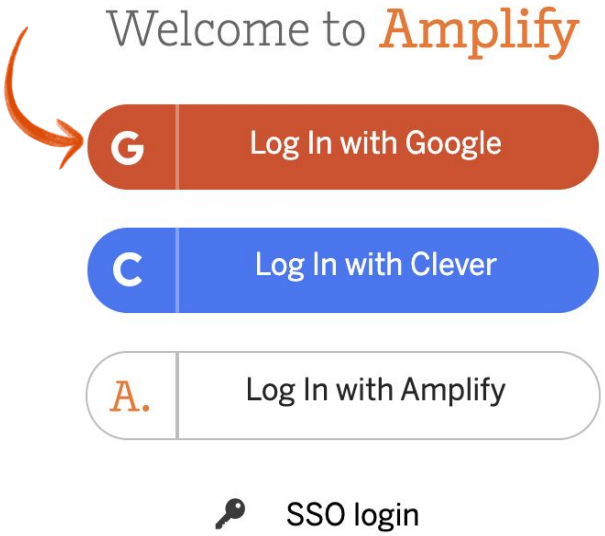
Welcome to Amplify Science!

Do Now: Log in through your Schoology account

or use Demo Account

1. Go to **learning.amplify.com**
2. Select **Log in with Google**
3. If you're already logged in with other Google accounts, click **Use another account**
4. Enter teacher demo account credentials
   - californiasci17@pd.tryamplify.net
   - Password: AmplifyNumber1
5. Explore as we wait to begin

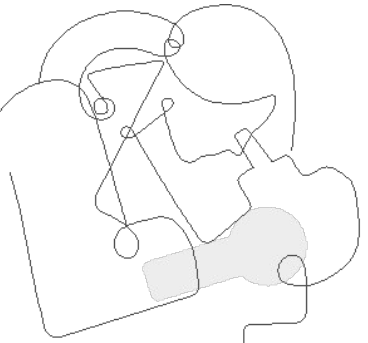


Amplify Science

Unit Internalization / Guided Planning

Grade 1, Unit 2: Light and Sound

Part 1



School/District Name: LAUSD
Date:
Presented by:

TOP RATED BY EDREPORTS

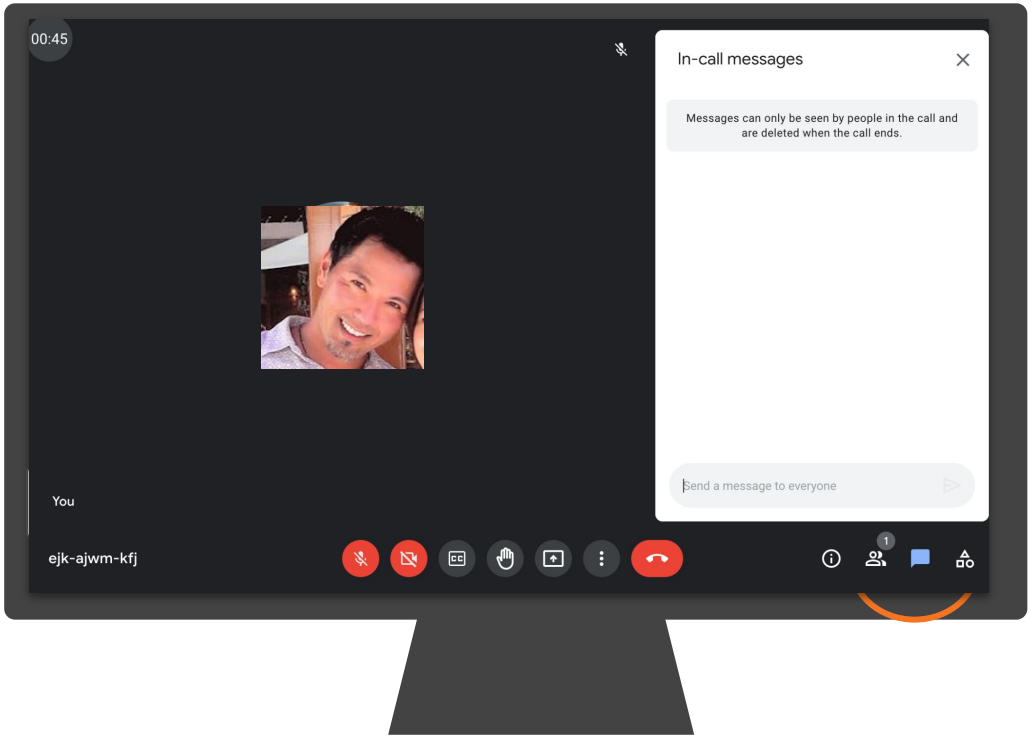
PLPG CERTIFIED PROVIDER

Thought Swap!

How is it going so far?

Question 1: Question 1:
What is one **success** you've had with teaching *Animal and Plant Defenses?*

Question 2: What is something that has been **challenging** for you and how have you worked to overcome that challenge?



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

Workshop Norms

- Please keep your camera on, if possible.
- Take some time to orient yourself to the platform

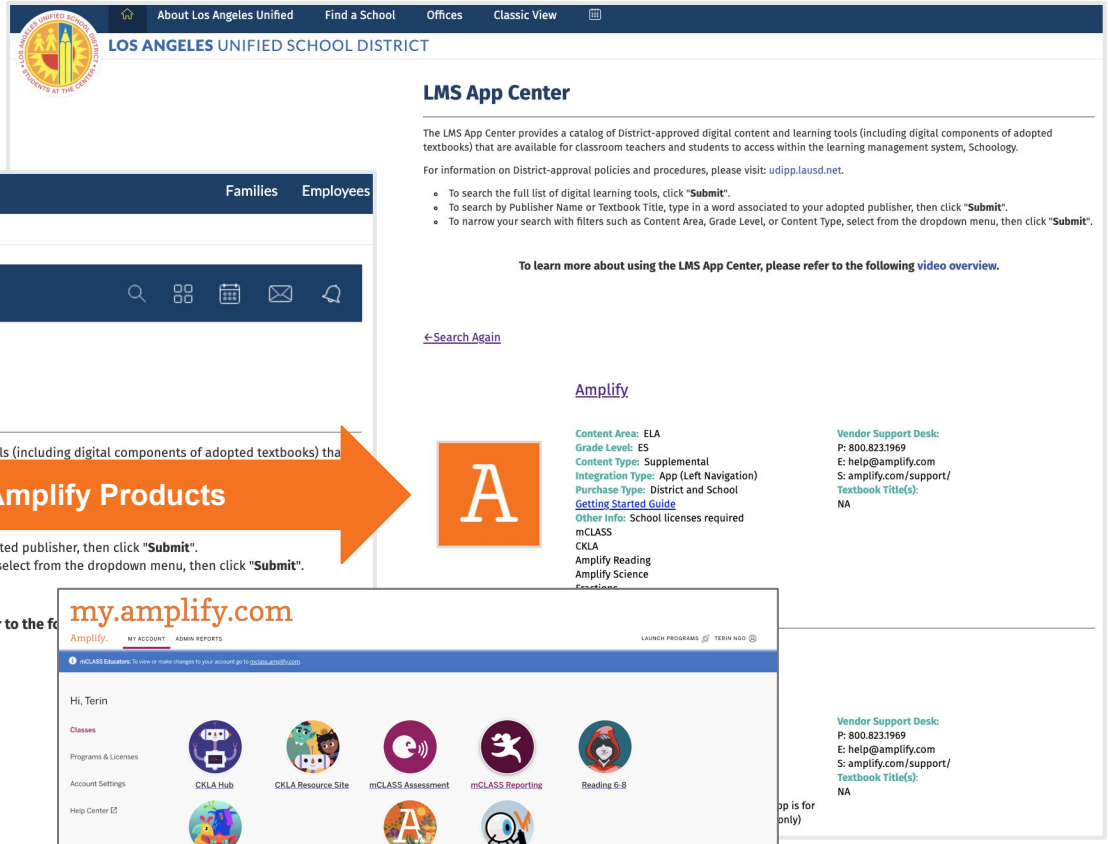
- Mute your microphone to reduce background noise unless sharing with the group

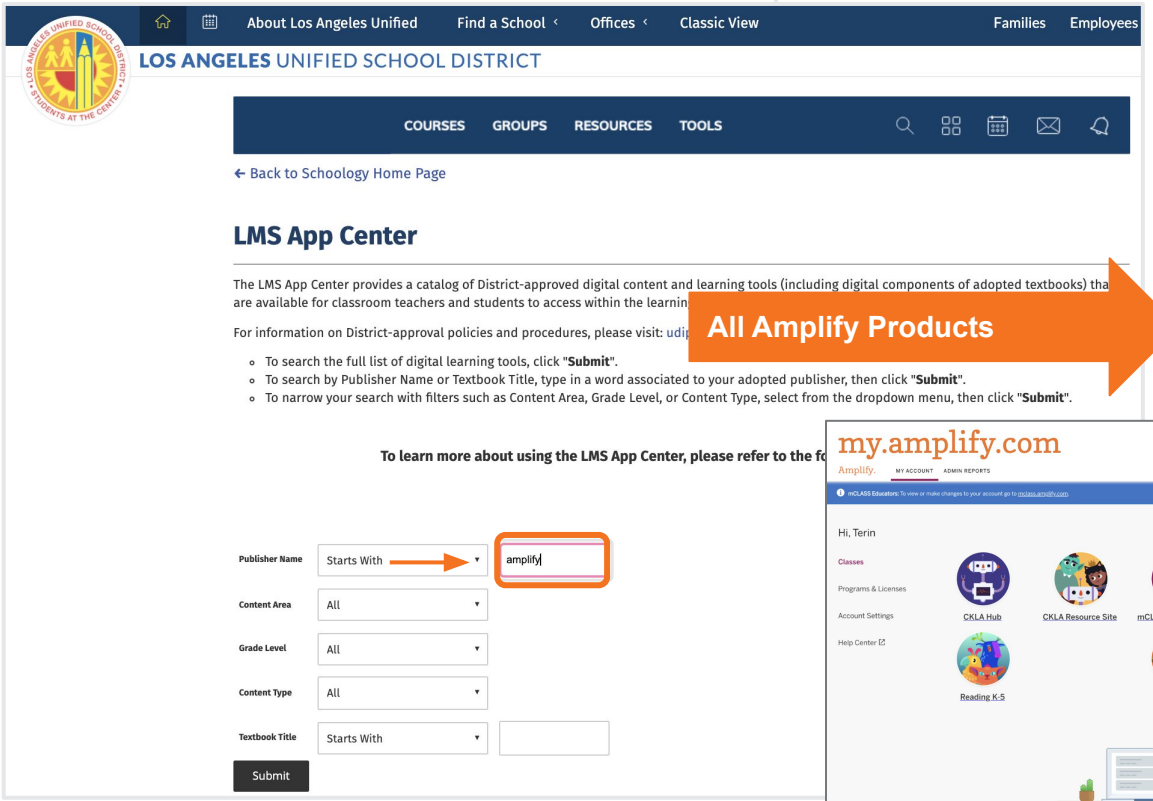
- The chat box is available for posting questions or responses to during the training

- Make sure you have a note-catcher present

- Be an active participant - chat, ask questions, discuss, share!

Schoology





All Amplify Products

my.amplify.com

Amplify. MY ACCOUNT ADMIN REPORTS LAUNCH PROGRAMS TERIN NGO

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

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

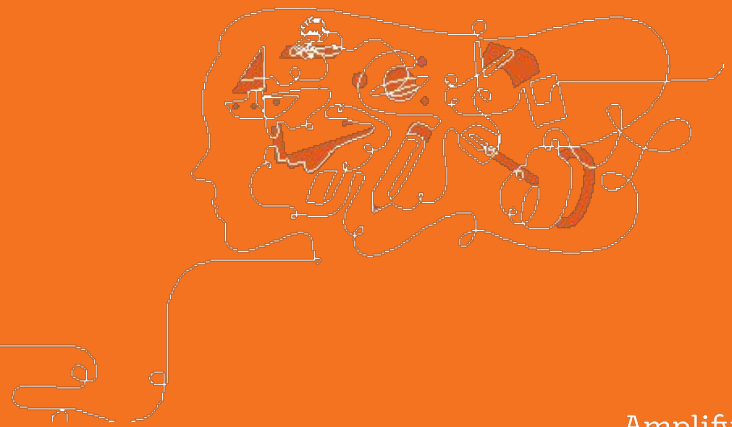
2 = Uncomfortable

3 = Mild

4 = Comfortable

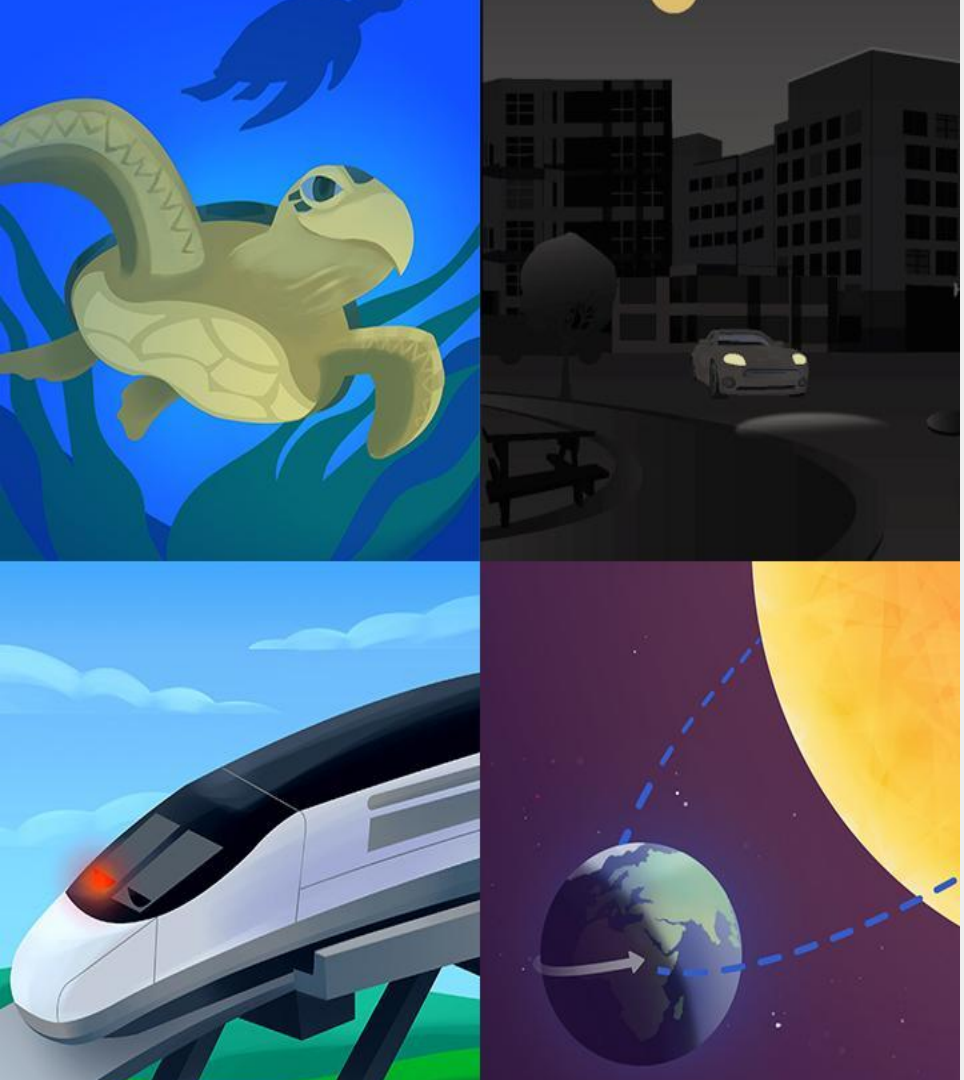
5 = Extremely Comfortable

Part 1



Overarching goals

- Explain how students engage in phenomenon based and 3D learning to construct an understanding of the science concepts introduced in *Light and Sound.*
- 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

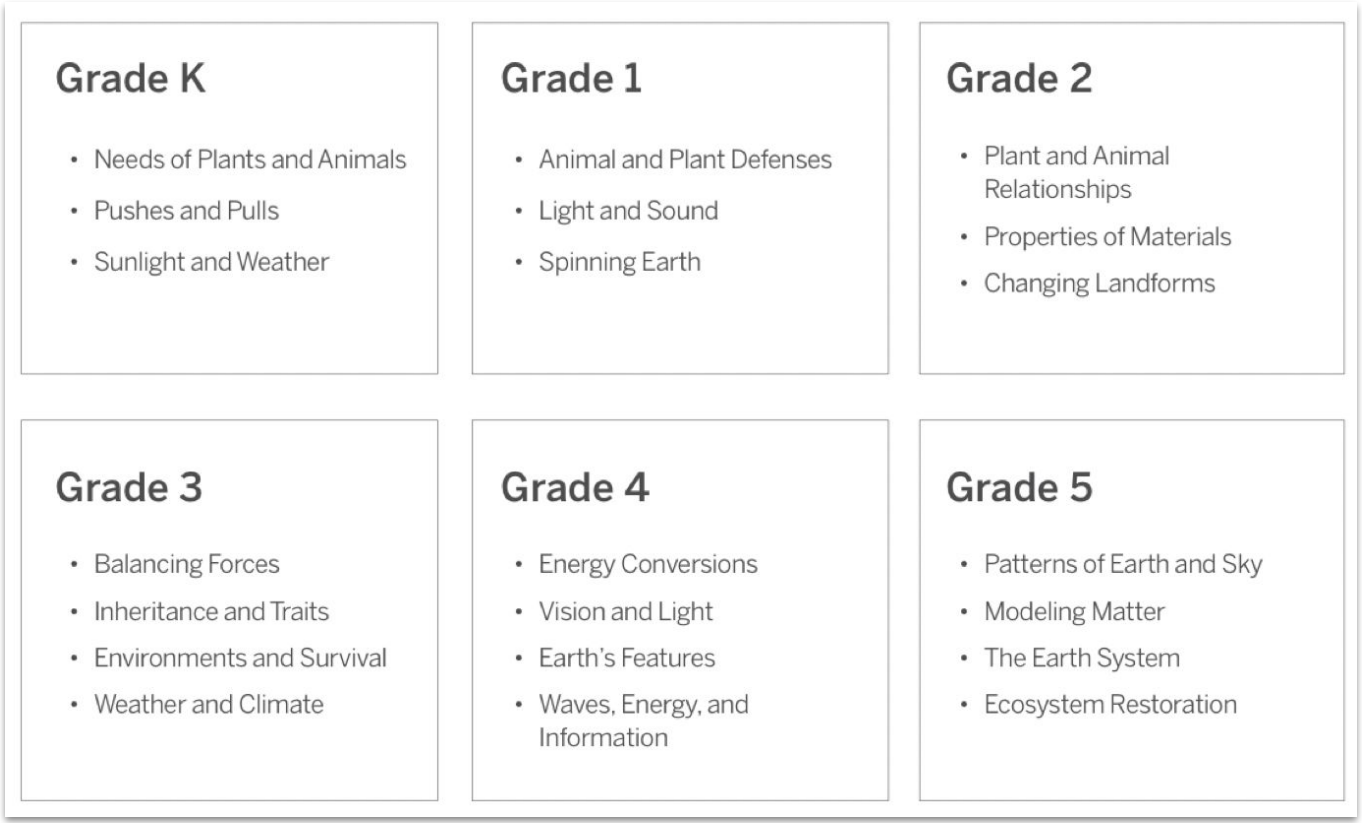
- Introduction and Framing
- NGSS & 3D Learning
- Phenomenon-based Instruction
- Unit Internalization
- Additional Resources
- Closing

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

+ Amplify.

Amplify Science

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 1

Animal and Plant Defenses

Domain: Life Science

Unit type: Modeling

Student role: Marine Scientist

Light and Sound

Domain: Physical Science

Unit type: Engineering Design

Student role: Light and Sound Engineer

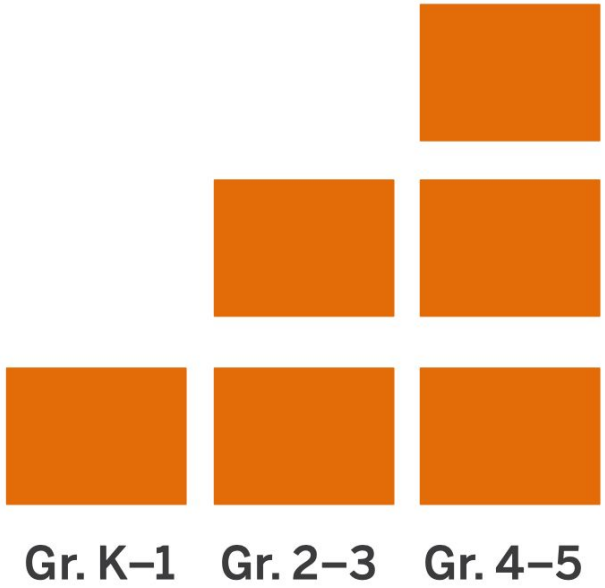
Spinning Earth

Domain: Earth and Space Science

Unit type: Investigation

Student role: Sky Scientist

What are the digital components of Amplify Science Elementary?



