Grade 3 | Balancing Forces

Lesson 1.2: Making an Object Move

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.

Balancing Forces

A stylized illustration of a high-speed train, possibly a Shinkansen, traveling on a track. The train is white with a black stripe and a red light on its nose. It is moving towards the left. The background features rolling green hills and a blue sky with a few clouds. The train is on a grey track that curves through the landscape.

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

Role: Engineer

Balancing Forces

Coherent Storylines



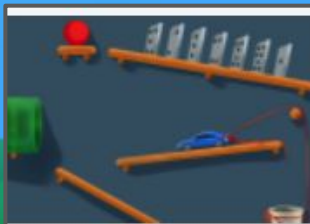
Chapter 1: Why does the train rise?

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

Balancing Forces

Unit Question: What can make an object move or not move?

Explaining the phenomenon: Science Concepts

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

Balancing Forces: Progress Build

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

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.

Level 2

Forces can be touching or non-touching.

Level 1

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

Prior knowledge

Deep, causal understanding

Questions?






Plan for the day


- Framing and Review
- Introducing the Unit
- **Unit Internalization**
- Identifying the Science and Engineering Practices (Unit and Chapters)
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing


Balancing Forces: Unit Page

22 Lessons

Balancing Forces

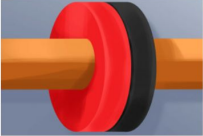
 JUMP DOWN TO UNIT GUIDE

 GENERATE PRINTABLE TEACHER'S GUIDE



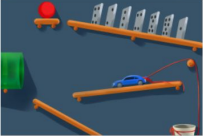
Chapter 1: Why does the train rise?

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



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

Planning for the Unit

- Unit Overview
- Unit Map
- Progress Build
- Getting Ready to Teach
- Materials and Preparation
- Science Background
- Standards at a Glance

Printable Resources

-  3-D Assessment Objectives
-  Coherence Flowcharts
-  Copymaster Compilation
-  Crosscutting Concept Tracker
-  Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds
-  Investigation Notebook

Key Unit Guide Documents for Planning

Planning for the Unit	Printable Resources
Unit Overview	Coherence Flowcharts
Unit Map	Copymaster Compilation
Progress Build	Flextension Compilation
Getting Ready to Teach	Investigation Notebook
Materials and Preparation	Multi-Language Glossary
Science Background	NGSS Information for Parents and Guardians
Standards at a Glance	Print Materials (8.5" x 11")
	Print Materials (11" x 17")
Teacher References	
Lesson Overview Compilation	
Standards and Goals	
3-D Statements	
Assessment System	
Embedded Formative Assessments	
Books in This Unit	
Apps in This Unit	
Flextensions in This Unit	

Offline Preparation

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

[Offline Guide](#)

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?

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

Student Role:

Engineers

Unit Question:

What can make an object move or not move?

Relationship between the Unit Phenomenon and Unit Question:

Students learn how the train floats, falls, and moves and stops.

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

Students figure out that there must be some force acting on the train and another object to make it rise. They also figure out that there are magnetic forces and force from gravity to make the train move.

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

Students are challenged to explain how a floating train works in order to reassure nervous citizens. To solve the mystery, 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 (stability and change).

Questions?