Student Simulations

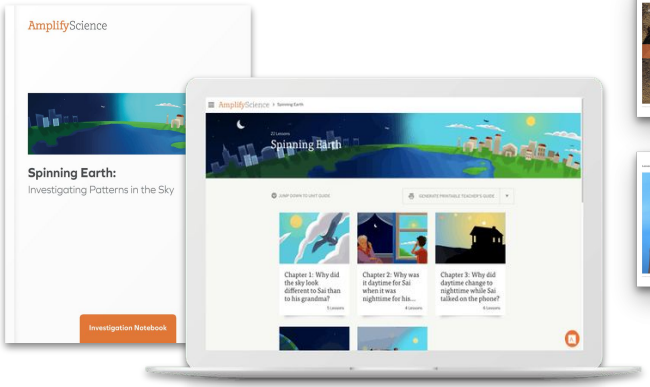
Student Science Practice Tools
(sorting tool, diagramming tool, modeling tool, data tool)

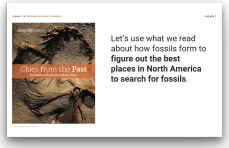
Teacher's Guide
(Online digital books for students)

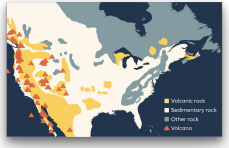
K-5 Program components

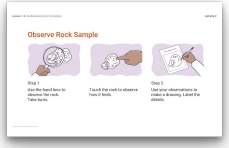
Teacher materials

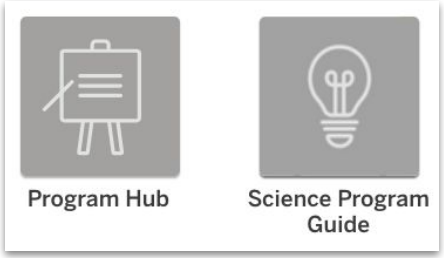
- Teacher's Guide (print and digital)
- Classroom Slides
- Classroom wall materials
- Embedded assessments
- Program Guide
- Program Hub
- Amplify Help Site

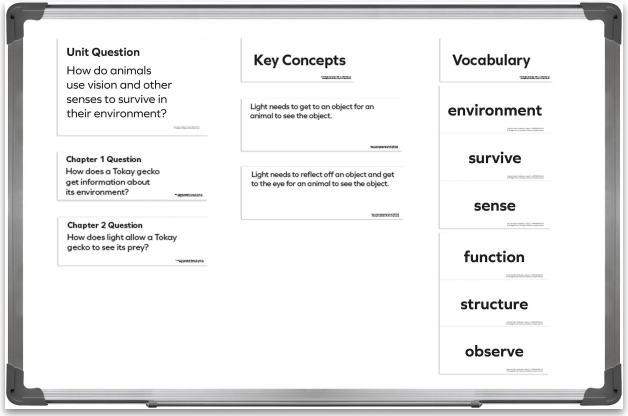








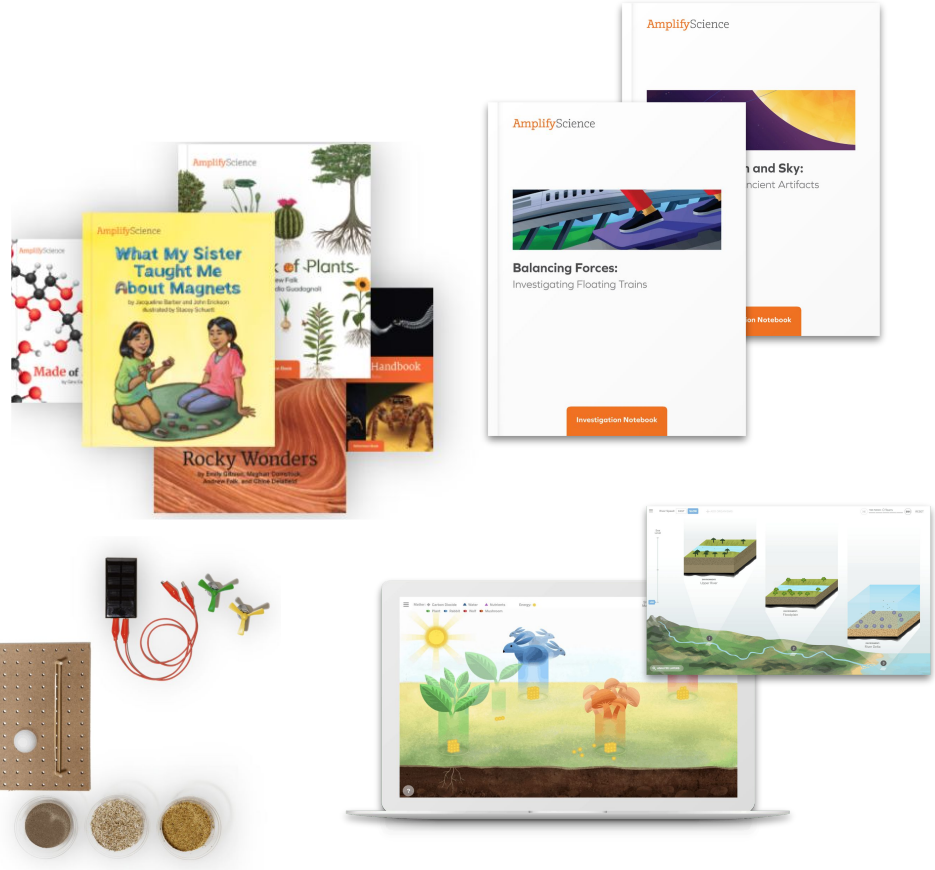




K-5 Program components

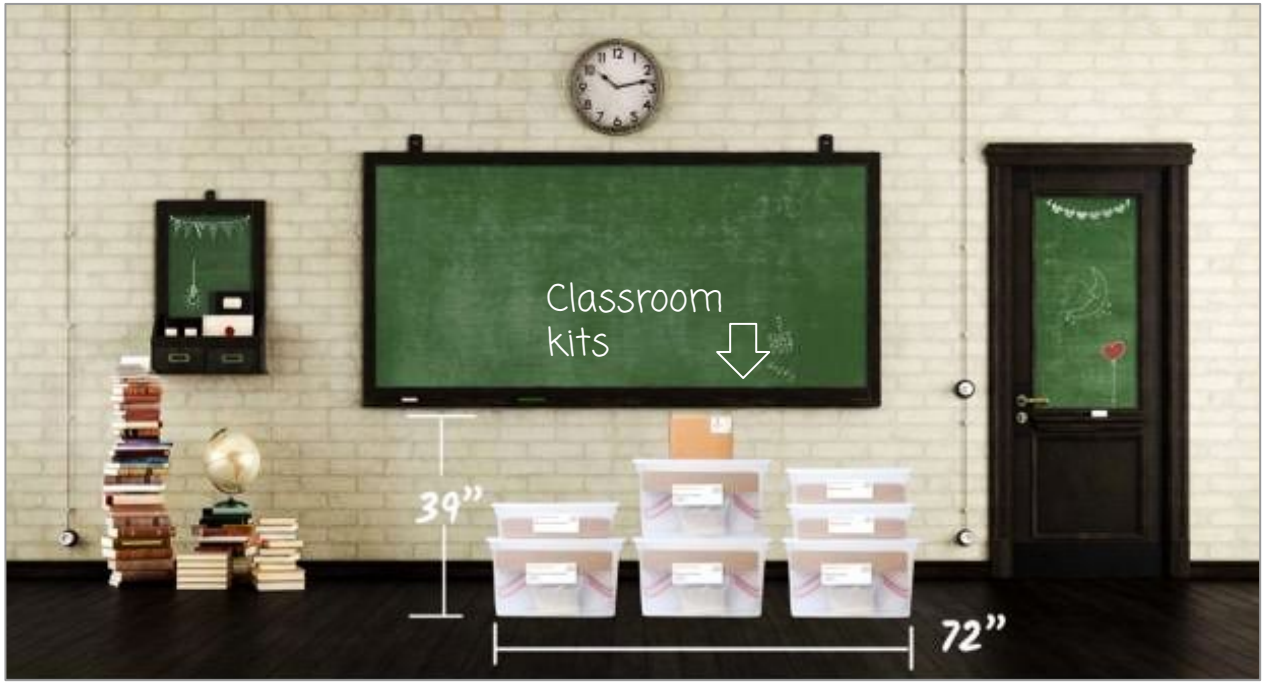
Student materials

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



K-5 Program components

Classroom kits

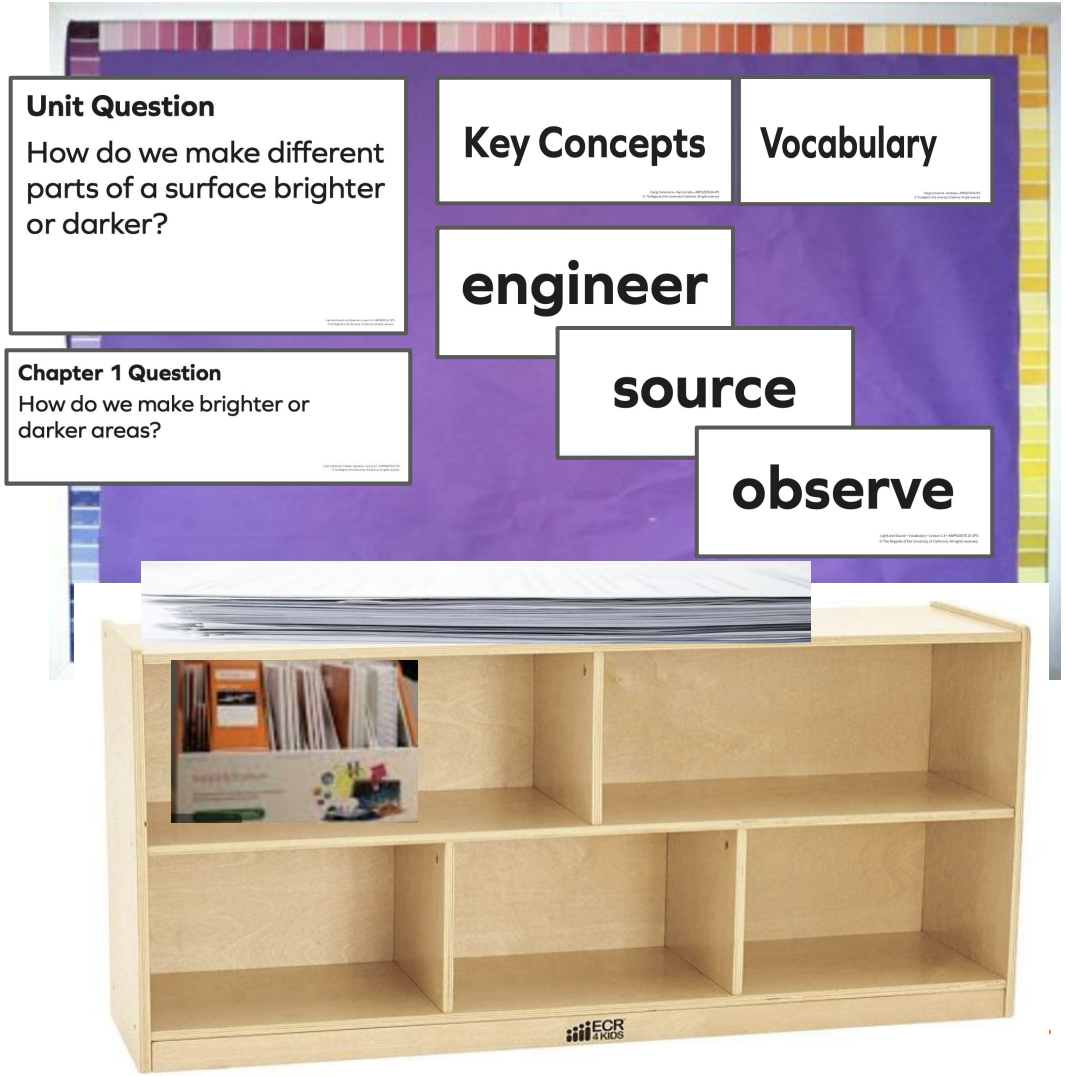


Classroom kits

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

Unpacking the Kit

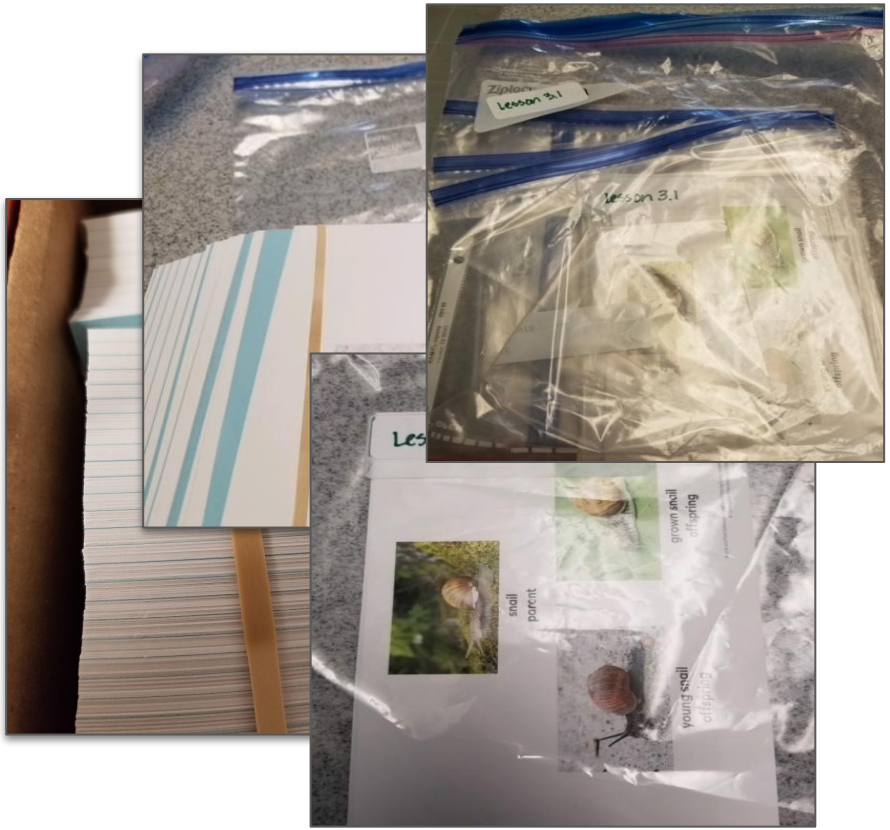
- Pull out the unit question, key concepts and vocabulary materials.
- Place them on the top of the table or bookcase below your science board
- Take books out of kit and place in the bookcase or on the table. (Always collect books after each lesson use. Return to bookcase so they are easily accessible.)



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



Word Relationship Cards

Amplify.

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

Welcome to Amplify Science!

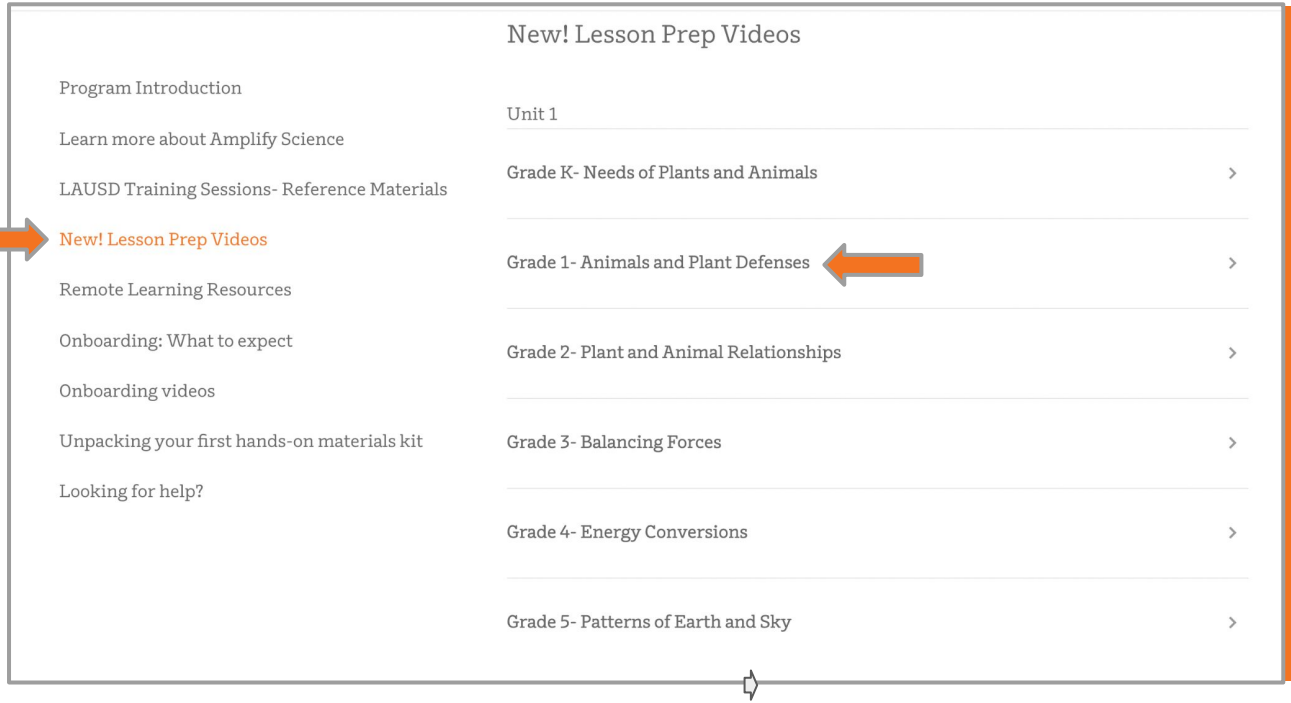
This site contains supporting resources designed for the LAUSD Amplify Science adoption for grades TK–8.

- 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

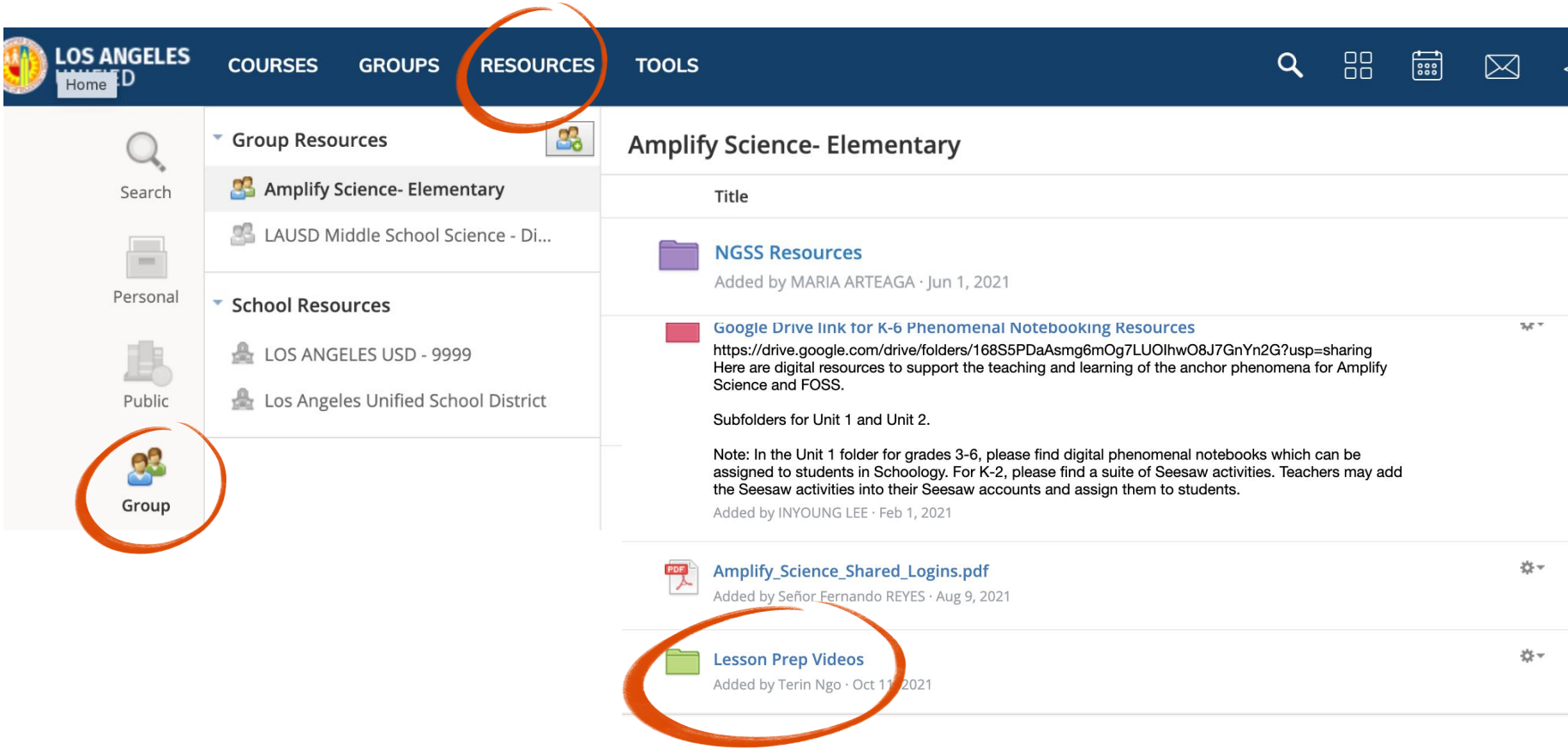
Classroom kits



Classroom Kits

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

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



Hands On Material Organization

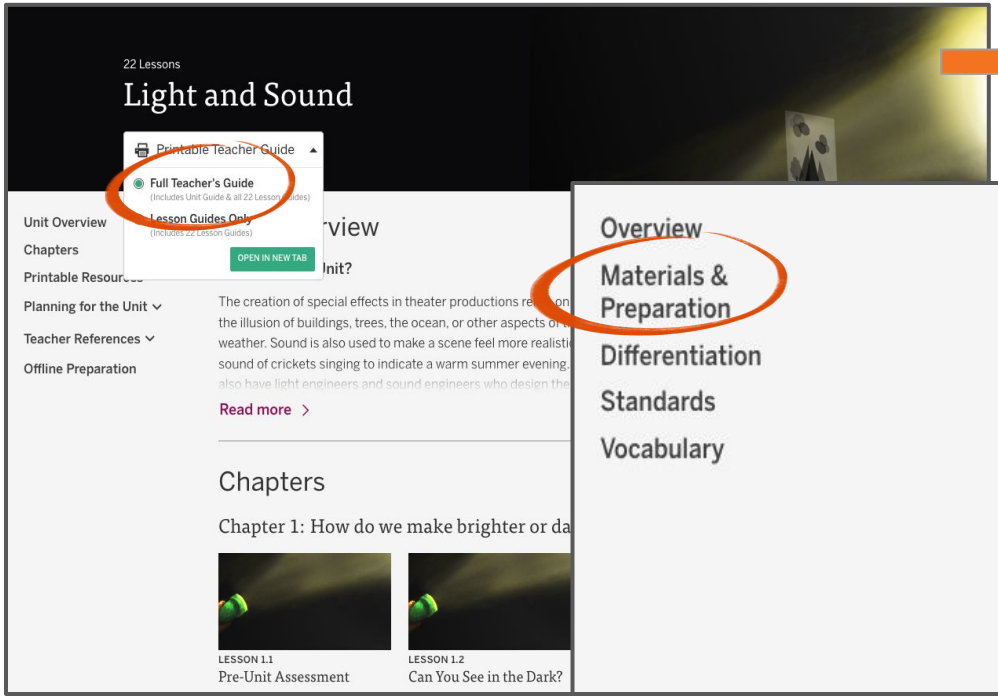
Directions
1. Open the Digital Lesson Guides Only page 7 from the Unit Landing page or go the Print TE to page 31. (Chapter 1 Activities)
2. Look for the lessons with Hands On.
HANDS-ON
3. Note in the table below.
4. Review the materials and preparation to determine if it can be prepared prior to the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