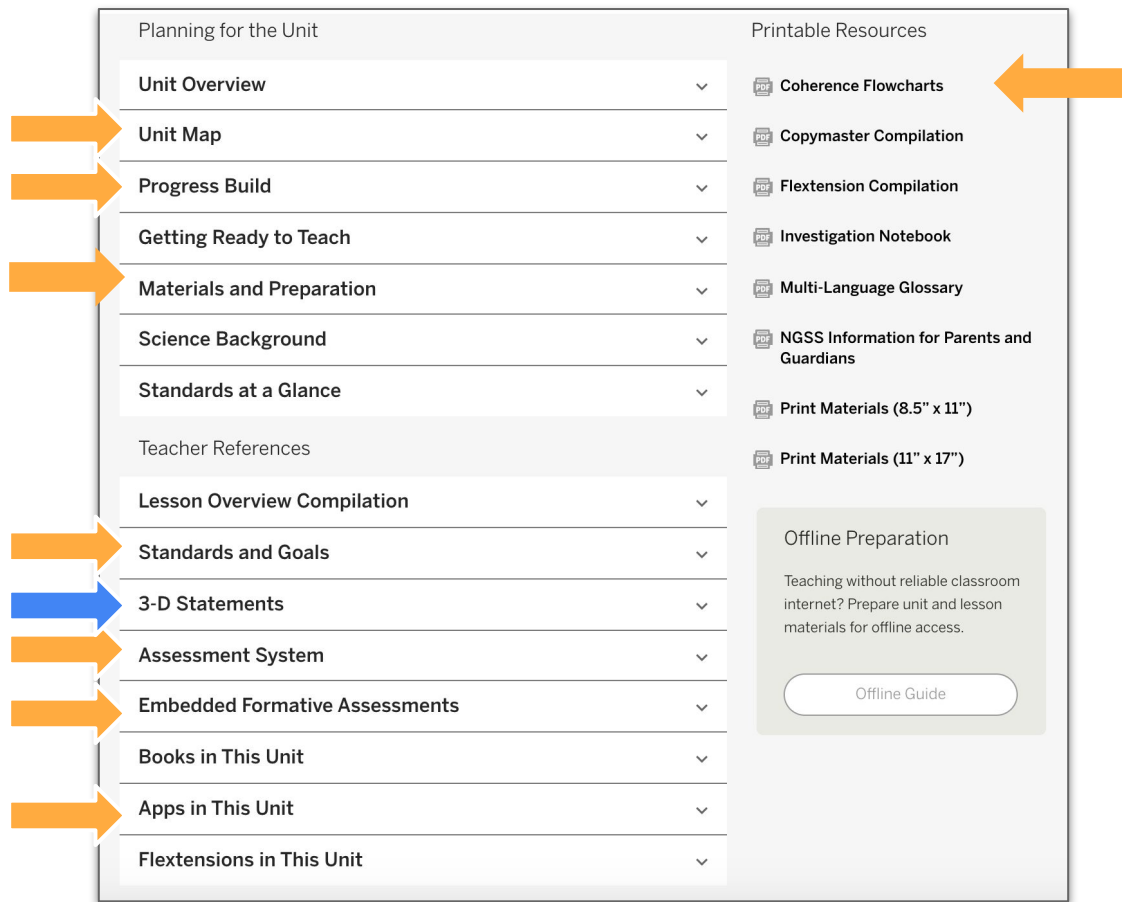




Plan for the day

- Framing and Review
- Introducing the Unit
- Unit Internalization
- Identifying the Science and Engineering Practices (Unit and Chapters)
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing

Key Documents for Planning Work Time



Planning for the Unit	Printable Resources
Unit Overview	Coherence Flowcharts
Unit Map	Copymaster Compilation
Progress Build	Flextension Compilation
Getting Ready to Teach	Investigation Notebook
Materials and Preparation	Multi-Language Glossary
Science Background	NGSS Information for Parents and Guardians
Standards at a Glance	Print Materials (8.5" x 11")
	Print Materials (11" x 17")
Offline Preparation	
Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.	
Offline Guide	

Balancing Forces: Unit Level 3D Statements

Key

Practices

Disciplinary Core Ideas

Crosscutting Concepts

Unit Level

Students are challenged to explain how a floating train works in order to reassure nervous citizens. To solve the mystery, 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 (stability and change).

Balancing Forces: Unit Level 3D Statements

Key

Practices

Disciplinary Core Ideas

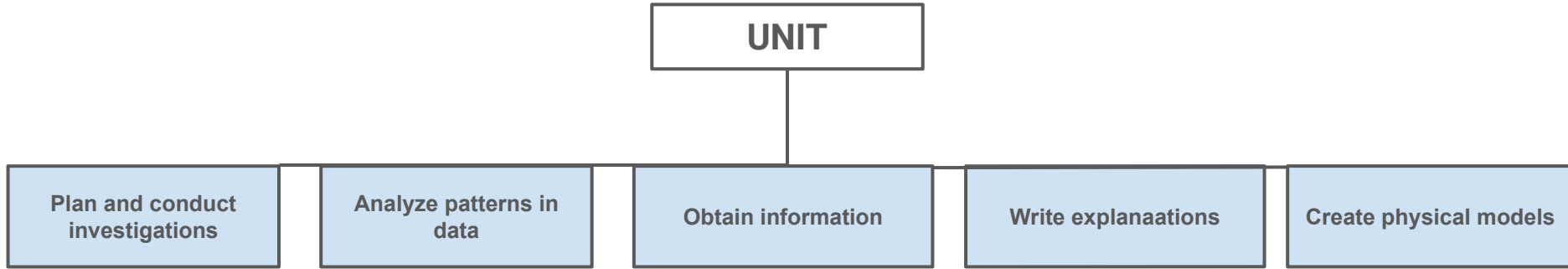
Crosscutting Concepts

Unit Level

Students are challenged to explain how a floating train works in order to reassure nervous citizens. To solve the mystery, 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 (stability and change).

Balancing Forces: Unit Level 3D Statements

Science and Engineering Practices




These are the five Science and Engineering Practices that the students will be engaging with in this unit.





Balancing Forces: Chapter Level 3D Statements


22 Lessons


Balancing Forces


 JUMP DOWN TO UNIT GUIDE


 GENERATE PRINTABLE TEACHER'S GUIDE


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

Balancing Forces: Chapter Level 3D Statments

Chapter 1: Why does the train rise?

Students ask questions about the floating train and discover, by obtaining information from reading how a force can cause an object's motion to change as it starts or stops moving (cause and effect; stability and change). They then communicate this information in an explanation about the floating train.

Balancing Forces: Science & Engineering Practices

Balancing Forces Unit SEP

Plan and conduct
investigations

Analyze patterns
in data

Obtain
Information

Write
explanations

Create Models

Ch. 1: Obtain
information from
reading

Ch.1:
Communicate
information

Ch. 1: Ask
questions


Balancing Forces Chapter 1 Overview

22 Lessons

Balancing Forces


✓ JUMP DOWN TO UNIT GUIDE

GENERATE PRINTABLE TEACHER'S GUIDE




Chapter 1: Why does the train rise?

5 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

Chapter Overview

Students are introduced to a fictional scenario—the citizens of the city of Faraday are excited to hear that a new train service will be built for their city, but they become concerned when they hear that the train will be a floating train. Students are challenged to figure out how the floating train works in order to explain it to the citizens of Faraday. After watching a brief animation of the train, the class begins by investigating the question *Why does the train rise?* Using simple materials, students observe what makes an object start to move. They learn that the pushes and pulls by one object on another are called forces and that a force can make an object start moving. They further investigate forces by reading *Forces All Around*, and discover that when you observe an object start to move or stop moving it is evidence that a force is acting on it. Based on evidence from the book and their hands-on investigations, students conclude that a force acts between two objects. They reflect on their learning about forces by creating a chain reaction and analyzing the forces involved and by writing an explanation as a class of why the train rises—a force must act on it to make it rise. The purpose of this chapter is for students to understand what constitutes evidence of a force acting on an object; discover that a force acts between two objects; and gain initial experience with setting a purpose for investigating and with constructing explanations.

Balancing Forces: Science & Engineering Practices

Balancing Forces Unit SEP

Plan and conduct
investigations

Analyze patterns
in data

Obtain
Information

Write
explanations

Create Models

*Ch. 1: Initial
experience in setting a
purpose for
investigating*

Ch. 1: Obtain
information from
reading

**Ch.1:
Communicate
information**

Ch. 1: Ask
questions

Balancing Forces: Chapter Level 3D Statements

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

Students plan and conduct investigations, obtain information from books, and analyze patterns in data to gather evidence that a magnetic force can cause some objects to move without the magnet touching the object (cause and effect).

Balancing Forces: Science & Engineering Practices

Balancing Forces Unit SEP

Plan and conduct
investigations

Analyze patterns
in data

Obtain
Information

Write
explanations

Create Models

*Ch. 1: Initial
experience in setting a
purpose for
investigating*

Ch. 1: Obtain
information from
reading

**Ch.1:
Communicate
information**

Ch. 1: Ask
questions

Ch. 2: Plan and
conduct
investigations

Ch. 2: Analyze
patterns in data

Ch. 2: Obtain
information from
books

Balancing Forces: Science & Engineering Practices

Chapter Worksheet: Science and Engineering Practices

Unit:

SEP # Chapter #	SEP #1: Plan and conduct investigations	SEP #2: Analyze patterns in data	SEP #3: Obtain Information	SEP #4: Write explanations	SEP #5: Create Models		
Chapter # <u>1</u>							
Chapter #							
Chapter #							
Chapter #							
Chapter #							

3D Statements Chapter Work Time

Identifying **what Science and Engineering Practices** are addressed in each chapter.

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Balancing Forces

3-D Statements

OPEN PRINTABLE 3-D STATEMENTS

Practices

Disciplinary Core Ideas

Crosscutting Concepts

Unit Level

Students are challenged to explain how a floating train works in order to reassure nervous citizens. To solve the mystery, 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 (stability and change).

Chapter Level

Chapter 1: Why does the train rise?

Students ask questions about the floating train and discover, by obtaining information from reading, how a force can cause an object's motion to change as it starts or stops moving (cause and effect; stability and change). They then communicate this information in an explanation about the floating train.

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

Students plan and conduct investigations, obtain information from books, and analyze patterns in data to gather evidence that a magnetic force can cause some objects to move without the magnet touching the object (cause and

Planning for the Unit

Printable Resources

Coherence Flowcharts

Copymaster Compilation

Flexension Compilation

Investigation Notebook

Multi-Language Glossary

NGSS Information for Parents and Guardians

Print Materials (8.5" x 11")

Print Materials (11" x 17")

Offline Preparation

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

Offline Guide

Chapter Worksheet: Science and Engineering Practices

Unit: Balancing Forces

SEP # Chapter #	SEP #1: Plan and conduct investigations	SEP #2: Analyze patterns in data	SEP #3: Obtain Information	SEP #4: Write explanations	SEP #5: Create Models
Chapter # 1			Obtain information from reading	Communicate this information	
Chapter # 2		Analyze patterns in data	Obtain information from books		
Chapter #					
Chapter #					
Chapter #					

3D Statements Chapter Work Time

Identifying **what Science and Engineering Practices** are addressed in each chapter.



CALIFORNIA EDITION > Balancing Forces

3-D Statements

OPEN PRINTABLE 3-D STATEMENTS

Practices Disciplinary Core Ideas Crosscutting Concepts

Unit Level

Students are challenged to explain how a floating train works in order to reassure nervous citizens. To solve the mystery, 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 (stability and change).

Chapter Level

Chapter 1: Why does the train rise?

Students ask questions about the floating train and discover, by obtaining information from reading, how a force can cause an object's motion to change as it starts or stops moving (cause and effect; stability and change). They then communicate this information in an explanation about the floating train.

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

Students plan and conduct investigations, obtain information from books, and analyze patterns in data to gather evidence that a magnetic force can cause some objects to move without the magnet touching the object (cause and

Planning for the Unit

Printable Resources

- Coherence Flowcharts
- Copymaster Compilation
- Flexextension Compilation
- Investigation Notebook
- Multi-Language Glossary
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")
- Print Materials (11" x 17")

Offline Preparation

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

Offline Guide

Balancing Forces: Chapter Level 3D Statements

Chapter 3: Why does the train fall?

Students ask questions about what causes objects to fall, and they write explanations and make models to show how the force of gravity causes the train to fall back to the track (cause and effect).

Balancing Forces: Chapter Level 3D Statements

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

Students gather evidence to support the claim that two forces can act on an object at once. They discover how balanced forces can make an object's motion stable (stability and change) by planning and conducting investigations and obtaining information by reading.