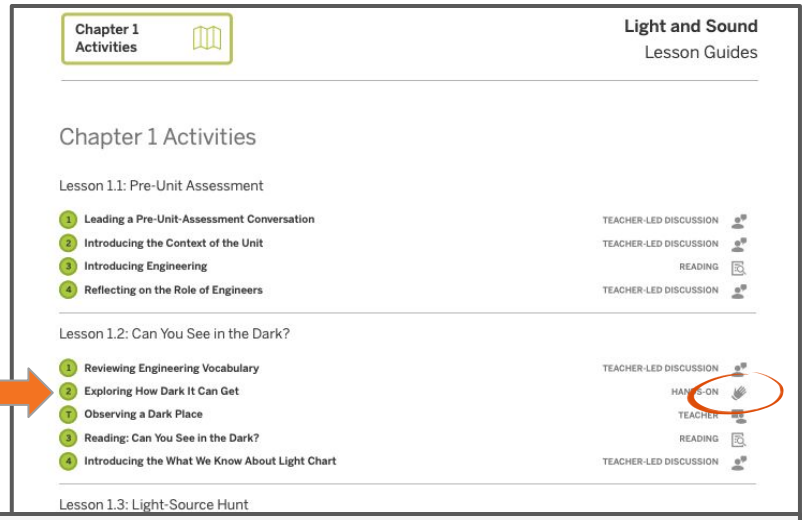
Chapter/Lesson	Activity	Prep Prior	Prep Day of	What to do	
1.1	1	X		Prep plastic bags with labels A, B, C, D and M. Place 1 tsp of the following cinnamon, salt, flour, cornstarch in A,B,C, D. In bag M mix 1 tsp salt and 1 tsp cinnamon.	*This is an example from Properties of Materials Grade 2*

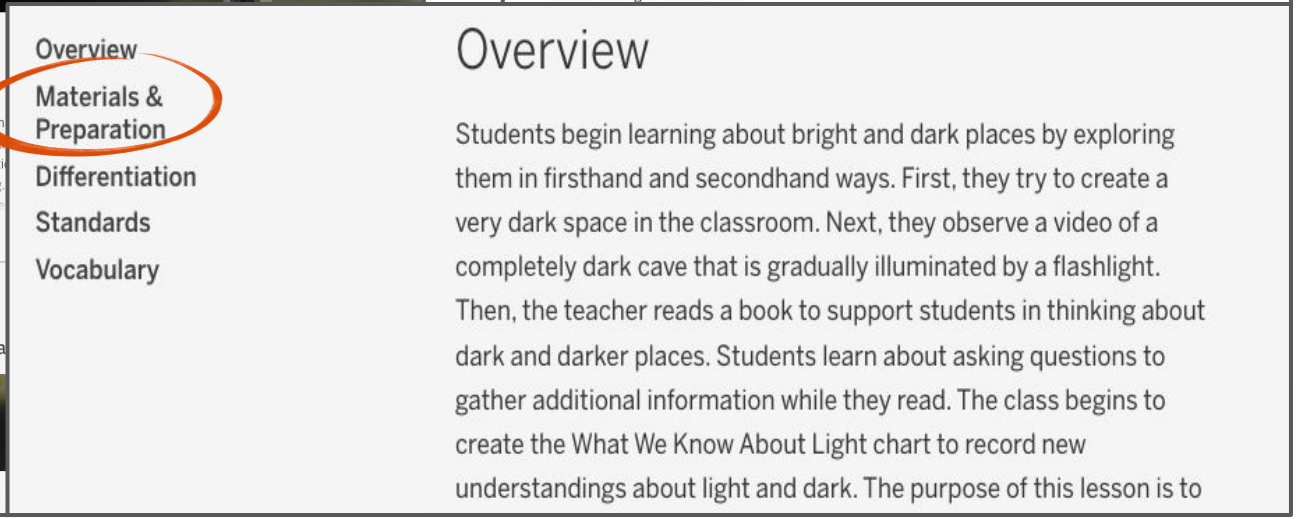
Hands On Material Organization

Completed Pushes and Pulls

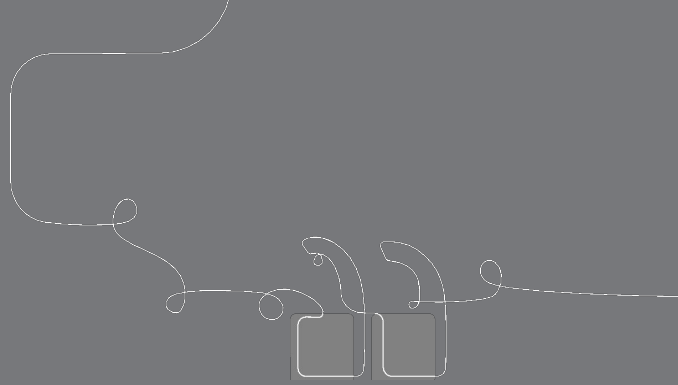
- Open Your **Lesson Guides Only**
- Start with **Chapter 1** and look for the **hands icon**
- Go into the lesson **materials and prep**

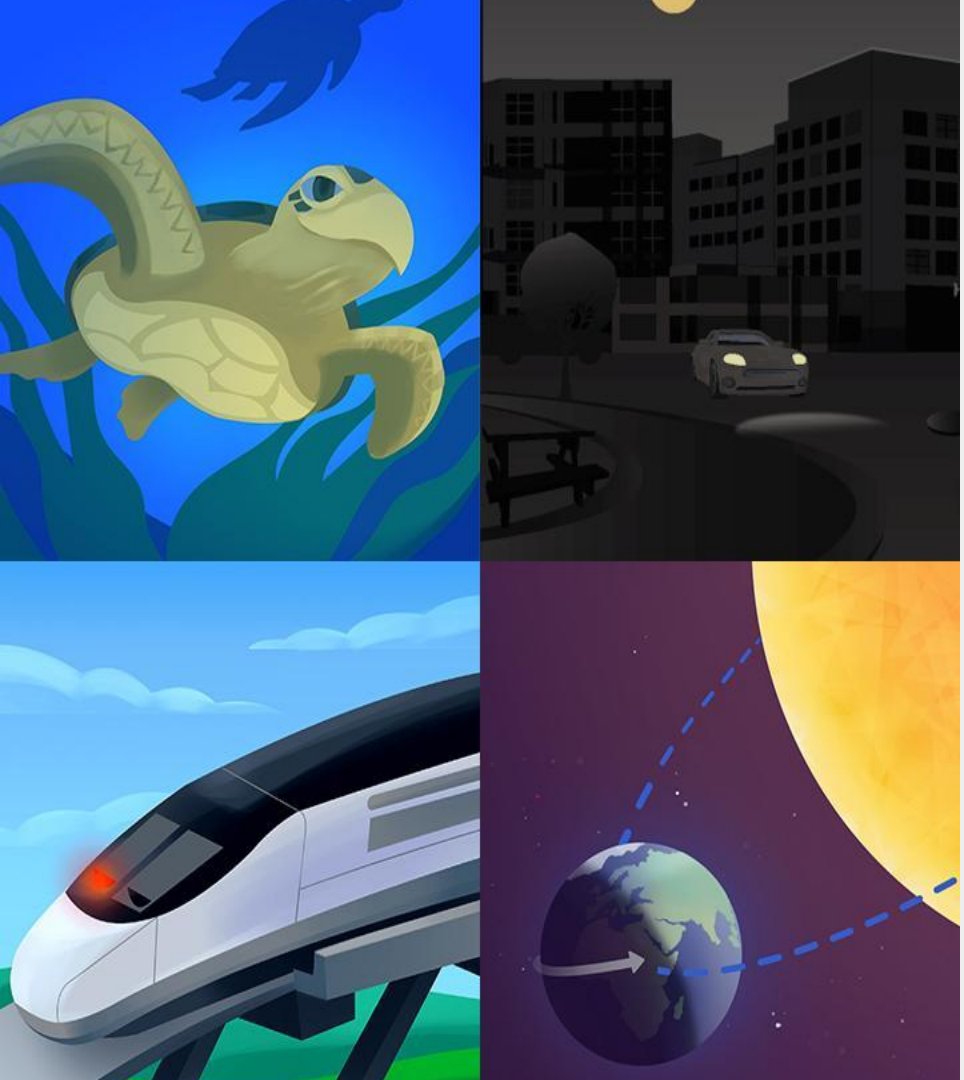






Questions?





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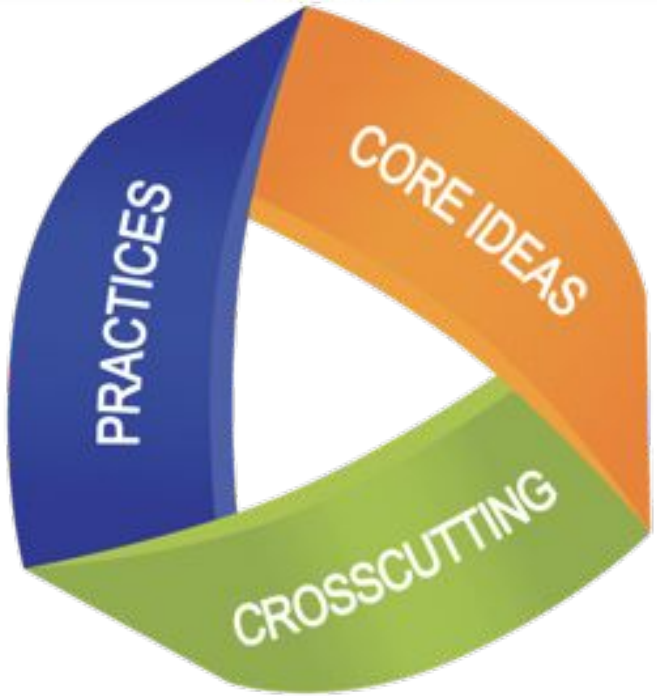
NGSS - Three dimensional learning

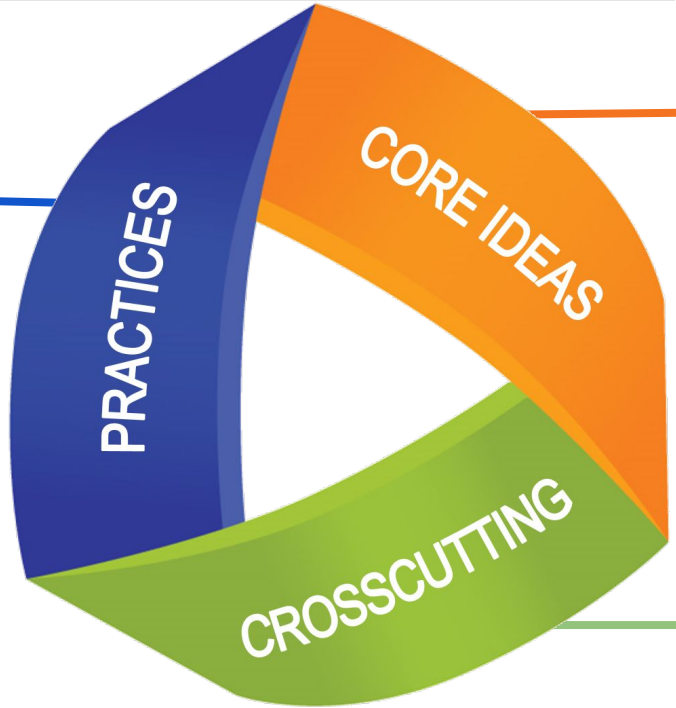
Evaluate your knowledge

- 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

Science and Engineering Practices

inquiry

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations

math

4. Analyzing and interpreting data
5. Using mathematics and computational thinking

language

6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

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).

Science and Engineering Practices

inquiry

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations

math

4. Analyzing and interpreting data
5. Using mathematics and computational thinking

language

6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Crosscutting Concepts

5. Energy and Matter

Tracking energy and matter flows, into, out of, and within systems helps one understand their system's behavior.

6. Structure and Function

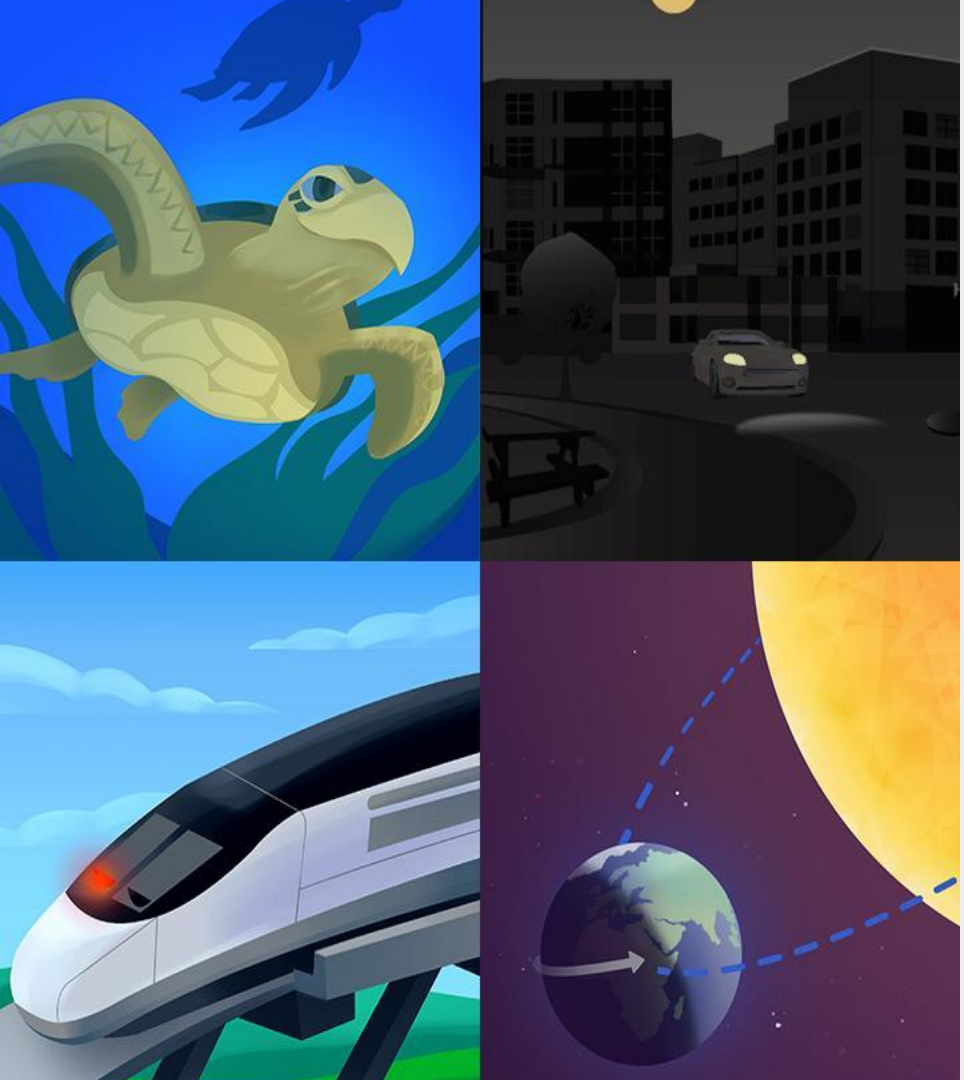
The way an object is shaped or structured determines many of its properties and functions.

7. Stability and Change

For both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand.

4. Systems and System Models

A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.



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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
Ocean habitats	A sea turtle can survive in an ocean habitat where sharks live

Topic-based vs. Phenomenon-based

How might learning be different?

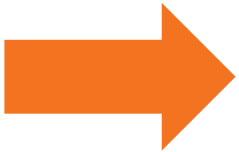
Topic-based	Phenomenon-based
Ocean habitats	A sea turtle can survive in an ocean habitat where sharks live.
Electric circuits	A flashlight won't turn on, even though it used to work.
Mixtures and solutions	One substance dissolved in water but another substance didn't.

Comparing topics and phenomena

A shift in science instruction

from learning about

(like a student)



to figuring out

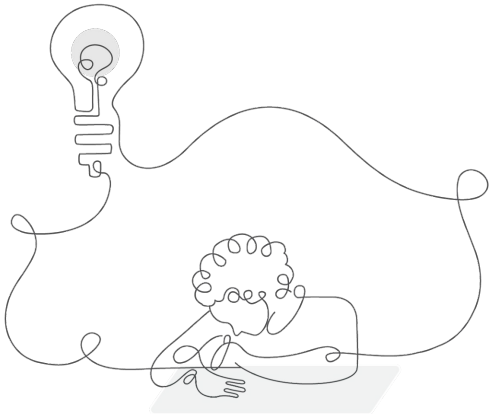
(like a scientist)

Previewing the unit

Introducing the phenomenon

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

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



We will start learning about **light and sound**.

We will be **engineers** who work with light and sound. Today we will learn what light and sound engineers do.

Let’s get ready by **observing** some pictures and describing what we notice.

What was the **same** in all of the pictures we just observed?

Scientists and engineers **ask questions**. Sometimes, new questions come from their **observations**.

The **bright areas** and **dark areas** in each picture make me wonder something new: **Why do some areas look bright and other areas look dark?**

A **puppet-theater company** has come to us with a **problem** that they think we can **solve** by using **light and sound**.

Their puppet shows use many heavy parts that are difficult to carry around. They are hoping that we can figure out how to **use light to make a picture on a wall** instead.

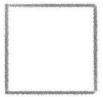
Let’s look at a picture of their puppet shows and talk about what we notice.

A **scene** is the **background** of a play or a puppet show.

The puppet-theater company wants us to create a scene using light.

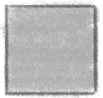
Puppet Scene Design Goals

- The scene should have a <u>bright</u> area.



- The scene should have a <u>dark</u> area.

- The scene should have a <u>medium bright</u> area, between bright and dark.



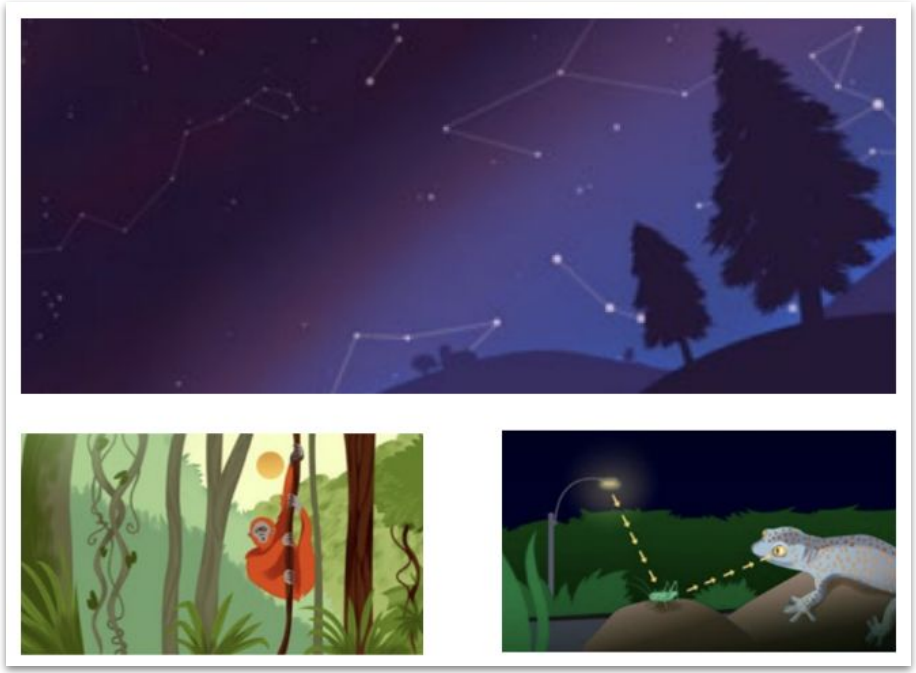
This chart shows our **design goals**.