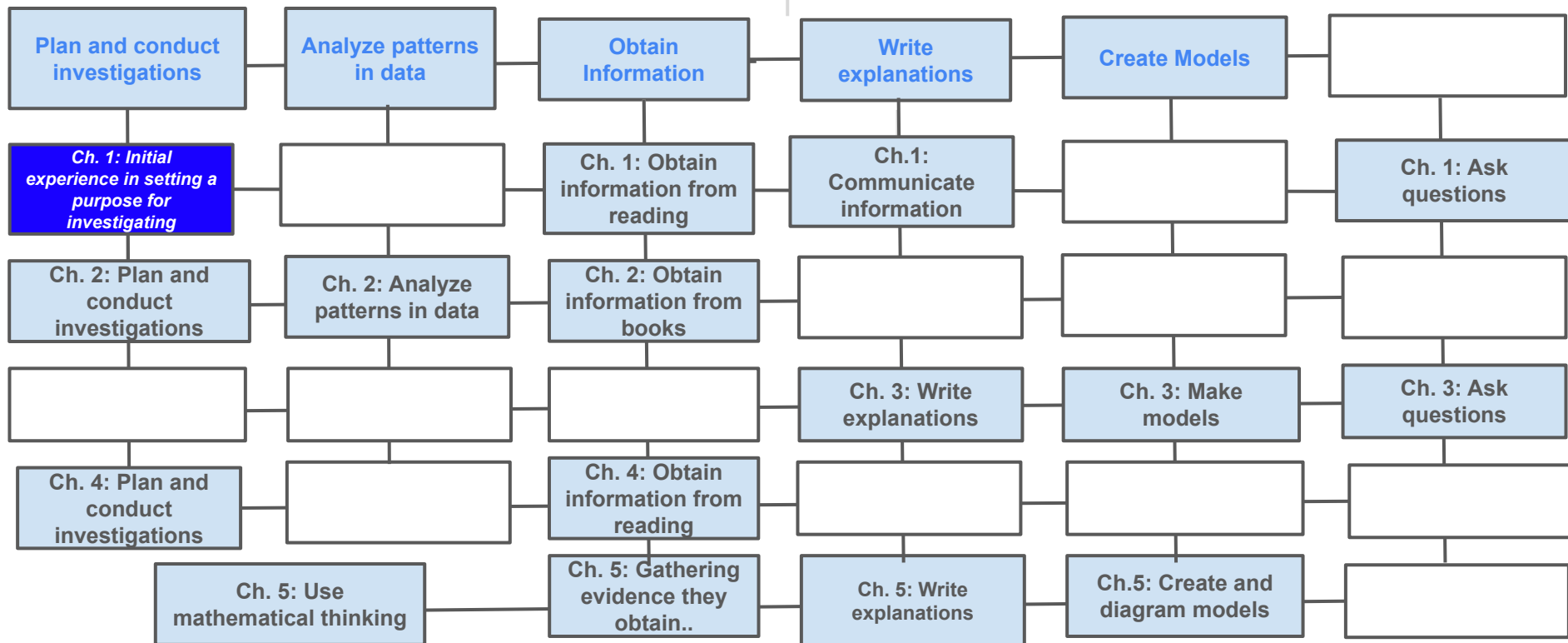
Balancing Forces: Chapter Level 3D Statements

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

Students use mathematical thinking as they measure the distance at which magnetic force on a paper clip no longer balances the force of gravity (stability and change). They gather evidence they obtain by reading and engage in oral argumentation about balanced and unbalanced forces and create final written explanations physical models, and diagram models about the floating train.

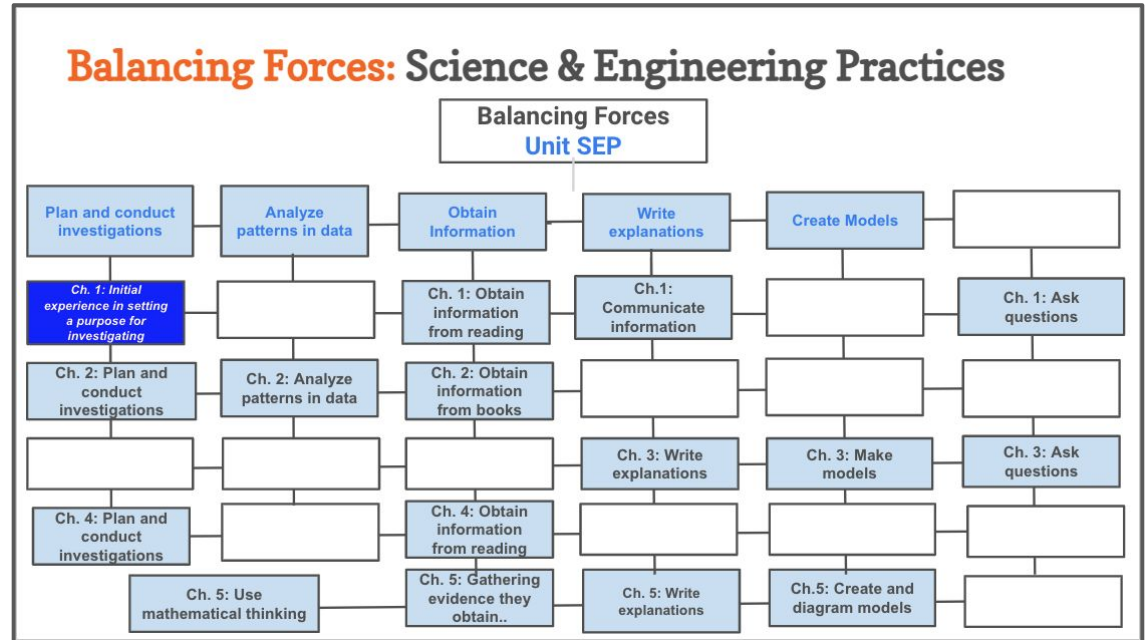
Balancing Forces: Science & Engineering Practices

Balancing Forces Unit SEP

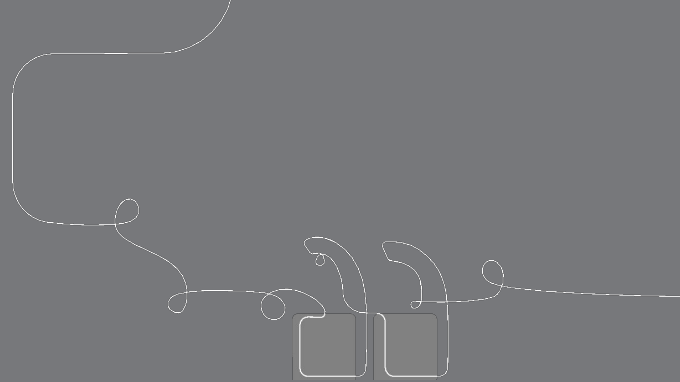


Science & Engineering Practices: Balancing Forces

Building the practices incrementally,
chapter by chapter.