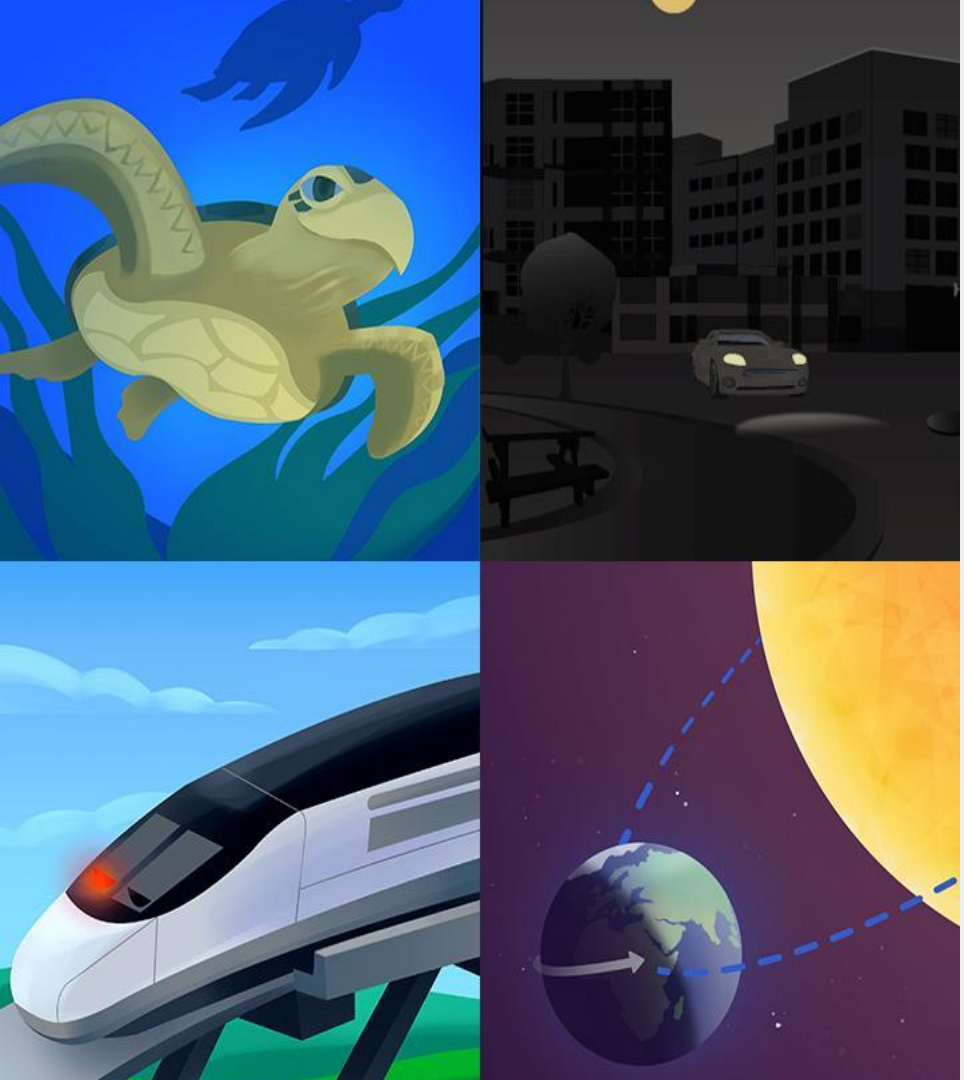
The puppet-theater company asked us to make scenes that create **three different areas** on the wall.

Amplify Science

Anchoring phenomenon

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





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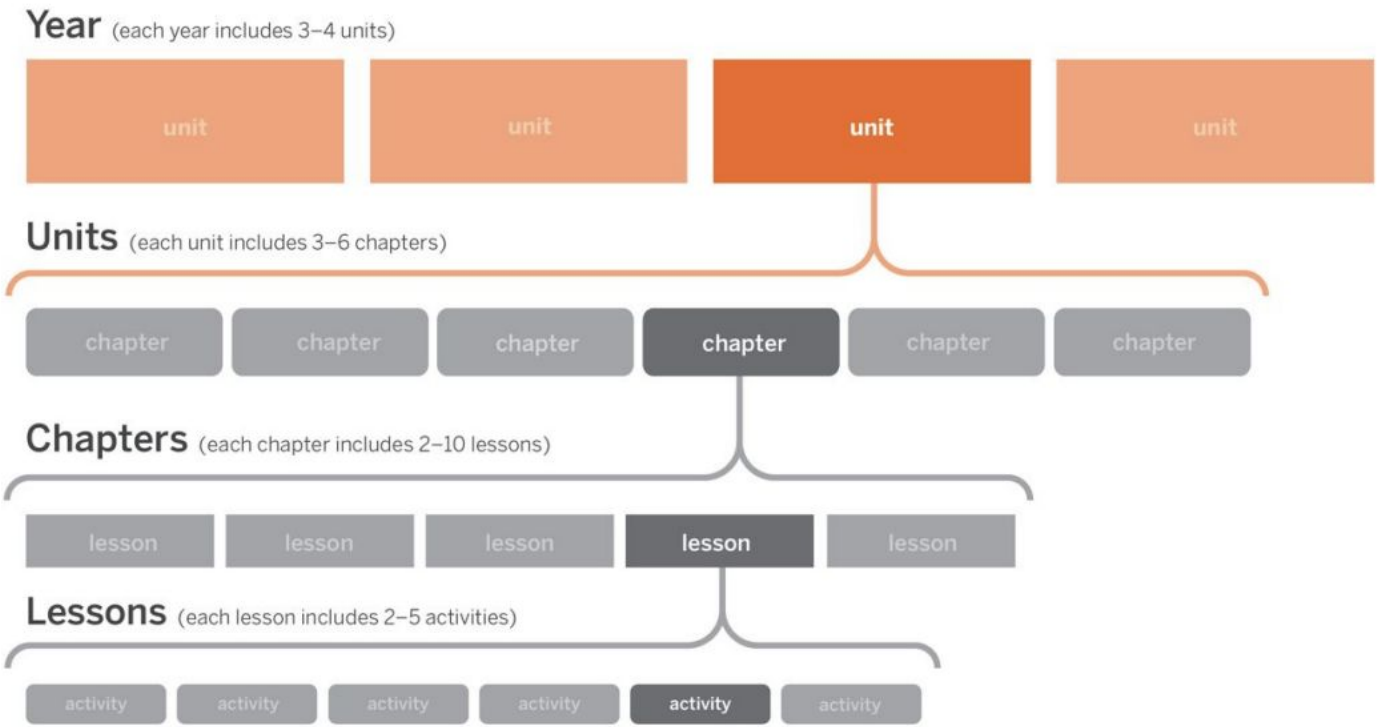
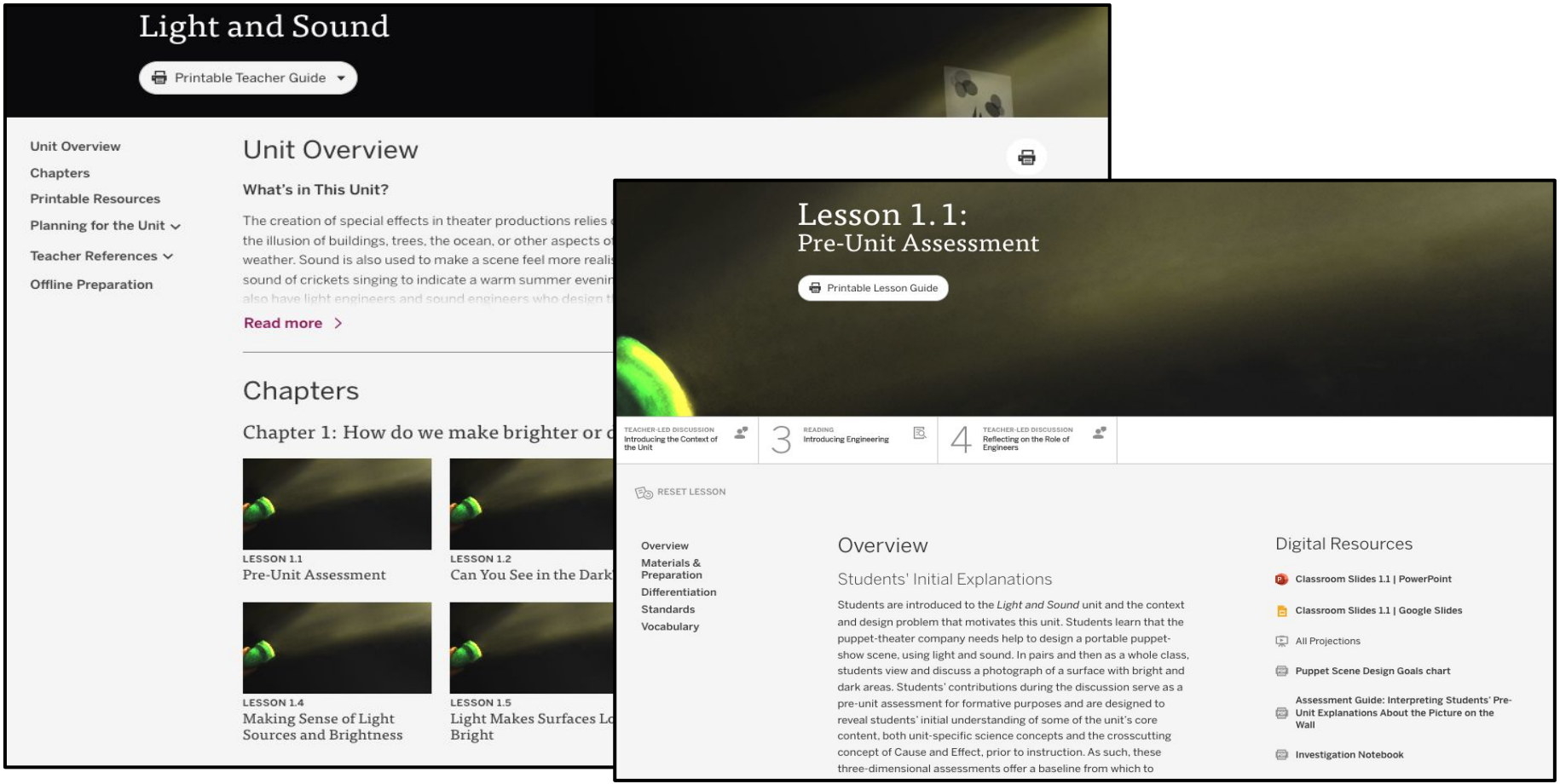
K-5 Navigation structure



Let’s Go Live!


Light and Sound
Printable Teacher Guide
Unit Overview
Chapters
Printable Resources
Planning for the Unit
Teacher References
Offline Preparation
Unit Overview
What’s in This Unit?
The creation of special effects in theater productions relies
the illusion of buildings, trees, the ocean, or other aspects o
weather. Sound is also used to make a scene feel more reali
sound of crickets singing to indicate a warm summer evenin
Read more
Chapters
Chapter 1: How do we make brighter or
LESSON 1.1
Pre-Unit Assessment
LESSON 1.2
Can You See in the Dark
LESSON 1.4
Making Sense of Light Sources and Brightness
LESSON 1.5
Light Makes Surfaces L
Bright
Lesson 1.1:
Pre-Unit Assessment
Printable Lesson Guide
TEACHER-LED DISCUSSION
Introducing the Context of the Unit
3
READING
Introducing Engineering
4
TEACHER-LED DISCUSSION
Reflecting on the Role of Engineers
RESET LESSON
Overview
Materials & Preparation
Differentiation
Standards
Vocabulary
Overview
Students' Initial Explanations
Students are introduced to the Light and Sound unit and the context and design problem that motivates this unit. Students learn that the puppet-theater company needs help to design a portable puppet-show scene, using light and sound. In pairs and then as a whole class, students view and discuss a photograph of a surface with bright and dark areas. Students' contributions during the discussion serve as a pre-unit assessment for formative purposes and are designed to reveal students' initial understanding of some of the unit's core content, both unit-specific science concepts and the crosscutting concept of Cause and Effect, prior to instruction. As such, these three-dimensional assessments offer a baseline from which to
Digital Resources
Classroom Slides 1.1 | PowerPoint
Classroom Slides 1.1 | Google Slides
All Projections
Puppet Scene Design Goals chart
Assessment Guide: Interpreting Students' Pre-Unit Explanations About the Picture on the Wall
Investigation Notebook

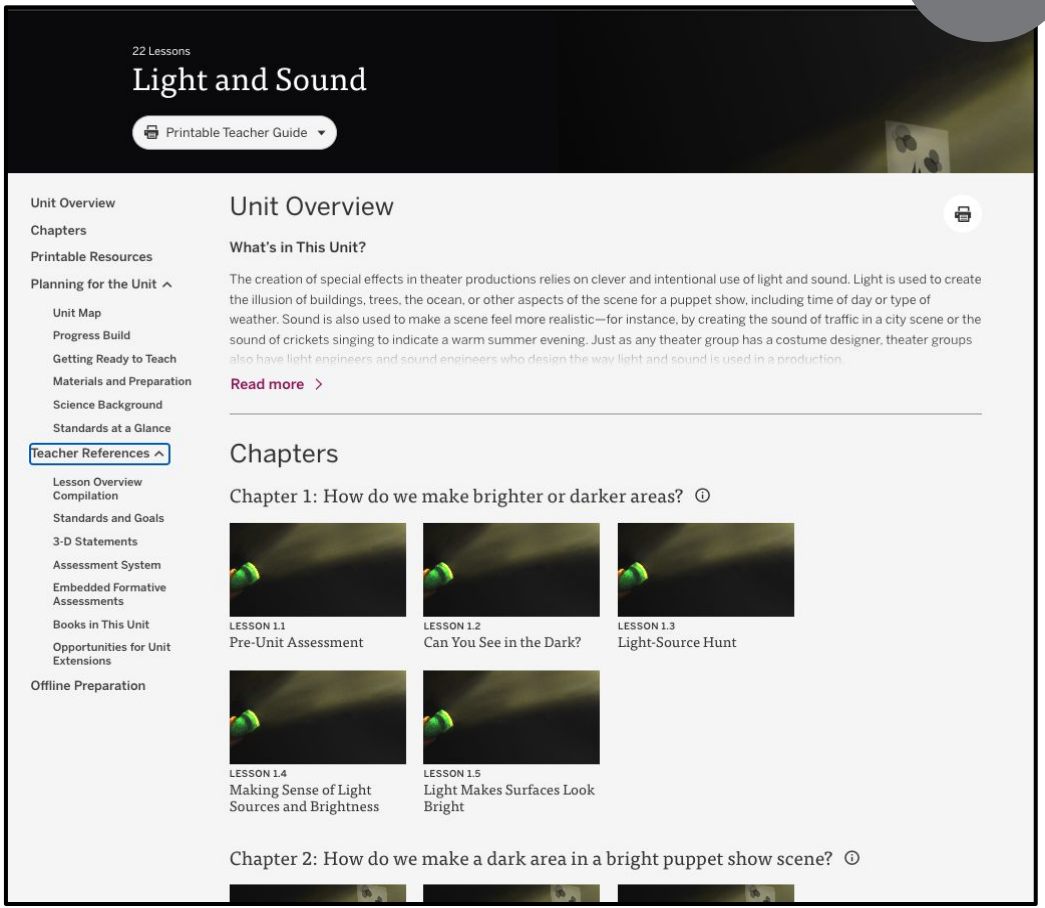
Navigation summary

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.

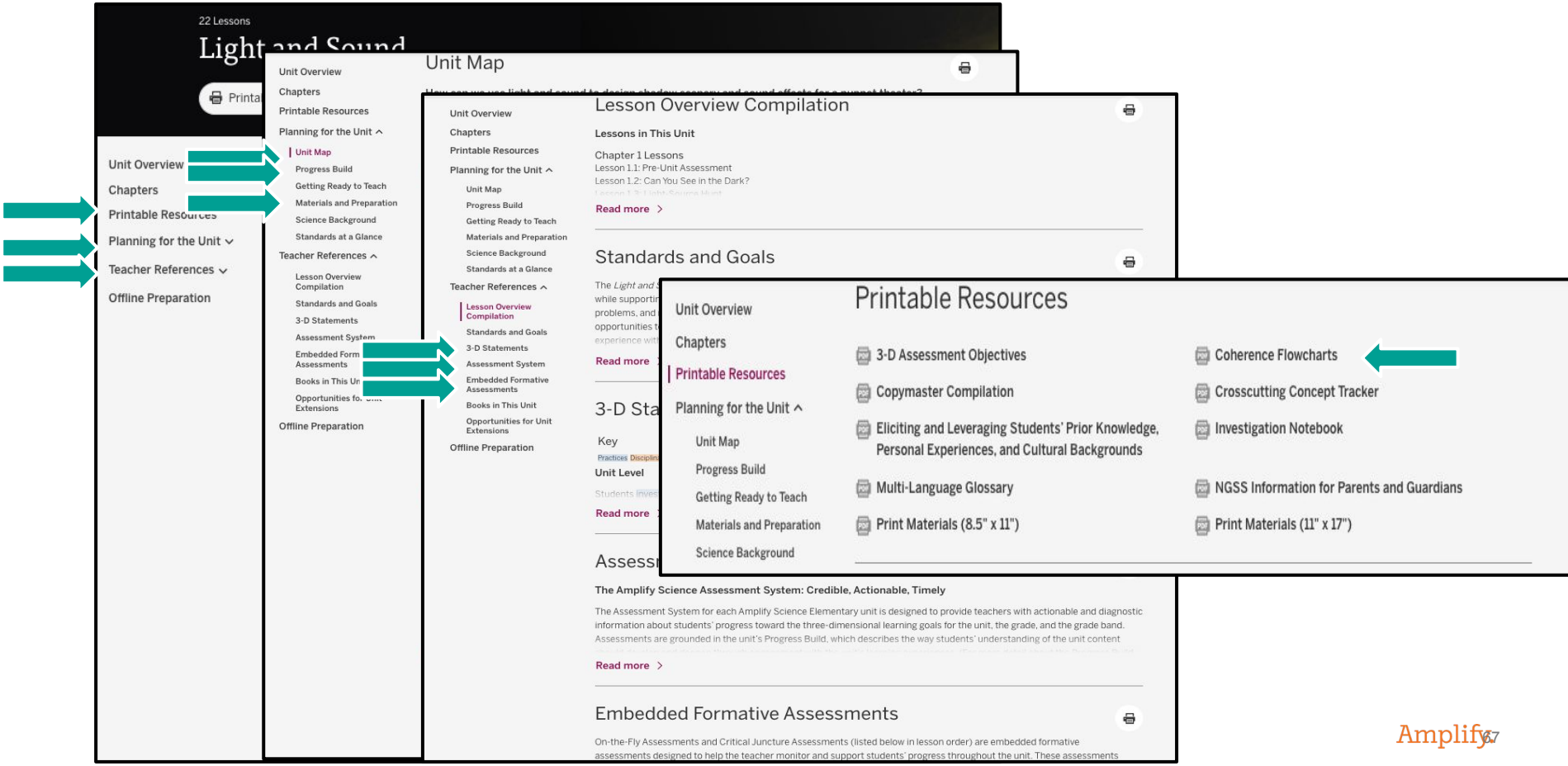
Unit Level resources

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



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	

1

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:	Light and Sound

Overview

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

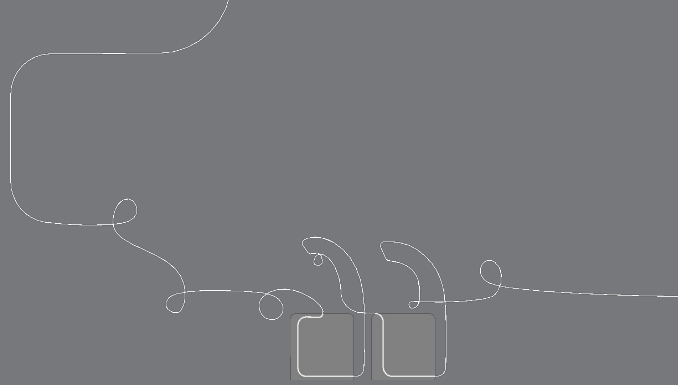
What is the phenomenon/real-world problem students are investigating in your unit?	Student Role:
How can we use light and sound to design shadow scenery and sound effects for a puppet theater?	Light and Sound Engineeers
Unit Question:	**Relationship between the Unit Phenomenon and Unit Question:**
How can we make different parts of a surface brighter or darker?	Students use their understanding of light and sound to design a puppet scene for a puppet show. They use patterns of light and shadow to create the effects they want for the puppet show.

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

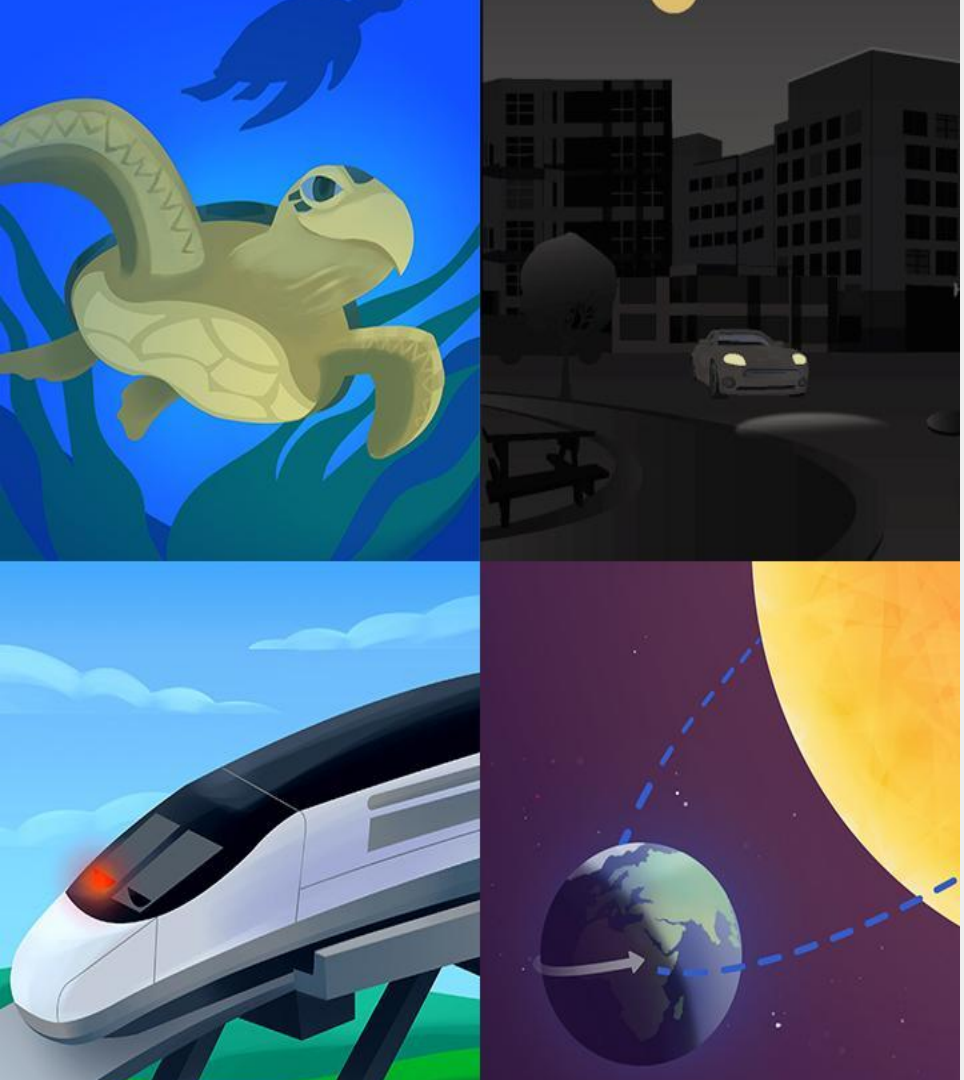
Students figure out that light comes from a source and travels to a surface and a dark area is the result of putting an object between a light source and a surface. They also figure out that different materials let different amounts o flight pass through. They finally figure out that sound has a source just like light does.