Questions?





Plan for the day

- Framing and Review
- Introducing the Unit
- Unit Internalization
- Identifying the Science and Engineering Practices (Unit and Chapters)
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing

Balancing Forces

Chapter 1: Why does the train rise?

▼ JUMP DOWN TO CHAPTER OVERVIEW

Lesson 1.1:
Pre-Unit Assessment

Lesson 1.2:
Making an Object
Move

Lesson 1.3:
Forces All Around

Lesson 1.4:
Explaining Forces
and the Train

3D Statements, Lesson 1.1

3-D Statement

Key

Practices Disciplinary Core Ideas Crosscutting Concepts

Students write initial explanations about what causes a train to start and stop moving (stability and change) as it rises, floats, and falls back to the tracks.



Grade 3 | Balancing Forces

Lesson 1.1: Pre-Unit Assessment

Activity 1

Students Write Initial Explanations





Write and draw your ideas about why the train rises above the track, floats, and then falls back down.

Weather and Climate

Chapter 1: Why does the train rise?

▼ JUMP DOWN TO CHAPTER OVERVIEW

Lesson 1.1:
Pre-Unit Assessment

Lesson 1.2:
Making an Object
Move

Lesson 1.3:
Forces All Around

Lesson 1.4:
Explaining Forces
and the Train

3D Statements, Lesson 1.2

Key

Practices Disciplinary Core Ideas Crosscutting Concepts

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.

A high-speed train, white with a black stripe and a red light, is shown from a side-front perspective, moving along a grey track. The track curves through a green, hilly landscape. The sky is blue with stylized white clouds. The train is the central focus, moving towards the left of the frame.

Grade 3 | Balancing Forces

Lesson 1.2: Making an Object Move

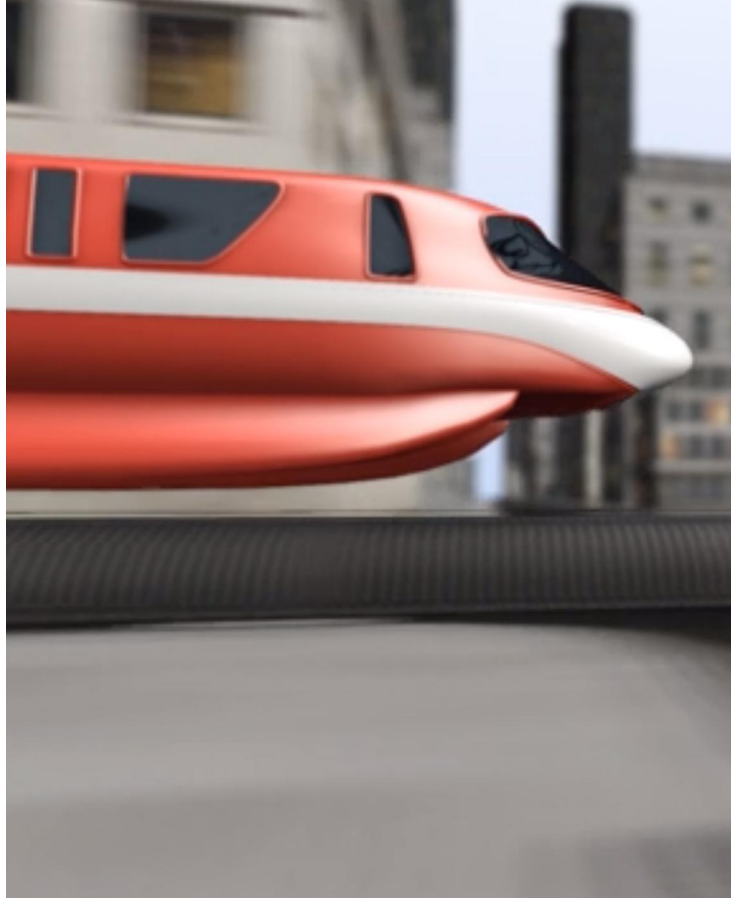
Activity 1

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?

Key

Practices Disciplinary Core Ideas Crosscutting Concepts

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.



Unit Question

What can make an object move or not move?



Chapter 1 Question

Why does the train rise?

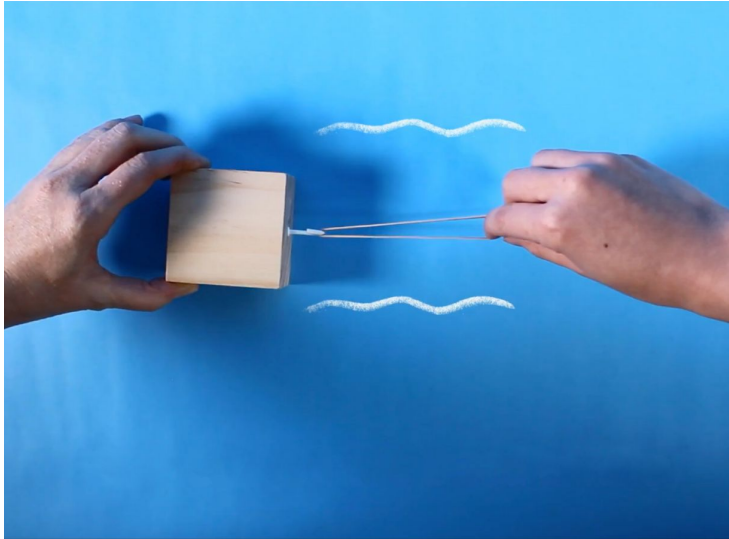
Activity 2

Making Blocks Move



Today, we're going to investigate this question:

What makes an object start to move?



We figured out one way to make the block start to move.