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

Students investigate and construct explanations about how light and sound can be used to create solutions for a puppet-theater company (cause and effect). Students apply what they learn in order to design solutions to create shado scenery and sound effects for a puppet-theater show (patterns).



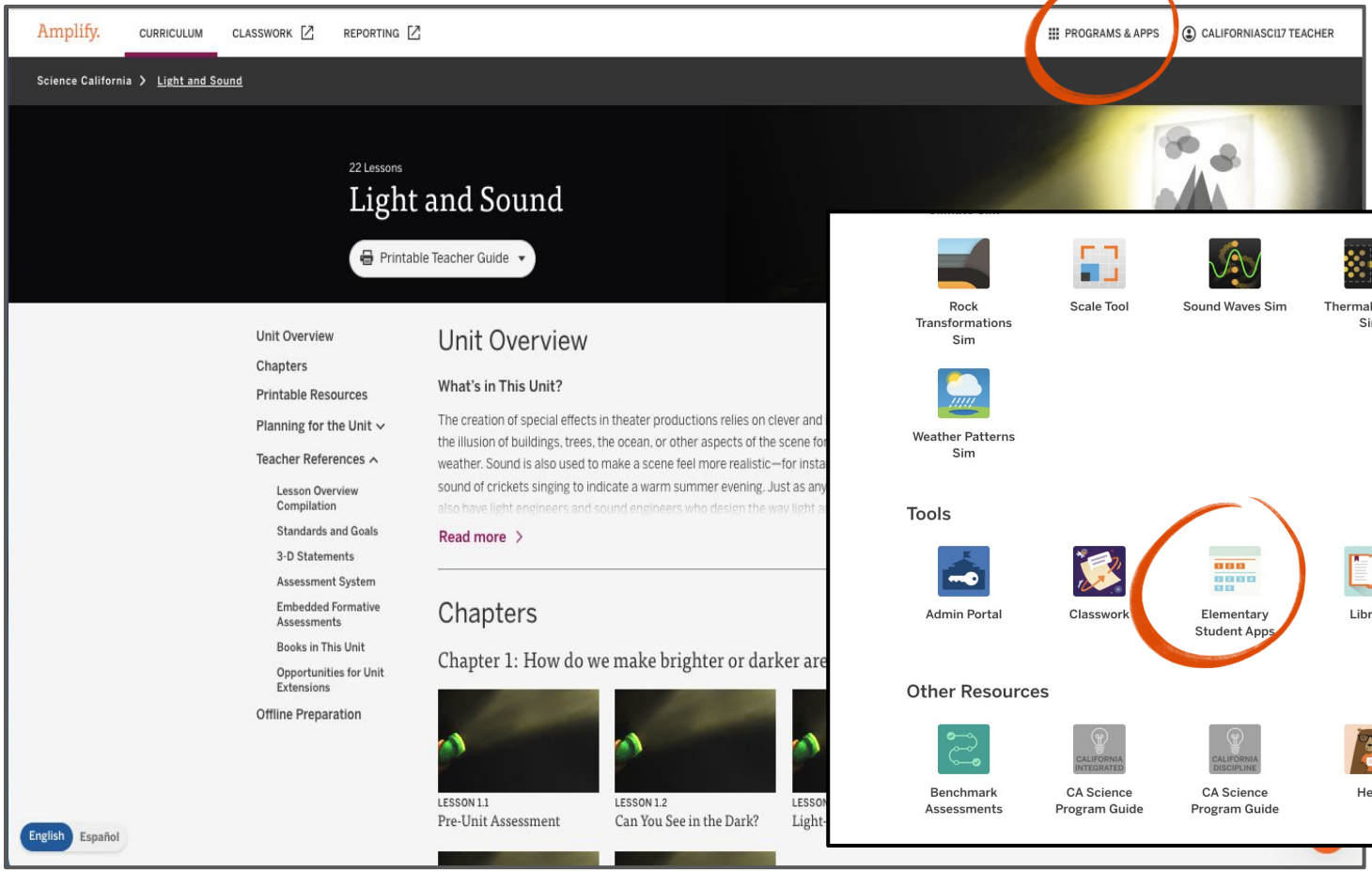
Questions?



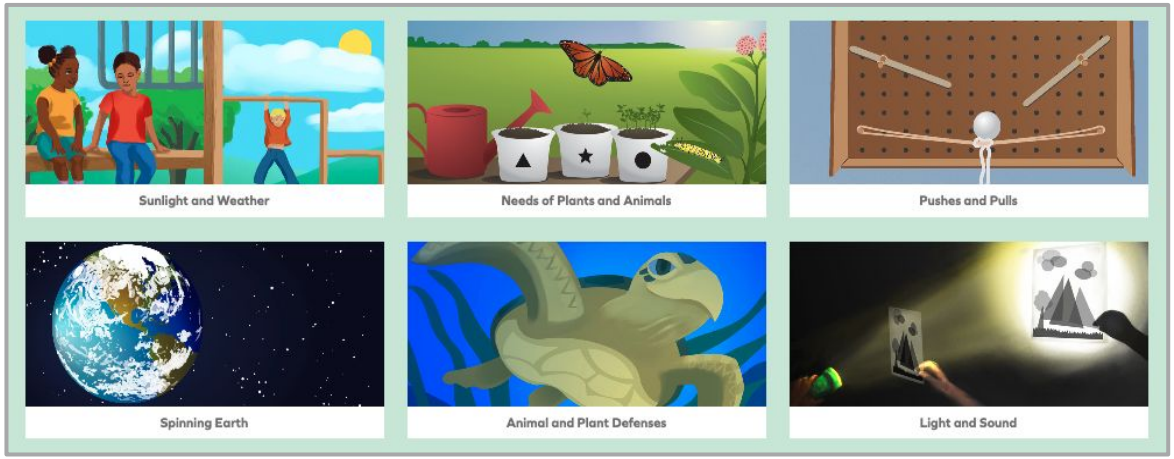
Plan for the day: Part 1

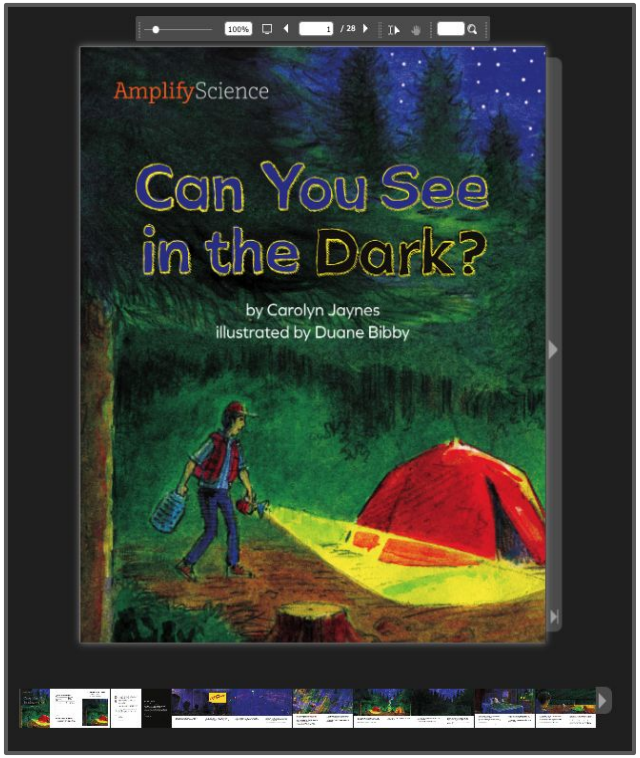
- Introduction and Framing
- NGSS & 3D Learning
- Phenomenon-based Instruction
- Unit Internalization
- Additional Resources
- Closing

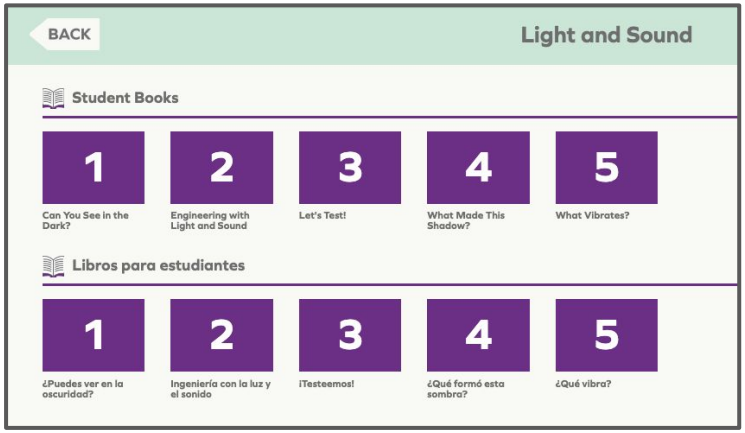
Navigating to the Student Apps page



Student Apps page and accessing the book

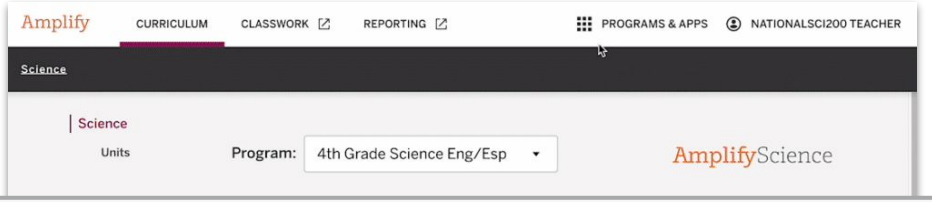


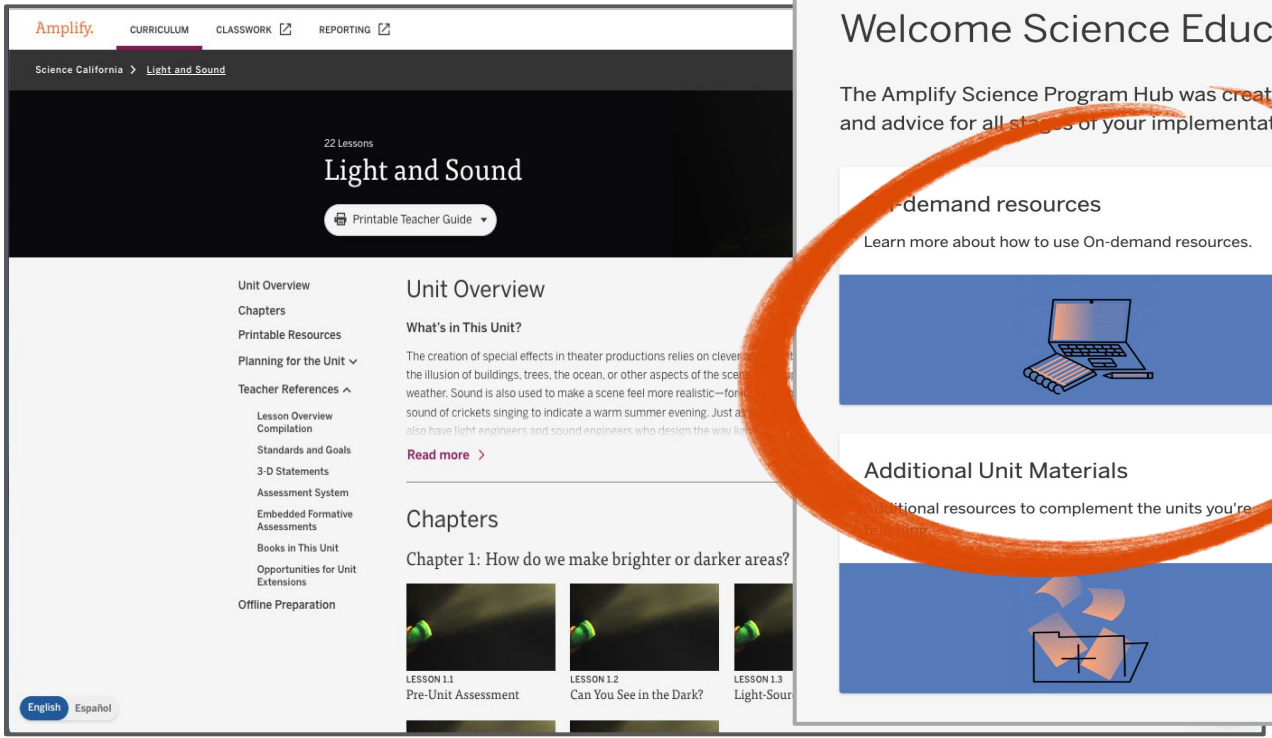


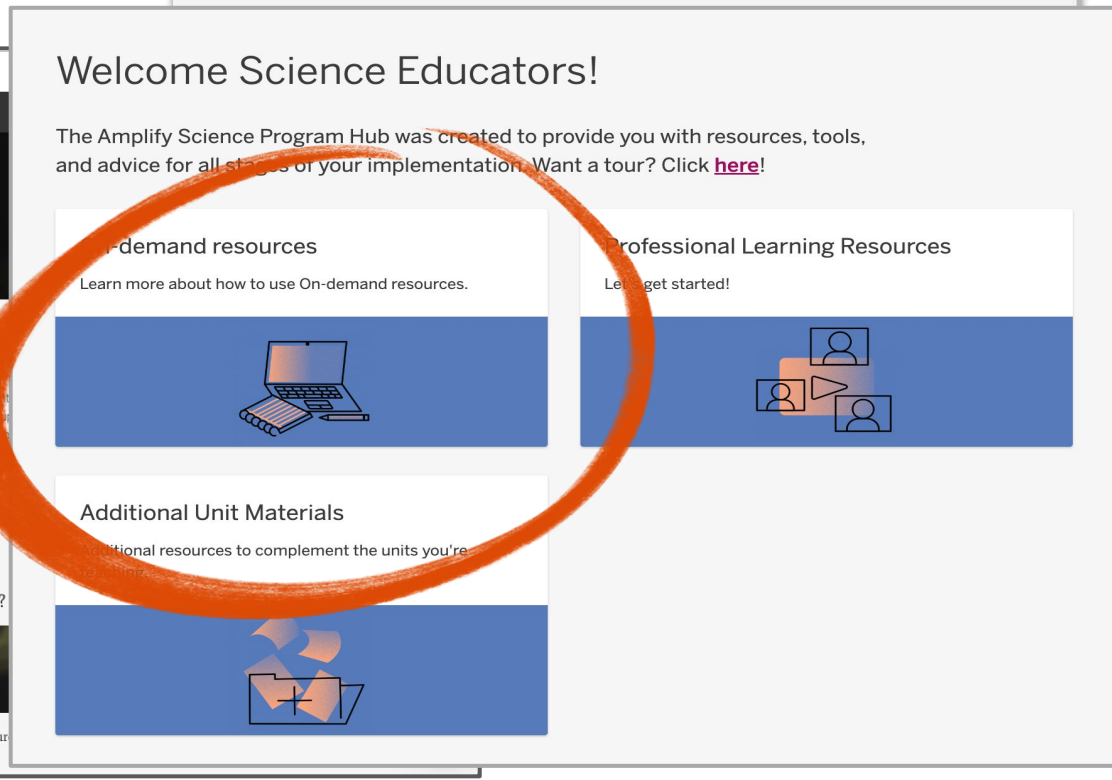


Program Hub

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



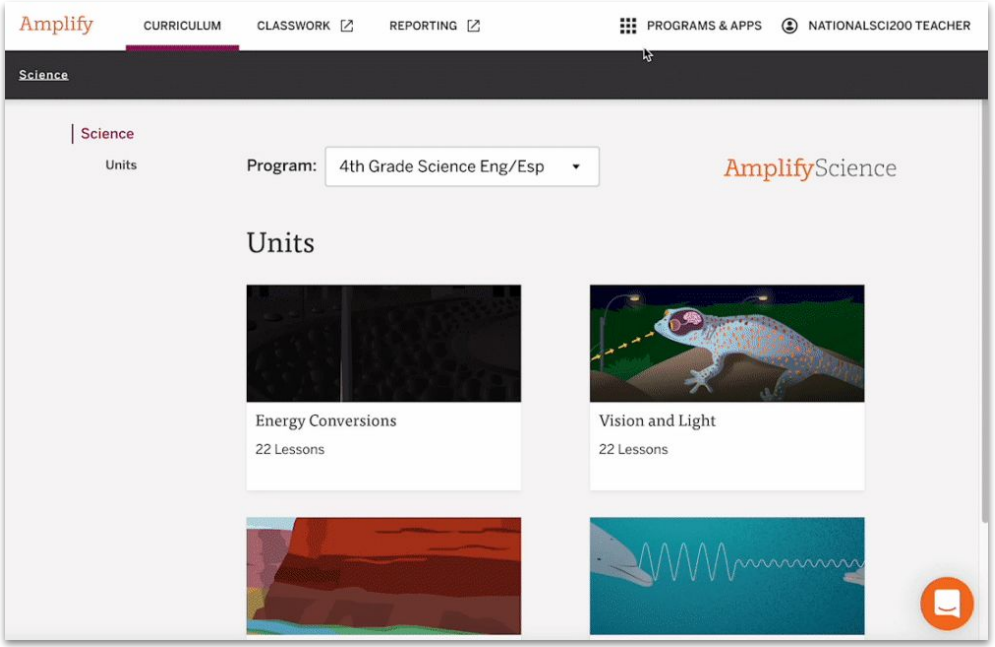




Explore the Program Hub

Familiarize yourself with the Program Hub.

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



Additional resources

Welcome, caregivers!

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

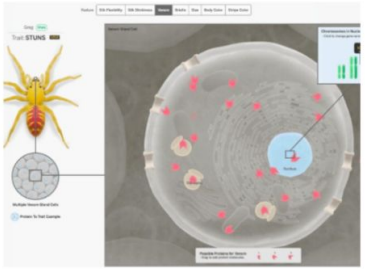
Para acceder a este sitio en español haga clic aquí.

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

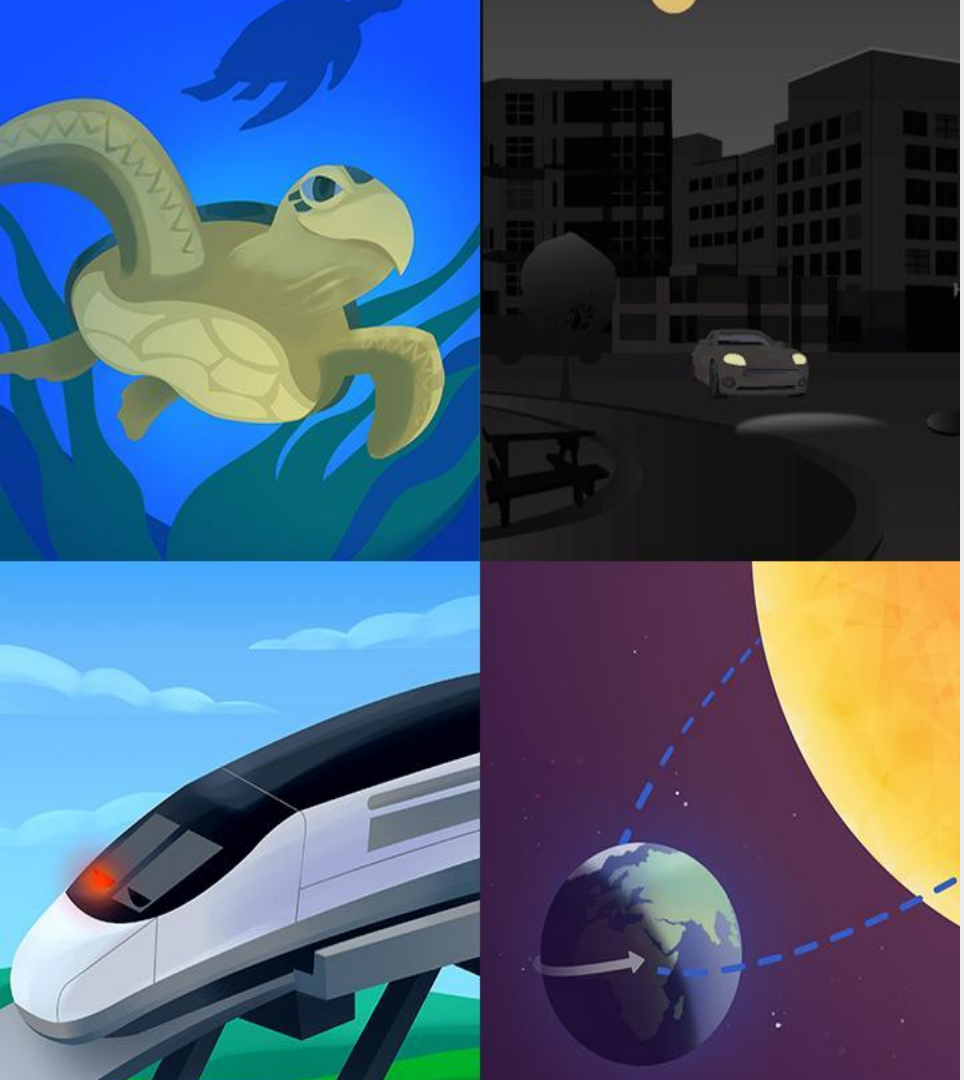
LAUSD Microsite- https://amplify.com/lausd-science

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!