What did you **notice** when the block was let go?

Vocabulary



observe

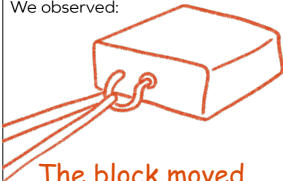
to use any of the five senses to learn more about something

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.

<p>We used <u>a rubber band</u>.</p> <p>We observed:</p>  <p>The block moved forward.</p>	<p>We used _____.</p> <p>We observed:</p>
<p>We used _____.</p> <p>We observed:</p>	<p>We used _____.</p> <p>We observed:</p>

Turn to page 2, Making Blocks Move, in your notebooks.

On this page, we can
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.

Key

Practices Disciplinary Core Ideas Crosscutting Concepts

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

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.

Let’s discuss what we’ll record in each column.

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



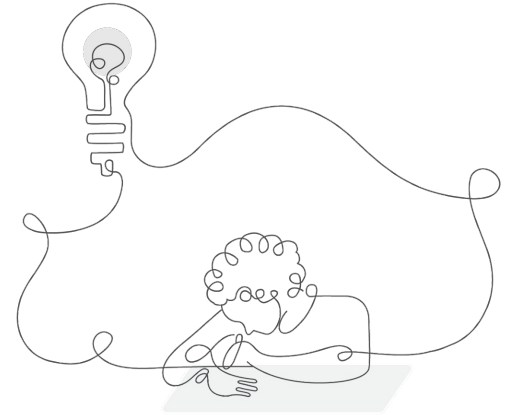
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HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

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Science and Engineering Practices

Describe the science and engineering practices the students were engaged in during this lesson.



Balancing Forces: Science & Engineering Practices

Balancing Forces Unit SEP

Plan and conduct
investigations

Analyze patterns
in data

Obtain
Information

Write
explanations

Create Models

*Ch. 1: Initial
experience in setting a
purpose for
investigating*

Ch. 1: Obtain
information from
reading

**Ch.1:
Communicate
information**

Ch. 1: Ask
questions

Balancing Forces: Science & Engineering Practices

Balancing Forces Unit SEP

Plan and conduct investigations

Analyze patterns in data

Obtain Information

Write explanations

Create Models

Ch. 1: Initial experience in setting a purpose for investigating

Ch. 1: Obtain information from reading

Ch.1: Communicate information

Ch. 1: Ask questions

Lesson 1.2: **What** - Plan and conduct investigations

How - Finding ways to make one of the blocks move.

Lesson 1.2: **What** - Ask questions

How - Ask questions about the floating train.

Balancing Forces Lesson Brief

tyScience

CALIFORNIA EDITION

> Balancing Forces > Lesson 1.2

Overview

Materials & Preparation

Differentiation

Standards

Vocabulary

Unplugged?

Lesson at a Glance

(Teacher Only) **Introducing the Problem** (10 min.)
Learning about the existence of floating trains and being challenged to wonder how floating trains work invites students into their role as scientists.

1: Discussing Initial Ideas (10 min.)
Students access their prior knowledge and pose questions as they wonder how the floating train works.

2: Making Blocks Move (20 min.)
Students gain firsthand experience creating pushes and pulls and observing what makes an object start to move.

3: Sharing Observations (20 min.)
The teacher compiles students' observations on the Class Observation Table, which the class will return to in the next lesson.

Digital Resources

- Classroom Slides 1.2 | PowerPoint
- Classroom Slides 1.2 | Google Slides
- All Projections
- Classroom Videos 1.2 | Zip
- Class Observation Table: Completed
- Video: Floating Train
- Balancing Forces Investigation Notebook, page 2
- Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds

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

Lesson 1.2: Making an Object Move



Lesson Brief (Activities)

T TEACHER
Introducing the Problem

1 STUDENT-TO-STUDENT
DISCUSSION
Discussing Initial Ideas

2 HANDS-ON
Making Blocks Move

3 TEACHER-LED DISCUSSION
Sharing Observations

RESET LESSON

GENERATE PRINTABLE LESSON GUIDE

Overview

Materials & Preparation

Differentiation

Standards

Vocabulary

Unplugged?

Overview

Students are introduced to their role as scientists and to the problem they will tackle in this unit—explaining how floating trains work. After seeing a short animated video of a floating train, students wonder what could make the train rise and what could make it fall back to the track. Students are then introduced to the more general Unit Question they will answer over the course of the unit: *What can make an object move or not move?* Students begin by investigating what makes an object start to move. Finding ways to move blocks, students learn that they cannot see the forces they make—forces are not something that can be seen—but students can see the effects of forces when a force causes an object at rest to move. Students point

Digital Resources

- Classroom Slides 1.2 | PowerPoint
- Classroom Slides 1.2 | Google Slides
- All Projections
- Classroom Videos 1.2 | Zip
- Class Observation Table: Completed

Balancing Forces Classroom Slides

Copy of Lesson 1.2 - Balancing Forces

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Slideshow Motion Theme builder Grid view Zoom Show ruler Guides Snap to Show speaker notes Show filmstrip Show comments Full screen

Balancing Forces

Lesson 1.2: Making an Object Move

AmplifyScience

Lesson purpose: To engage students in firsthand experiences with forces and to provide them with practice in evidence-based thinking

Please refer to this lesson's Materials & Preparation section in the digital Teacher's Guide or the Print Teacher's Guide for

Balancing Forces Classroom Slides-Gride View

Copy of Lesson 1.2 - Balancing Forces ☆ 📁 🔍

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Grade 3 | Balancing Forces
Lesson 1.2: Making an Object Move

1

Activity 1
Discussing Initial Ideas

2

3

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

4

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

5

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.

6

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

7

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

8

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

9

Unit Question
What can make an object move or not move?

10

Chapter 1 Question
Why does the train rise?

11



Plan for the day

- Framing and Review
- Introducing the Unit
- Unit Internalization
- Identifying the Science and Engineering Practices (Unit and Chapters)
- Science and Engineering Practices within a lesson
- **Lesson Planning**
- Closing

3D Statements Lesson Work time

1. Identify **what Science and Engineering Practices** are addressed in each lesson in Chapter One
2. Identify **how the Science and Engineering Practices** are addressed

The screenshot displays the AmplifyScience website interface for the 'Balancing Forces' unit. The top navigation bar includes the AmplifyScience logo and the unit title. The main content area is titled '3-D Statements' and features a sidebar on the right with 'Planning for the Unit' and 'Printable Resources'. The 'Printable Resources' sidebar lists various materials such as 'Coherence Flowcharts', 'Copymaster Compilation', 'Flexextension Compilation', 'Investigation Notebook', 'Multi-Language Glossary', 'NGSS Information for Parents and Guardians', and 'Print Materials (8.5" x 11")' and 'Print Materials (11" x 17")'. The main content area lists lessons with their descriptions and key concepts. An orange arrow points to the 'Lesson Level' section.

3-D Statements

Lesson Level

Lesson 1.1: Pre-Unit Assessment

Students write initial explanations about what causes a train to start and stop moving (stability and change) as it rises, floats, and falls back to the tracks.

Lesson 1.2: Making an Object Move

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.

Lesson 1.3: Forces All Around

Students obtain and evaluate information by reading *Forces All Around*, a book about forces that make objects start or stop moving (stability and change). The class finds patterns in data (patterns) from observations in the book and from their own investigations in the previous lesson.

Lesson 1.4: Explaining Forces and the Train

Students write explanations detailing their understanding that a force must have caused the train to change from not moving to rising up off the track (stability and change; cause and effect).

Lesson 2.1: Discovering Non-Touching Forces

Students plan and conduct investigations to gather evidence about the claim that forces can act between objects that are not touching. Observations of objects changing motion, from not moving to moving (stability and change), serve as their evidence.

Printable Resources

- Coherence Flowcharts
- Copymaster Compilation
- Flexextension Compilation
- Investigation Notebook
- Multi-Language Glossary
- NGSS Information for Parents and Guardians
- Print Materials (8.5" x 11")
- Print Materials (11" x 17")

Offline Preparation

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

Offline Guide

Lesson Worksheet: Science and Engineering Practices

Unit: Balancing Forces

Chapter: 1 Chapter Question: Why does the train rise?

Chapter SEP # Lesson #	SEP #1: Asking questions	SEP #2: Obtaining information from reading	SEP #3: Communicate information	SEP #4: Plan and conduct investigations	SEP #5:
Lesson # 1.1 How:			Write initial explanations Pre-unit Assessment		
Lesson # 1.2 How:	Ask questions Ask questions about the floating train			Plan and conduct investigations Finding ways to make one of the blocks move	
Lesson # 1.3 How:					
Lesson # 1.4 How:					
Lesson# How:					

3D Statements Share Out

Share the **what**
and how of the
Science and
Engineering
Practices
addressed in
each lesson

The screenshot displays the AmplifyScience website interface for the 'Balancing Forces' unit. The main content area is titled '3-D Statements' and includes a link to 'OPEN PRINTABLE 3-D STATEMENTS'. Below this, the 'Lesson Level' is specified as 'Lesson 11: Pre-Unit Assessment'. The 'Lesson 1.1: Pre-Unit Assessment' section describes students writing initial explanations about what causes a train to start and stop moving (stability and change) as it rises, floats, and falls back to the tracks. The 'Lesson 1.2: Making an Object Move' section describes students asking questions about the floating train, planning and conducting 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. The 'Lesson 1.3: Forces All Around' section describes students obtaining and evaluating information by reading Forces All Around, a book about forces that make objects start or stop moving (stability and change). The class finds patterns in data (patterns) from observations in the book and from their own investigations in the previous lesson. The 'Lesson 1.4: Explaining Forces and the Train' section describes students writing explanations detailing their understanding that a force must have caused the train to change from not moving to rising up off the track (stability and change; cause and effect). The 'Lesson 2.1: Discovering Non-Touching Forces' section describes students planning and conducting investigations to gather evidence about the claim that forces can act between objects that are not touching. Observations of objects changing motion, from not moving to moving (stability and change), serve as their evidence.

The sidebar on the right contains a 'Planning for the Unit' section with a dropdown menu. Below this is a 'Print Materials (11" x 17")' section with a dropdown menu. The 'Offline Preparation' section includes a description: 'Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.' and an 'Offline Guide' button. The 'Printable Resources' section lists various resources: Coherence Flowcharts, Copymaster Compilation, Flexension Compilation, Investigation Notebook, Multi-Language Glossary, NGSS Information for Parents and Guardians, Print Materials (8.5" x 11"), and Print Materials (11" x 17").

Lesson Worksheet: Science and Engineering Practices

Unit: Balancing Forces

Chapter: 1 Chapter Question: Why does the train rise?

Chapter SEP # Lesson #	SEP #1: Asking questions	SEP #2: Obtaining information from reading	SEP #3: Communicate information	SEP #4: Plan and conduct investigations	SEP #5: Analyze patterns in data
Lesson # 1.1 How:			Write initial explanations Pre-unit Assessment		
Lesson # 1.2 How:	Ask questions Ask questions about the floating train			Plan and conduct investigations Finding ways to make one of the blocks move	
Lesson # 1.3 How:		Obtain and evaluate information Reading Forces All Around			Find patterns in data Looking at data from Class Observation Table
Lesson # 1.4 How:			Write explanations Write about the floating training		
Lesson# How:					

Standards and Goals

Standards and Goals

OPEN PRINTABLE STANDARDS AND GOALS

- 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Note: Students focus on the disciplinary core ideas represented in this Performance Expectation in the Amplify Science *Environments and Survival*, *Energy Conversions*, and *The Earth System* units. Students make additional connections to the disciplinary core ideas represented in this Performance Expectation in the Amplify Science *Weather and Climate*, *Waves, Energy, and Information*, and *Ecosystem Restoration* units.