Plan for the day: Part 1

- Introduction and Framing
- NGSS & 3D Learning
- 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 *Light and Sound*.
- ✓ 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

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

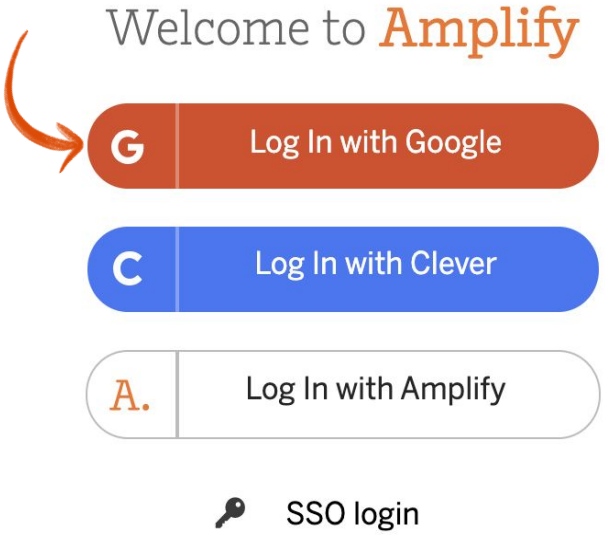
(insert email, if you would like)

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 Google**
3. If you're already logged in with other Google accounts, click **Use another account**
4. Enter teacher demo account credentials
   - californiasci17@pd.tryamplify.net
   - Password: AmplifyNumber1
5. Explore as we wait to begin

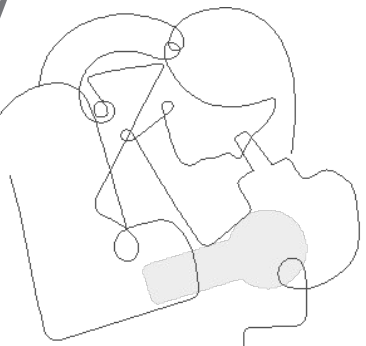


Amplify Science

Standard Curriculum Relaunch / Guided Planning

Grade 1: Light and Sound

Part 2



School/District Name: LAUSD
Date:
Presented by:

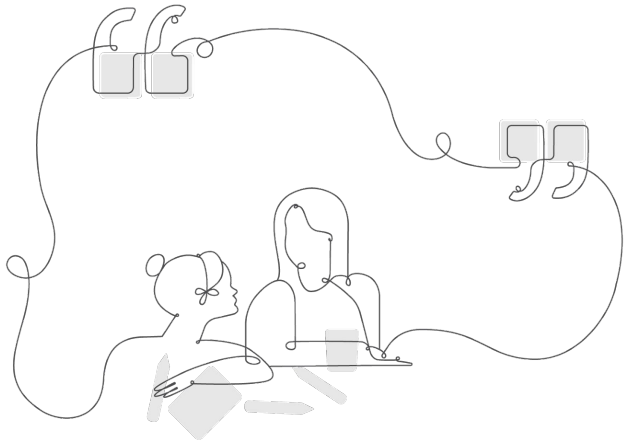
TOP RATED BY EDREPORTS

PLPG CERTIFIED PROVIDER

Onsite Upcoming Professional Development!

Part 3: Unit 2 - with a focus on assessments

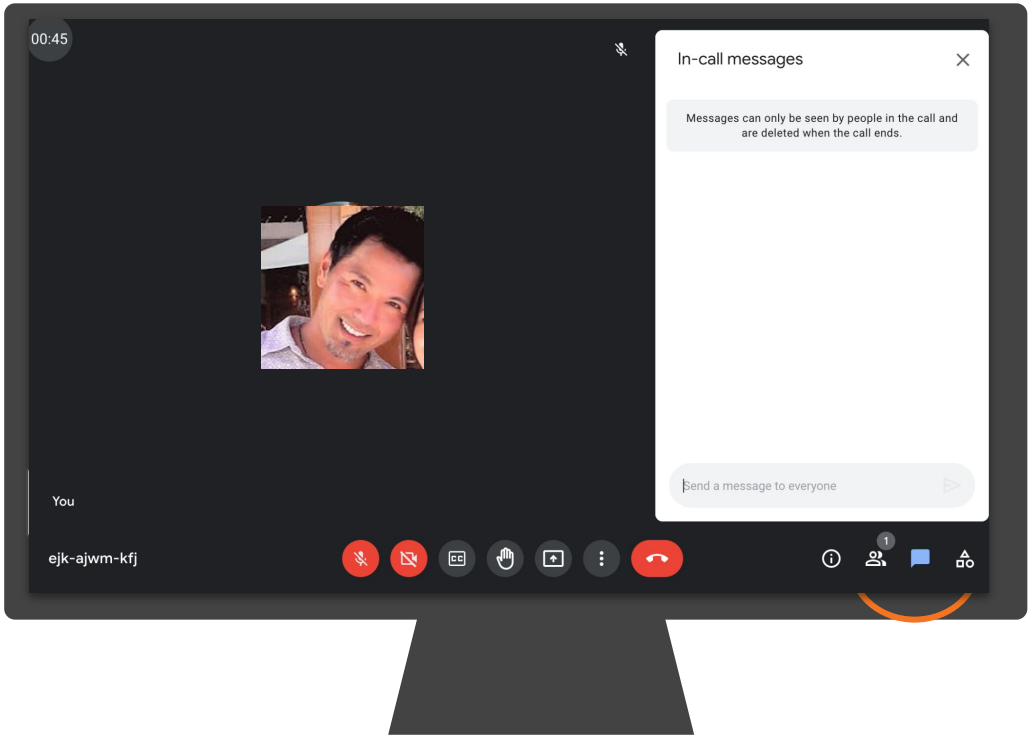
- December 3 (grades 3-6)
- December 10 (grades K-2)



Ice Breaker!

How do we feel?

- **Question:** Now that we have gone through Part 1, which aspects of Amplify Science do you feel more comfortable with or have a greater understanding of?



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.

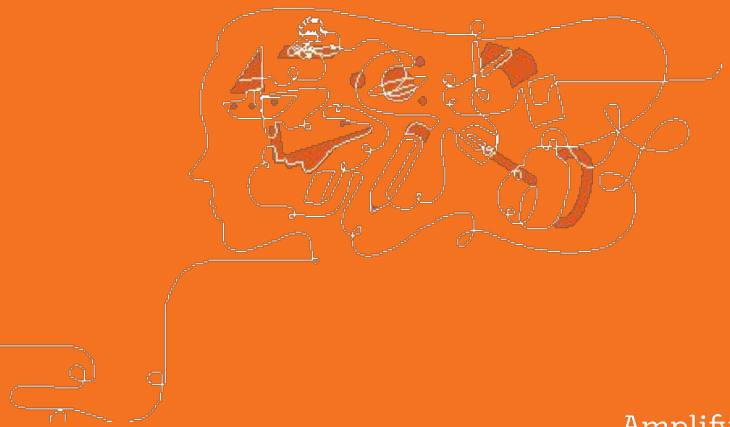
We share your goal of **inspiring all students to think deeply, creatively, and for themselves.**

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.

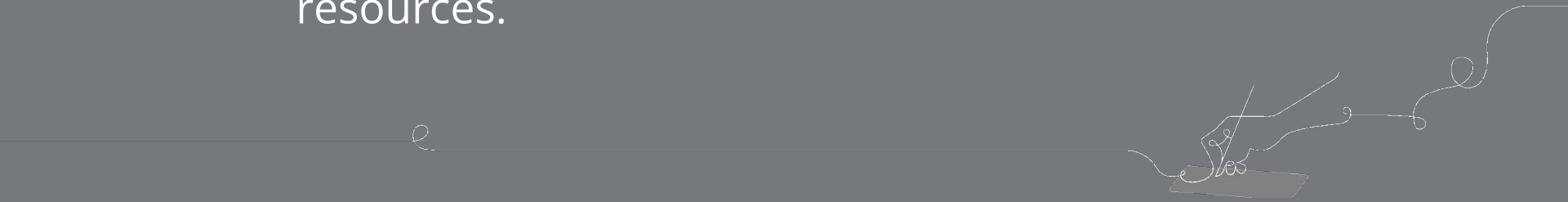
Part 2:
Guided Planning

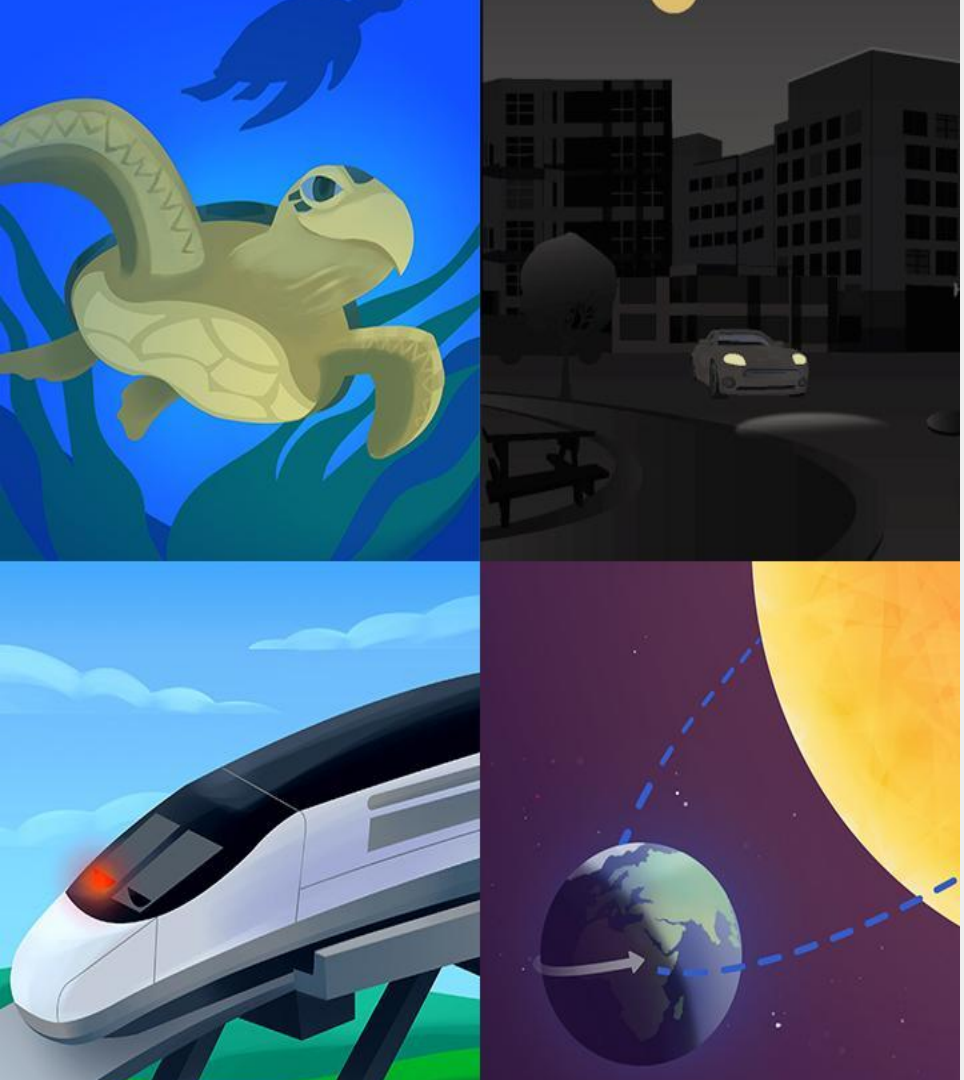


Overarching goals

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.





Plan for the day: Part 2

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

Light and Sound

Problem: How can students use light and sound to design shadow scenery and sound effects for a puppet theater?

Role: Light and Sound Engineer

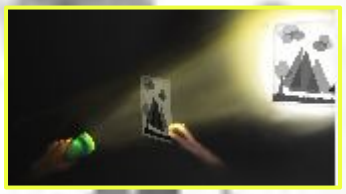
In this unit, students will take on the role of light engineers as they are challenged with a design problem to design, build, and then project a scene for a puppet show.

Coherent Storylines

How do we make brighter or darker areas on a surface?

How do we make a dark area in a bright puppet show scene?

How do we make bright, medium bright, and dark areas in a puppet show scene?



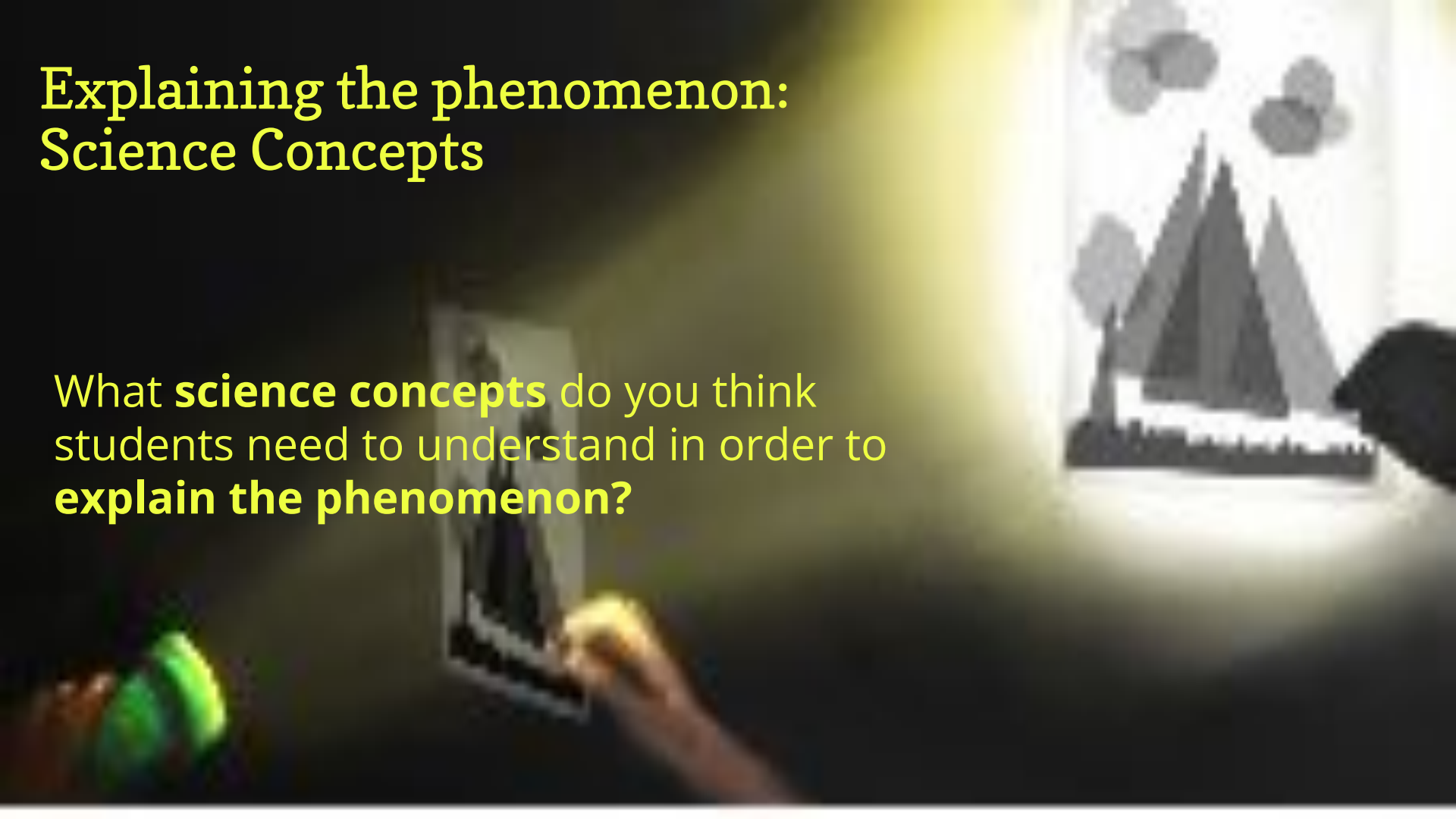
How do we design a sound source to go with a puppet show scene?

Pushes and Pulls

Unit Question: How do we make different parts of a surface brighter or darker?

Taking on the design problem of using light and sound to create a scene and sound sources for a puppet show provides the perfect opportunity to engage students in conducting systematic investigations, focused on predicting and testing, and in thinking deeply about cause-and-effect relationships.

Explaining the phenomenon: Science Concepts



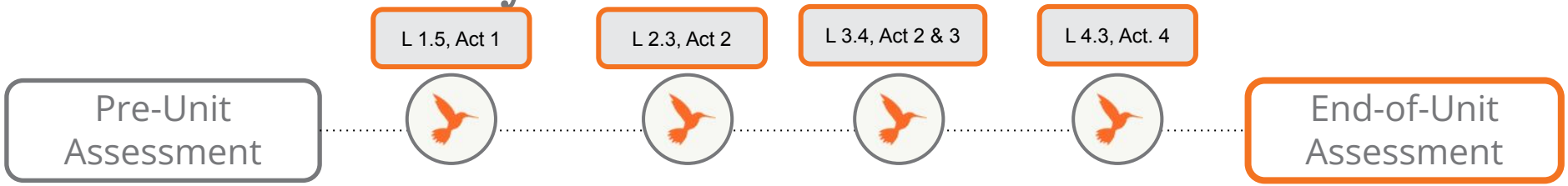
What **science concepts** do you think students need to understand in order to **explain the phenomenon?**

Progress Build

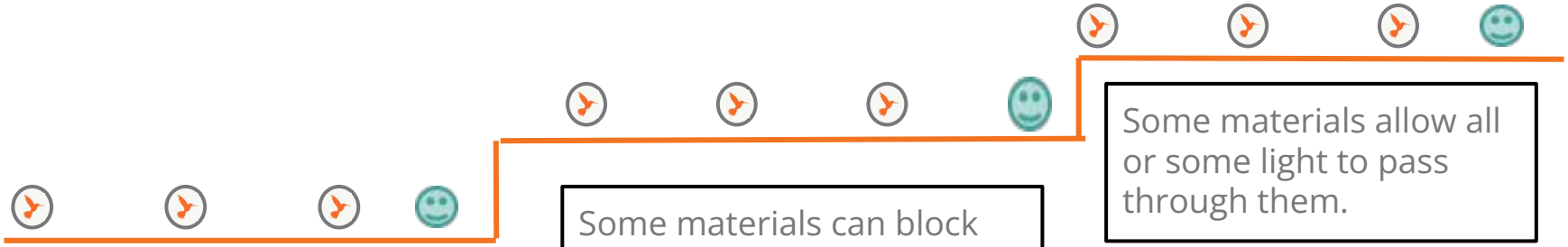
Light and Sound

Assumed prior knowledge (preconceptions): Students have likely had some direct or indirect experience with turning on and off overhead lights, lamps, or flashlights. They may also have some experience observing or creating shadows.

K-5 Assessment System

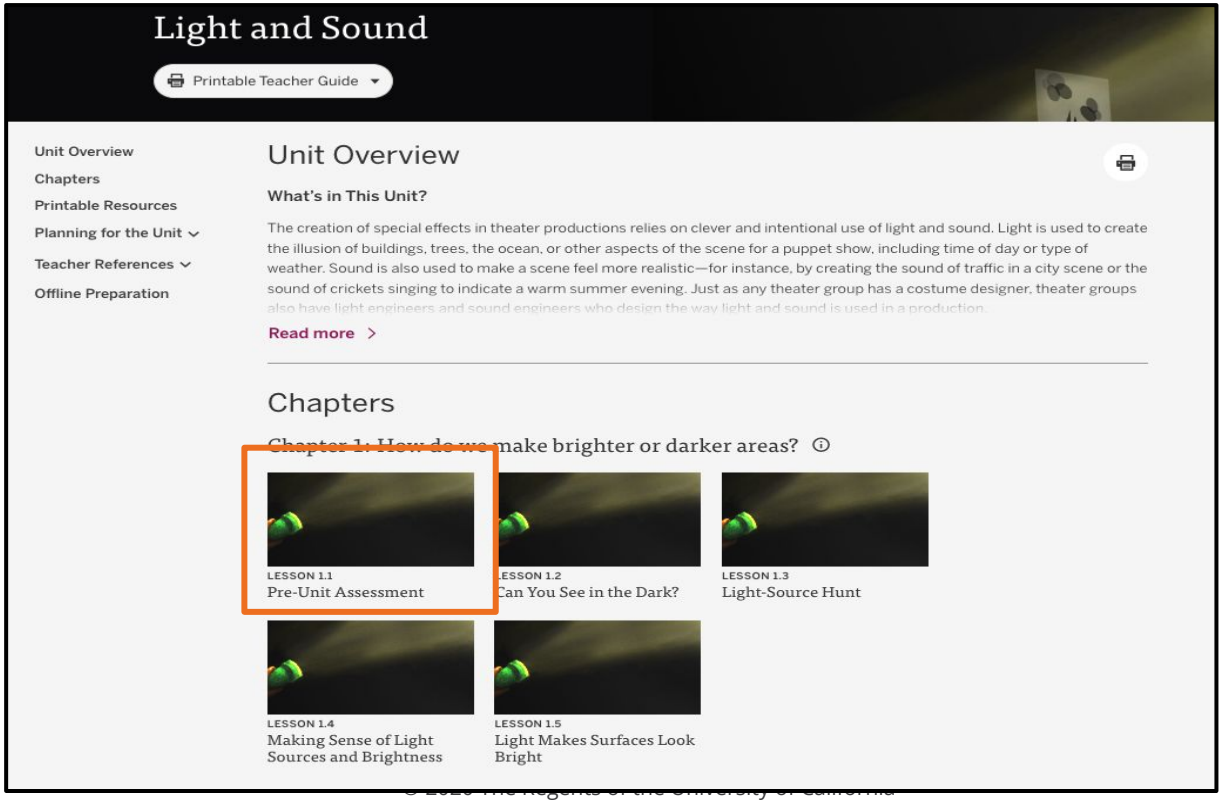


Critical Juncture Assessments

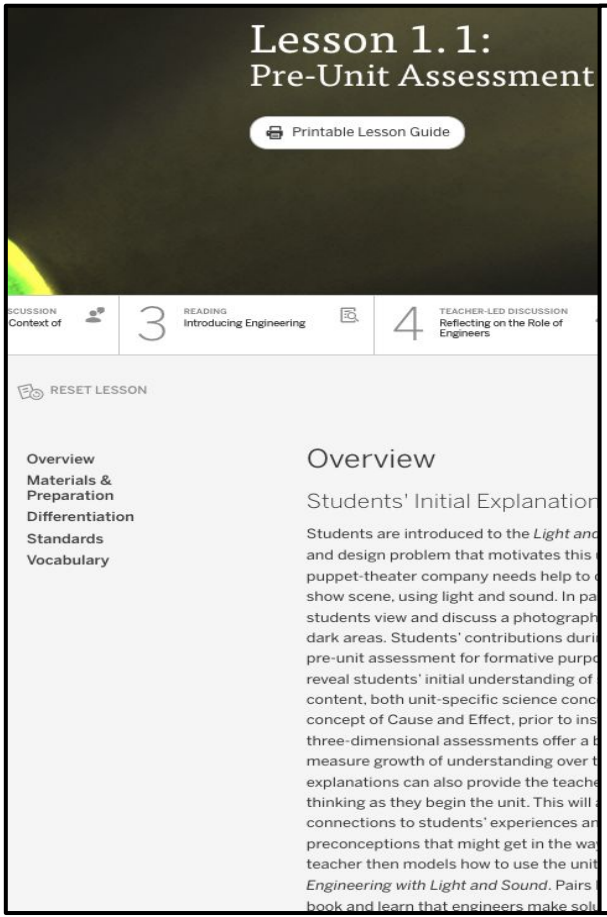


Beginning the Unit

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



Light and Sound Family Connections Letter



Light and Sound Family Connections Letter

Dear Families,

In science class, we are working as light and sound engineers to help a puppet-theater company design scenes for a puppet show. We'll be working to answer the question, *How do we make different parts of a surface brighter or darker?*