Science and Engineering Practices

As with all Amplify Science units, the *Balancing Forces* unit provides students with exposure to most of the eight science and engineering practices described in the NGSS. This unit emphasizes all eight practices (listed below in order of particular emphasis), providing students with explicit instruction and expectations for increasing independence over the course of the unit.

- Practice 2: Developing and Using Models.** Students receive explicit instruction and opportunities to practice developing models: a) with diagrams, to represent the forces acting on the floating train, and b) with physical materials, to show how the floating train might work.
- Practice 6: Constructing Explanations.** Students learn about scientific explanations and have multiple opportunities to write increasingly complex explanations over the course of the unit as they explain why the floating train rises above the track, floats, and then falls back on the track.
- Practice 8: Obtaining, Evaluating, and Communicating Information.** Students receive explicit instruction and have multiple opportunities to use the reading comprehension strategy of *setting a purpose for reading* as they engage with the informational texts in the unit.
- Practice 3: Planning and Carrying Out Investigations.** Just as students focused on using the strategy of setting a purpose for reading

Print Materials (8.5" x 11")


Print Materials (11" x 17")

Offline Preparation

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

Offline Guide


4 Lessons



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

4 Lessons

5 Lessons



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

5 Lessons

4 Lessons

Planning for the Unit

Unit Overview

Unit Map

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Printable Resources

3-D Assessment Objectives

Coherence Flowcharts

Copymaster Compilation

Crosscutting Concept Tracker

Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds

Investigation Notebook

Multi-Language Glossary

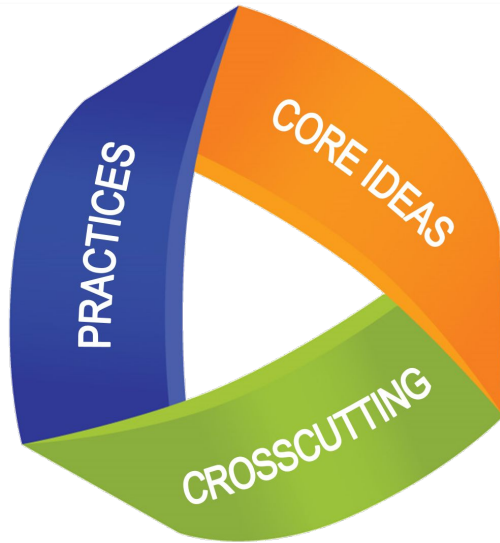
NGSS Information for Parents and Guardians

Print Materials (8.5" x 11")

Print Materials (11" x 17")

Next Generation Science Standards

Science and Engineering Practices



- ①. Asking questions (for science) and defining problems (for engineering) Ch. 1, 3
- ②. Developing and using models Ch. 3
- ③. Planning and carrying out investigations Ch.2, 4
- ④. Analyzing and interpreting data Ch. 2
5. Using mathematics and computational thinking
- ⑥. Constructing explanations (for science) and designing solutions (for engineering) Ch. 1, 3
7. Engaging in argument from evidence
- ⑧. Obtaining, evaluating, and communicating information Ch. 1,2 4

Science & Engineering Practices: Balancing Forces

Building the practices incrementally,
lesson by lesson, chapter by chapter.



Balancing Forces: Science & Engineering Practices

Lesson Worksheet: Science and Engineering Practices

Unit: Balancing Forces

Chapter: 1 Chapter Question: Why does the train rise?

Chapter SEP #	SEP #1: Asking questions	SEP #2: Obtaining information from reading	SEP #3: Communicate information	SEP #4: Plan and conduct investigations	SEP #5: Analyze patterns in data
Lesson #					
Lesson # 1.1			Write initial explanations		
How:			Pre-unit Assessment		
Lesson # 1.2	Ask questions			Plan and conduct investigations	
How:	Ask questions about the floating train			Finding ways to make one of the blocks move	
Lesson # 1.3		Obtain and evaluate information			Find patterns in data
How:		Reading Forces All Around			Looking at data from Class Observation Table
Lesson # 1.4			Write explanations		
How:			Write about the floating train		
Lesson#					
How:					

Models

Use models

Create and
use models

Questions?





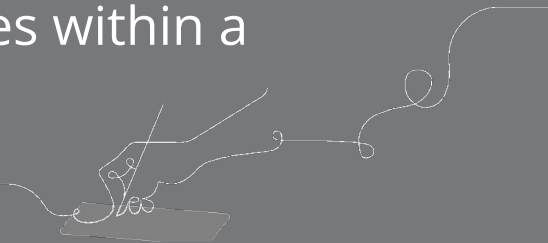
Plan for the day

- Framing and Review
- Introducing the Unit
- Unit Internalization
- Identifying the Science and Engineering Practices (Unit and Chapters)
- Science and Engineering Practices within a lesson
- Lesson Planning
- Closing

Overarching goals

We are able to:

- ☑ Internalize the unit
- ☑ Identify the Science and Engineering Practices within the unit
- ☑ Identify the Science and Engineering Practices within a lesson and how they are taught.
- ☑ Apply this knowledge to prepare to teach.



Closing reflection

Based on our work today, share:

Head: something you'll keep in mind

Heart: something you're feeling

Feet: something you're planning to do

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!

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



Thank You!

Thank you for all you do!