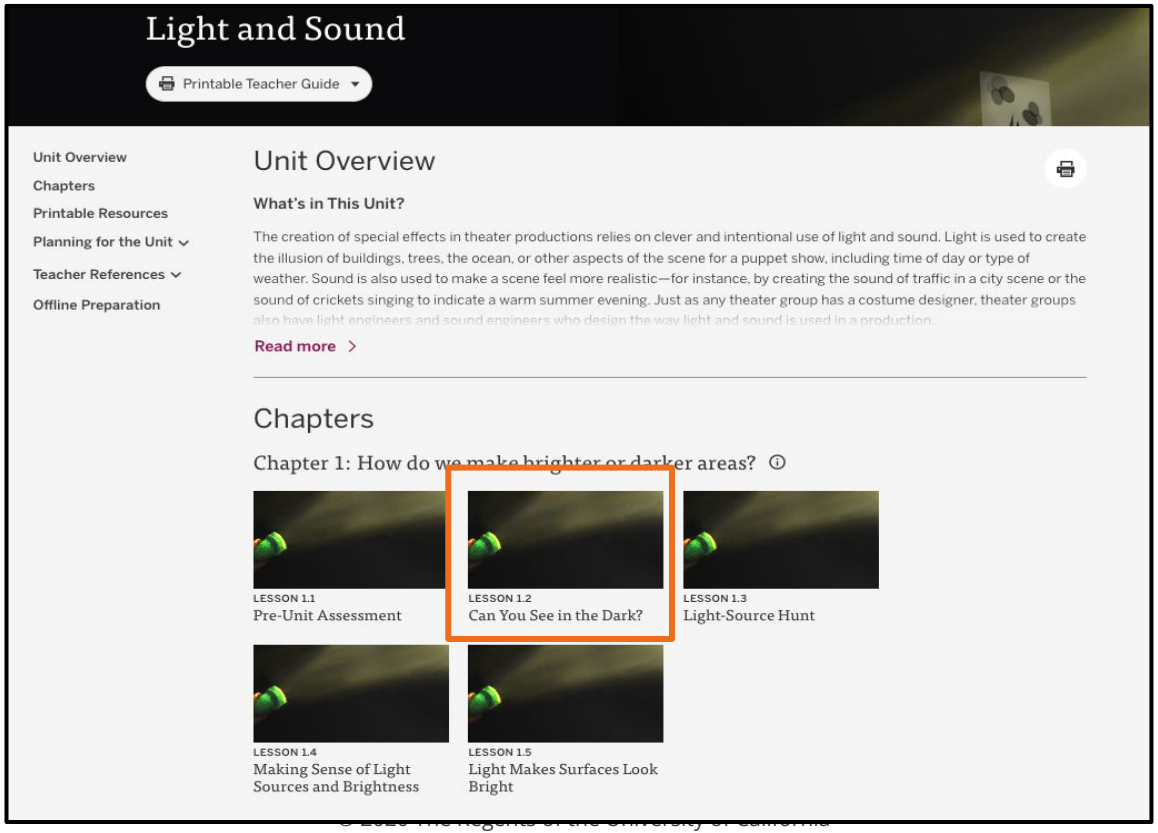
Sharing some of your own ideas, connections, expertise, or stories related to what we will be learning about can help prepare students for their work in science class. It can help students see that what we study in science is connected to their lives, families, and communities.

Use the following questions to think about your personal connections to students' science learning, then share them with your student.

- What does our work in science make you think of?
- Do you have any memories, stories, or experiences about something related to what we will be investigating?
- What have you heard or learned about these topics?
- What do you wonder?

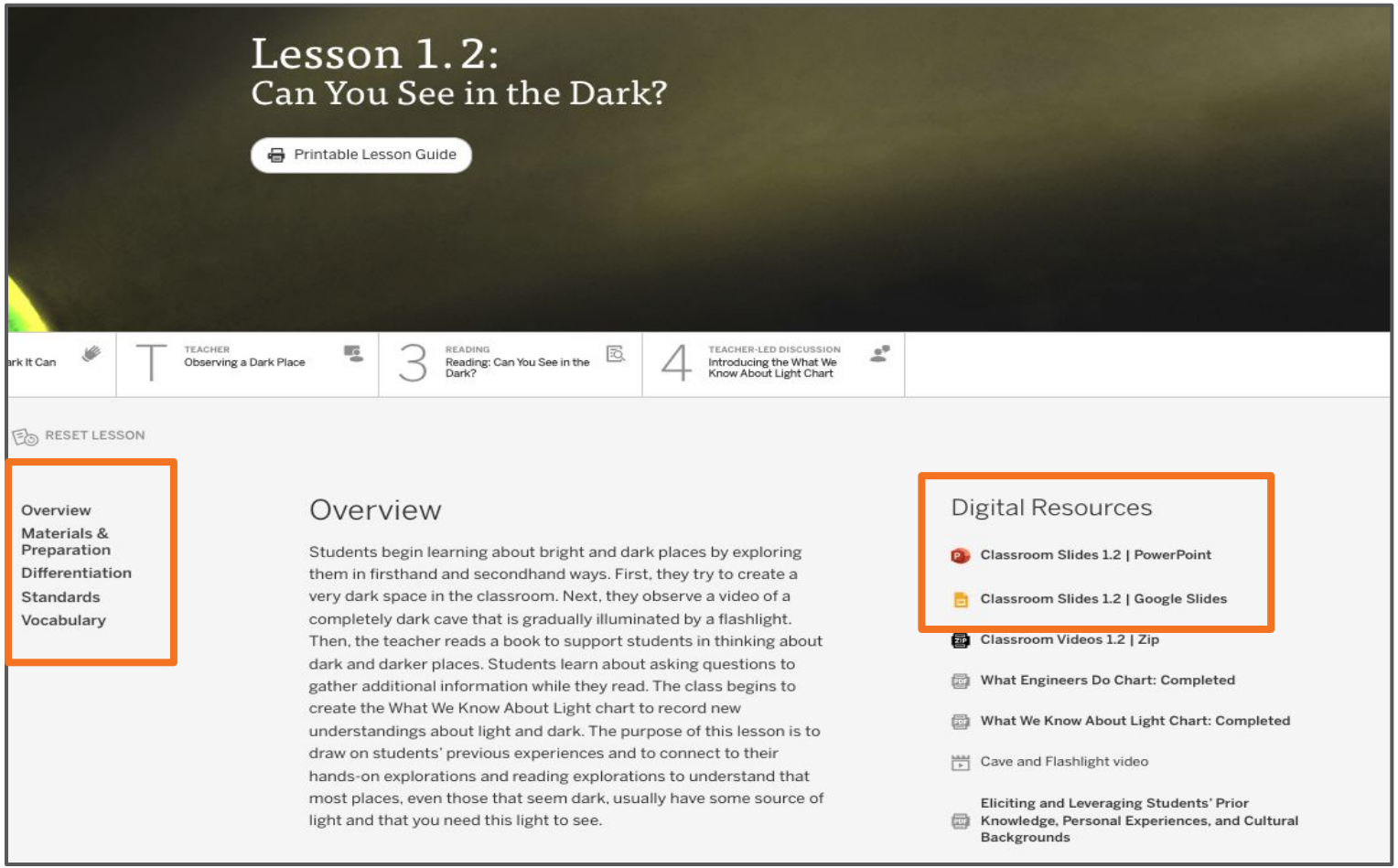
Beginning the Unit

We will be looking at Chapter 1, Lesson 2, for our model lesson.



Amplify.

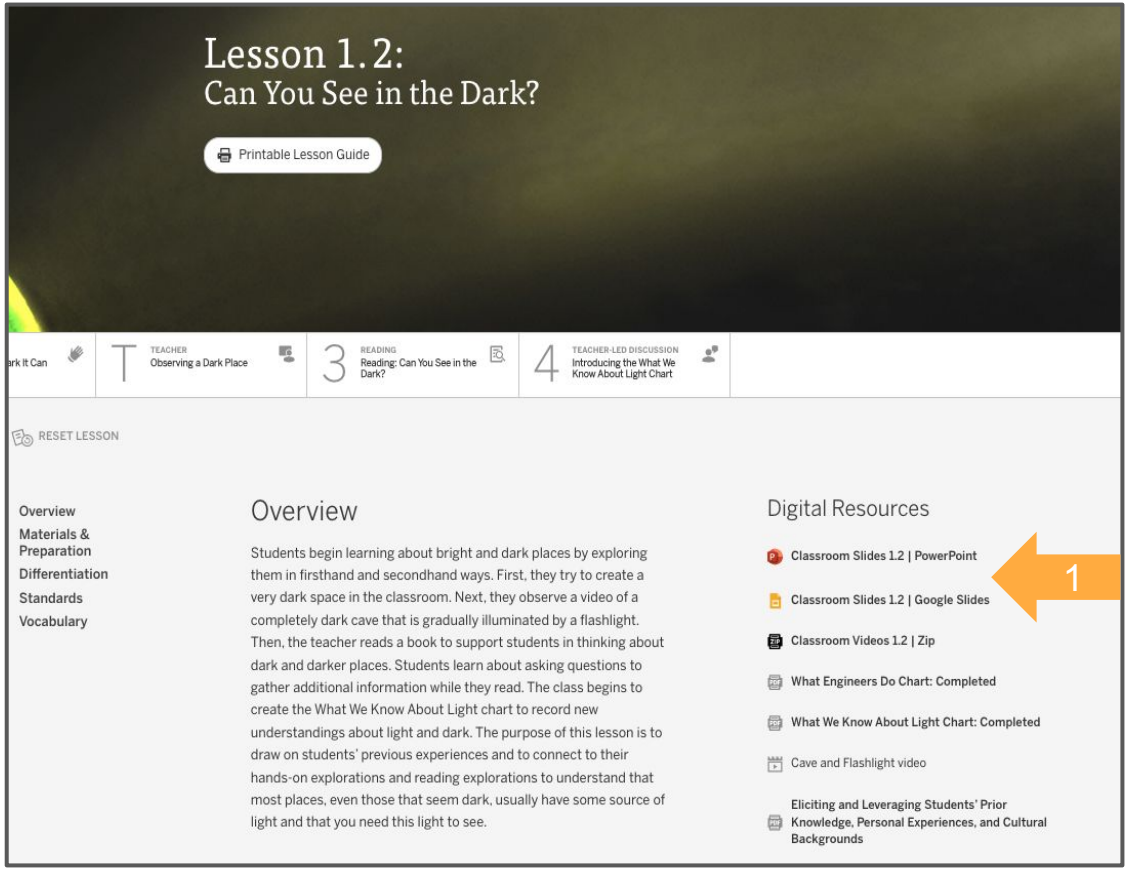
Preparing for Lesson 1.2 - Navigate to the Lesson Brief



Preparing for Lesson 1.2

Lesson Brief

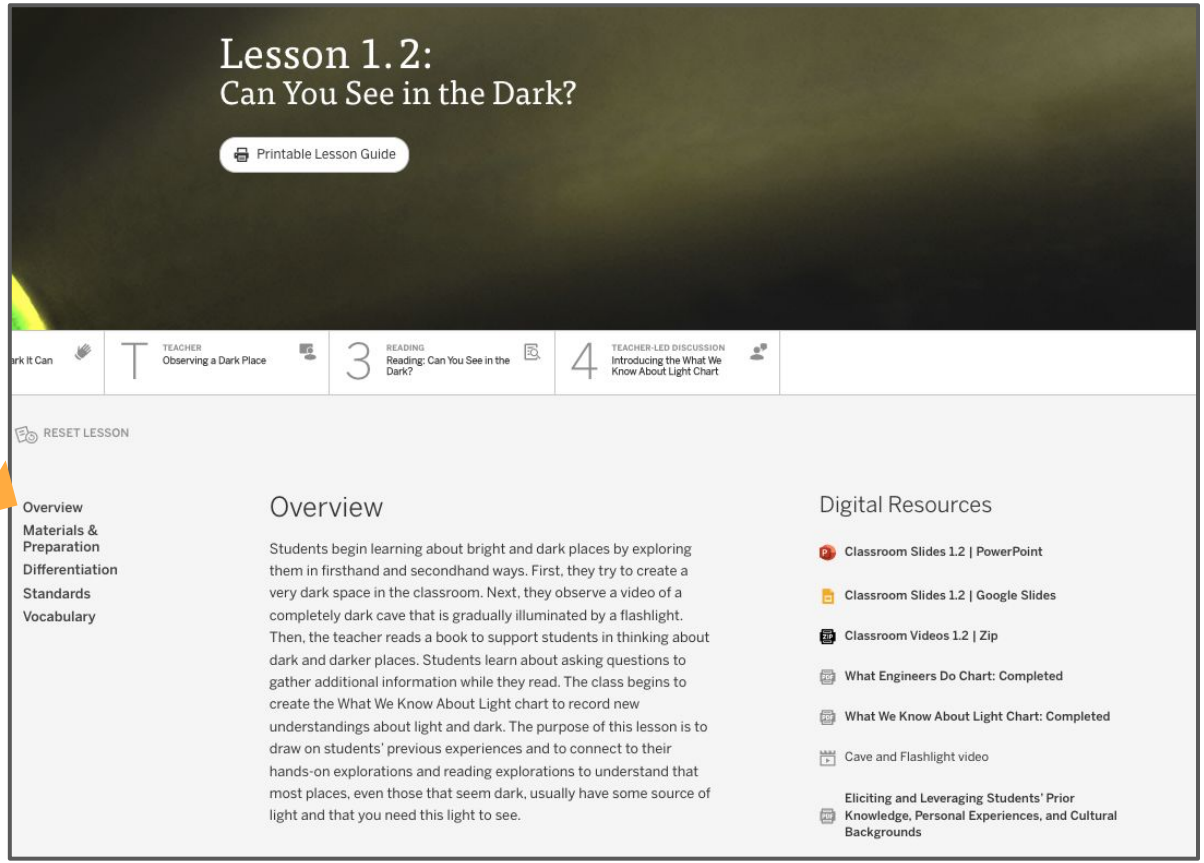
Download **Classroom Slides** for Lesson 1.2 and review them.



Preparing for Lesson 1.2

Lesson Brief

Read the **Overview.**



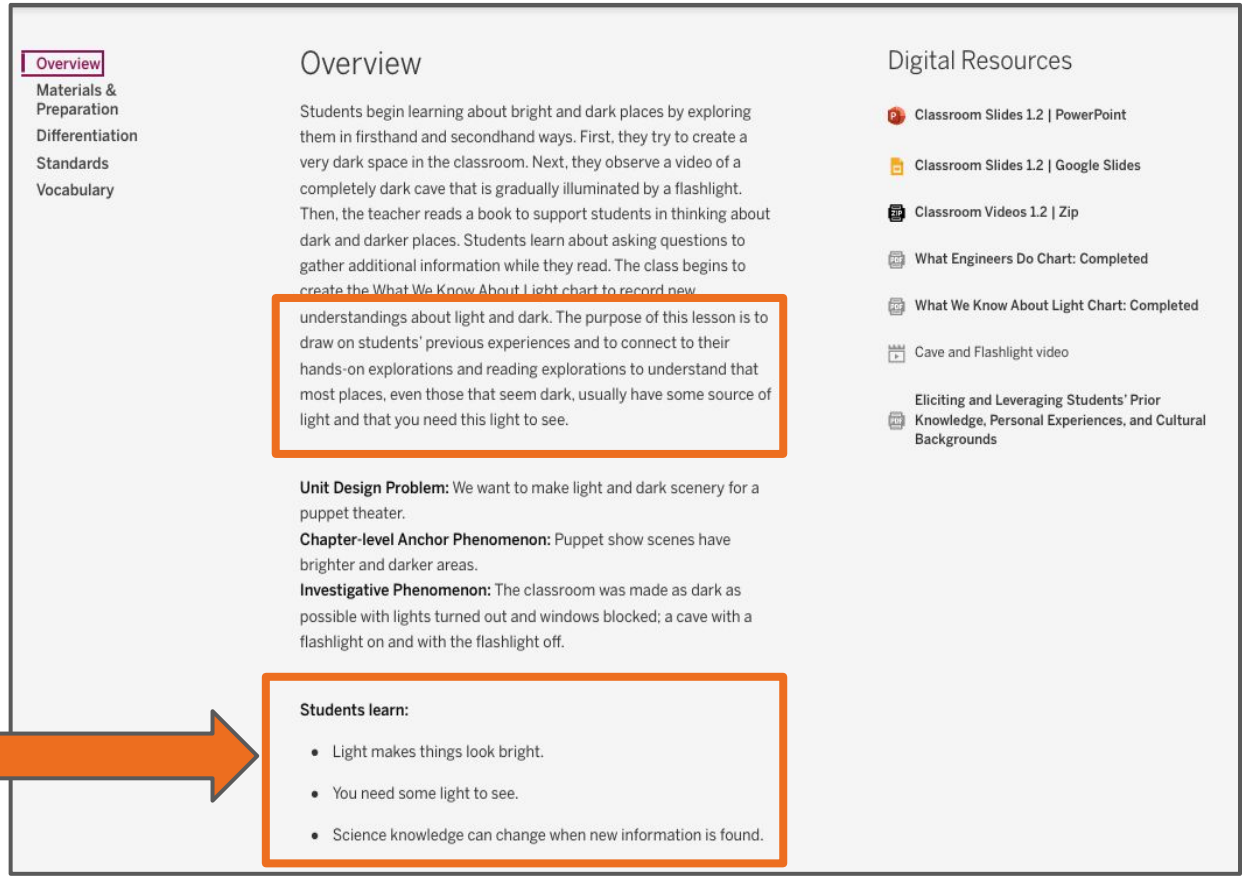
Preparing for Lesson 1.2

Lesson Brief

Read the **Overview.**

The Purpose of this Lesson: The purpose of this lesson is to draw on students'previous experiences and to connect to their hands-on explorations and reading explorations to understand that utmost places, even those that see dark, usually have some source of light and that you need this light to see.

Learning Objectives

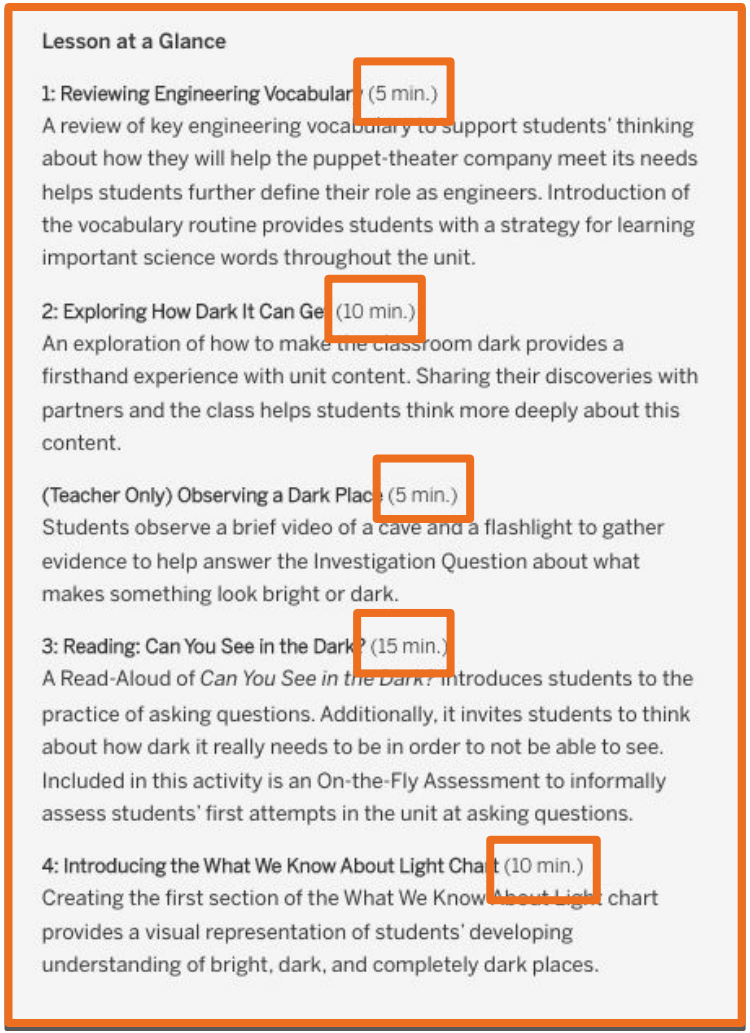


Preparing for Lesson 1.2

Lesson Brief

Read the **Overview.**

Lesson at a Glance - Pacing



Lesson at a Glance

1: Reviewing Engineering Vocabulary (5 min.)
A review of key engineering vocabulary to support students' thinking about how they will help the puppet-theater company meet its needs helps students further define their role as engineers. Introduction of the vocabulary routine provides students with a strategy for learning important science words throughout the unit.

2: Exploring How Dark It Can Get (10 min.)
An exploration of how to make the classroom dark provides a firsthand experience with unit content. Sharing their discoveries with partners and the class helps students think more deeply about this content.

(Teacher Only) Observing a Dark Place (5 min.)
Students observe a brief video of a cave and a flashlight to gather evidence to help answer the Investigation Question about what makes something look bright or dark.

3: Reading: Can You See in the Dark? (15 min.)
A Read-Aloud of *Can You See in the Dark?* introduces students to the practice of asking questions. Additionally, it invites students to think about how dark it really needs to be in order to not be able to see. Included in this activity is an On-the-Fly Assessment to informally assess students' first attempts in the unit at asking questions.

4: Introducing the What We Know About Light Chart (10 min.)
Creating the first section of the What We Know About Light chart provides a visual representation of students' developing understanding of bright, dark, and completely dark places.

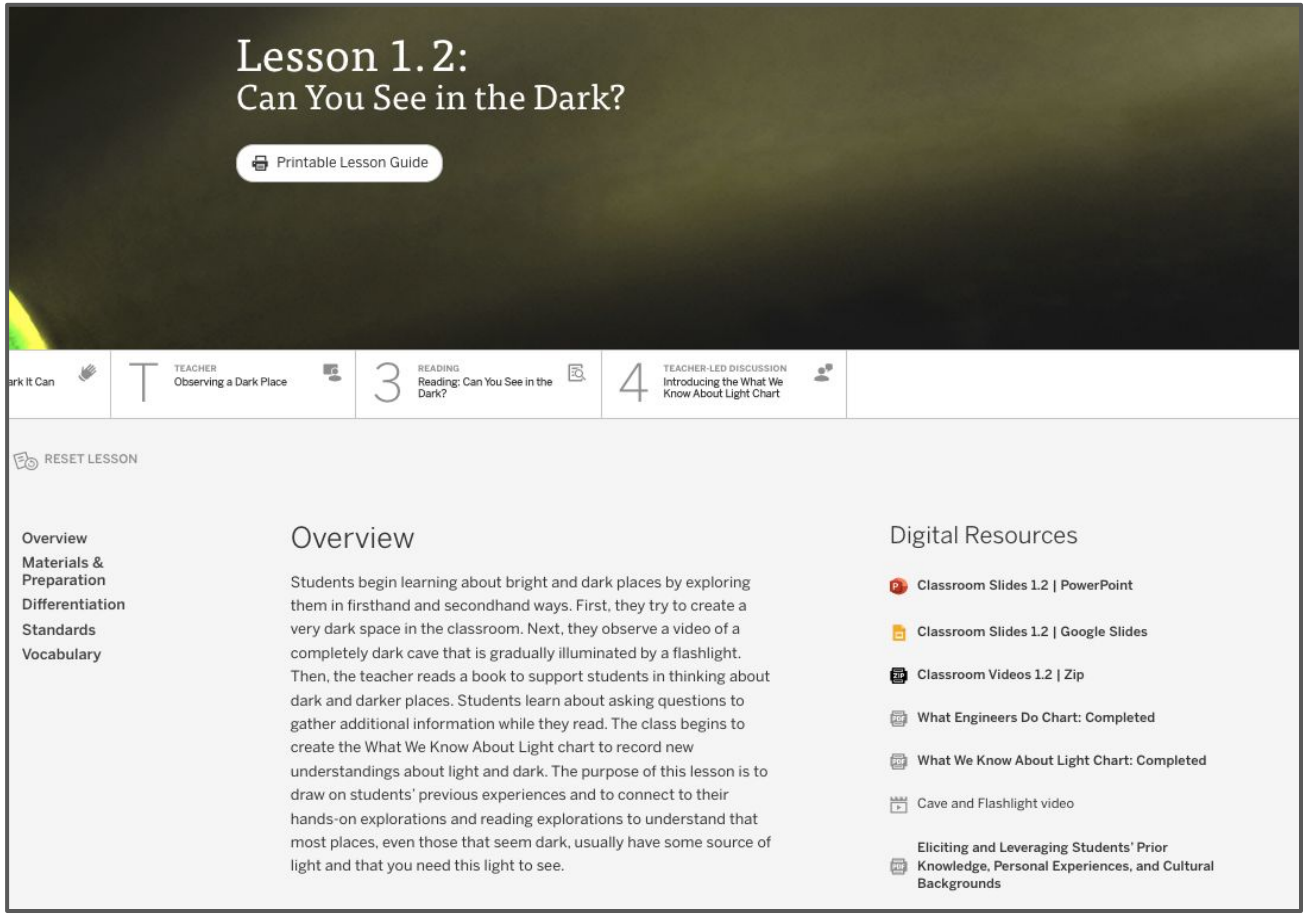
Planning for Pacing - Light and Sound (sample)

Day 1 ex.(20 min)	Day 2 ex. (40 min)	Day 3 ex. (30 min)	Day 4 ex. (15 min)	Day 5 ex. (45 min)
1.2: Can You See in the Dark? Activity 1: Reviewing Engineering Vocabulary (5 min.) Activity 2: Exploring How Dark It Can Get (10 min.) (Teacher Only) Observing a Dark Place (5 min.)	**1.2 Cont.** Activity 3: Reading: Can You See in the Dark? (15 min.) Activity 4: Introducing the What We Know About Light Chart (10 min.)	**1.3 Light-Source Hunt** Activity 1: Introducing Light Sources (10 min.) Activity 2: Introducing the Investigation Notebook (5 min.) Activity 3: Conducting the Light-Source Hunt (15 min.)	**1.3 Cont.** Activity 4: Debriefing the Light-Source Hunt (15 min)	**1.4: Making Sense of Light Sources and Brightness** Activity 1: (Wirting About Light-Source Observations (15 min.) Activity 2: Revisiting Can You See in the Dark? (15 min.) Activity 3: Introducing Cause and Effect (15 min.)

Preparing for Lesson 1.2

Lesson Brief

Review the **Materials & Preparation** document.



Preparing for Lesson 1.2

Lesson Brief

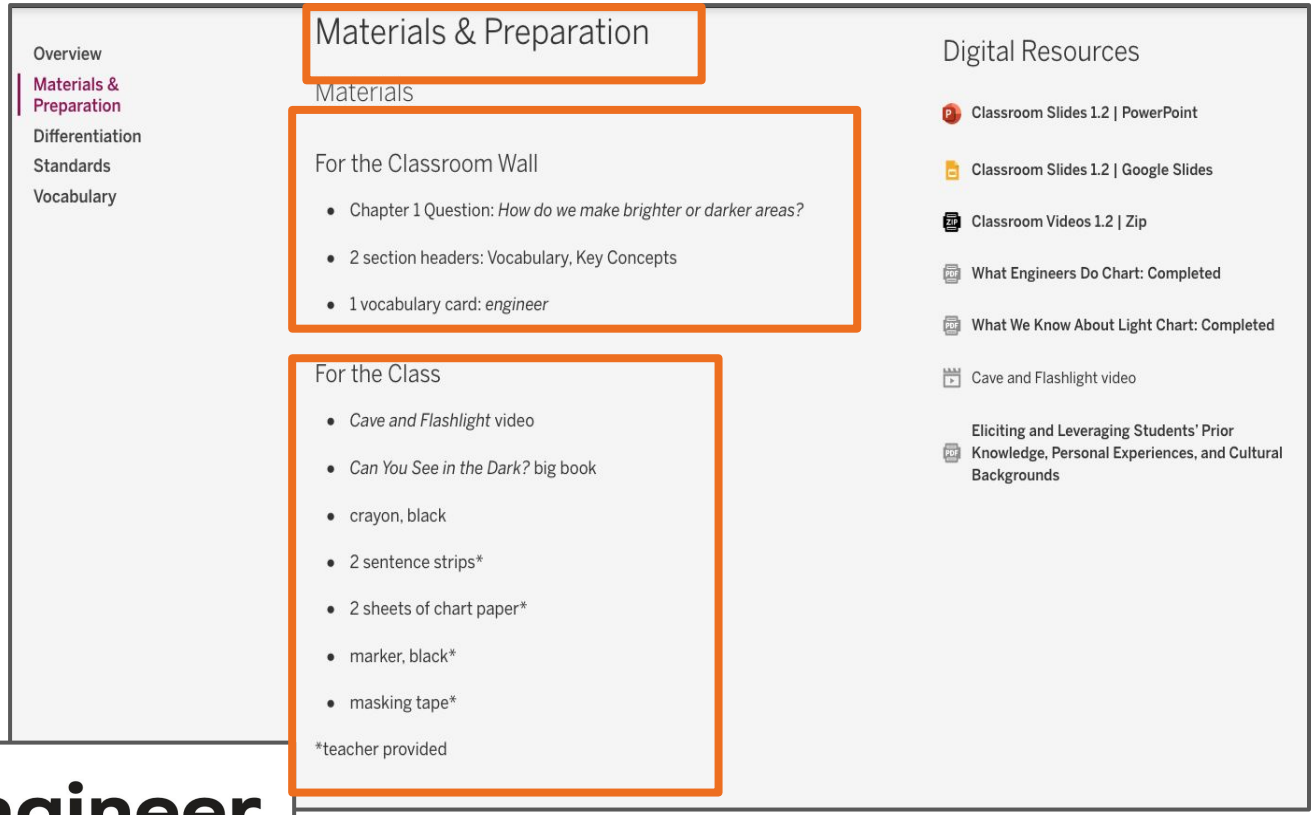
Review the **Materials & Preparation** document.

Chapter 1 Question
How do we make brighter or darker areas?

Vocabulary

Key Concepts

engineer



Overview
Materials & Preparation
Differentiation
Standards
Vocabulary

Materials & Preparation

Materials

For the Classroom Wall

- Chapter 1 Question: *How do we make brighter or darker areas?*
- 2 section headers: Vocabulary, Key Concepts
- 1 vocabulary card: *engineer*

For the Class

- *Cave and Flashlight* video
- *Can You See in the Dark?* big book
- crayon, black
- 2 sentence strips*
- 2 sheets of chart paper*
- marker, black*
- masking tape*

*teacher provided

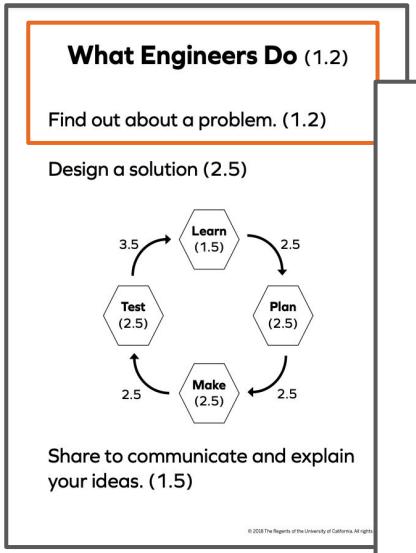
Digital Resources

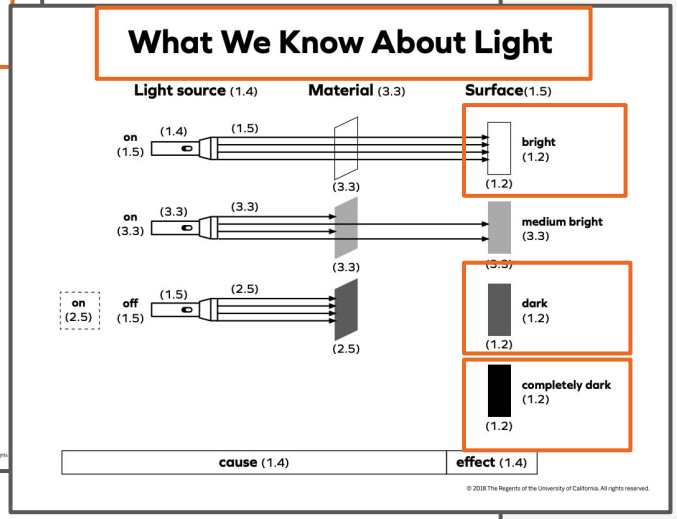
- Classroom Slides 1.2 | PowerPoint
- Classroom Slides 1.2 | Google Slides
- Classroom Videos 1.2 | Zip
- What Engineers Do Chart: Completed
- What We Know About Light Chart: Completed
- Cave and Flashlight video
- Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds

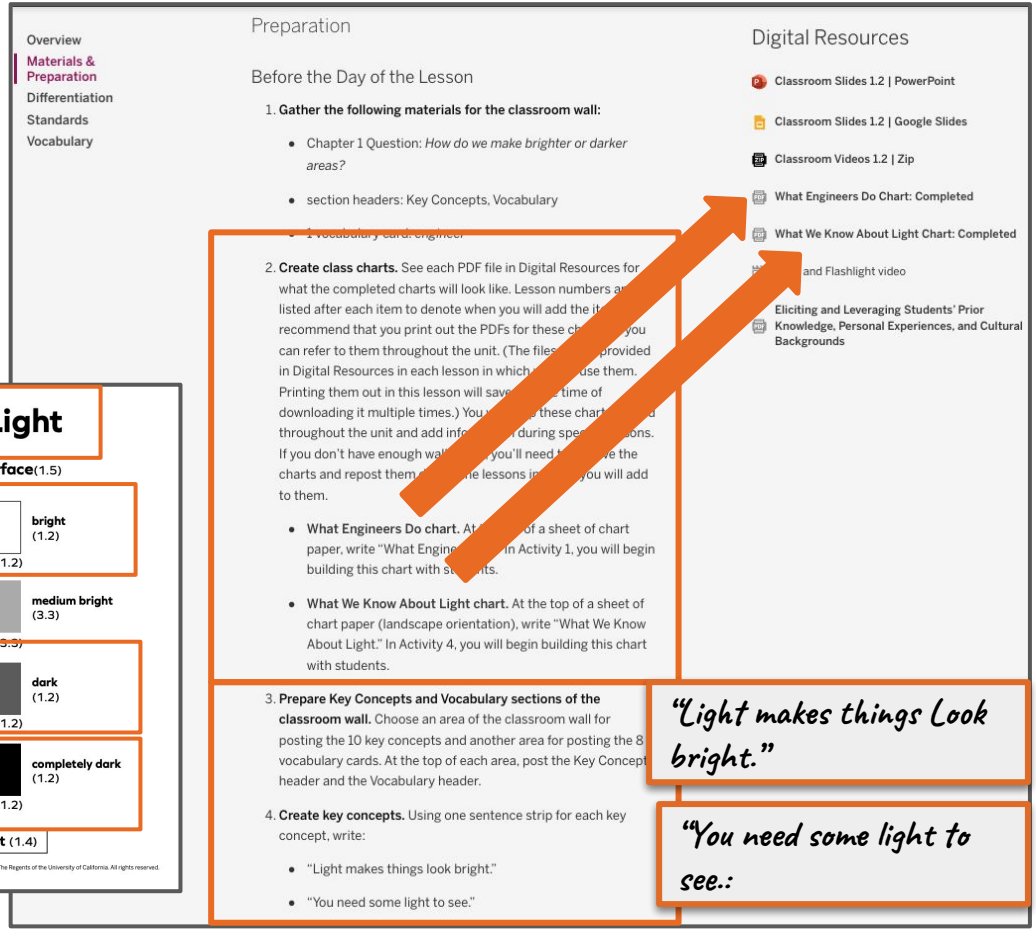
Preparing for Lesson 1.2

Lesson Brief

Review the **Materials & Preparation** document.

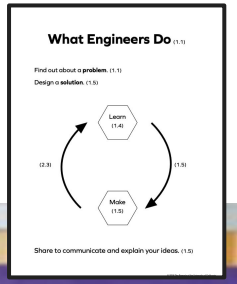






Light and Sound

Classroom Wall



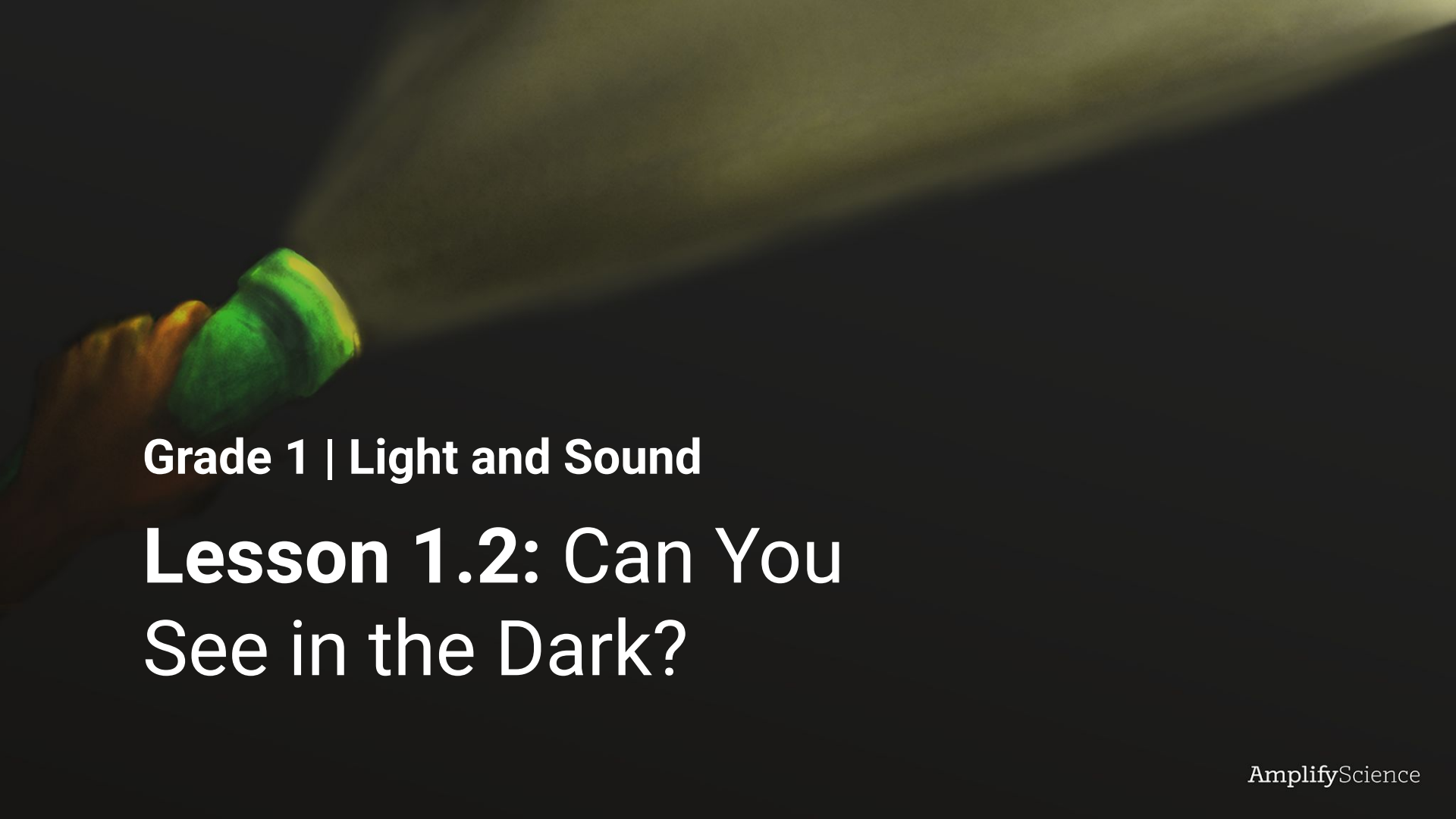
Problem: How can we use light and sound to design shadow scenery and sound effects for a puppet theater?

Unit Question

How do we make different parts of a surface brighter or darker?

Concept

Vocabulary



Grade 1 | Light and Sound

Lesson 1.2: Can You See in the Dark?

AmplifyScience

5 MIN

Activity 1

Reviewing Engineering Vocabulary

We use the word **problem** a lot. It has a lot of meanings.

The **puppet-theater company** has a problem. It is the type of problem **engineers** solve. When engineers talk about problems, they're talking about something someone wants or needs to do and cannot do.

What Engineers Do

This chart is a place where we can keep track of things that engineers do.

What Engineers Do

Find out about a problem.

One of the first things that engineers do is find out about a **problem.**

Let’s talk more about the puppet-theater company’s problem.

When engineers hear about a problem, they try to make a solution.

What do you think the puppet-theater company needs you to do?

I think the Puppet-theater company needs to _____.

Vocabulary

engineer

a person who makes something to solve a problem

15 MIN

Activity 2

Exploring How Dark It Can Get

Chapter 1 Question

How do we make brighter or darker areas?

Before we can make a **solution** for the puppet-theater company, we need to learn more about **light**.

In the last lesson, we saw pictures of different **light** and **dark** places.

Investigation Question:

What makes something look bright or dark?

Share **places** you know that are **very bright** and **places** you know that are **very dark**.

A place I know that is very bright is _____.

A place I know that is very dark is _____.

I wonder if you can see anything at all in a very dark place.

How could we make it **very dark** in our **classroom?**

We can make our classroom dark by _____.

Try to Make It Very Dark

1.
Cup your hands over your eyes.

2.
Try to look at something on your table, like a crayon.

Let's discuss trying to make it completely dark.

Did you make it completely dark? What did you do to make it completely dark?

To make it completely dark, I _____.

Scientists and engineers look for **evidence**. Evidence is information that helps you figure out an answer to a question.

Trying to make it dark in our classroom gave us some evidence to answer our question.

We will gather more **evidence** from a video.

Let's **share** what we **noticed**.

Then I'll play the video a **second time**, and we will pay attention to when the cave looks **dark,** and when it looks **bright**.

What was happening when the cave looked dark and when it looked bright?

When the cave looked dark, it was _____.

When the cave looked bright, it was _____.

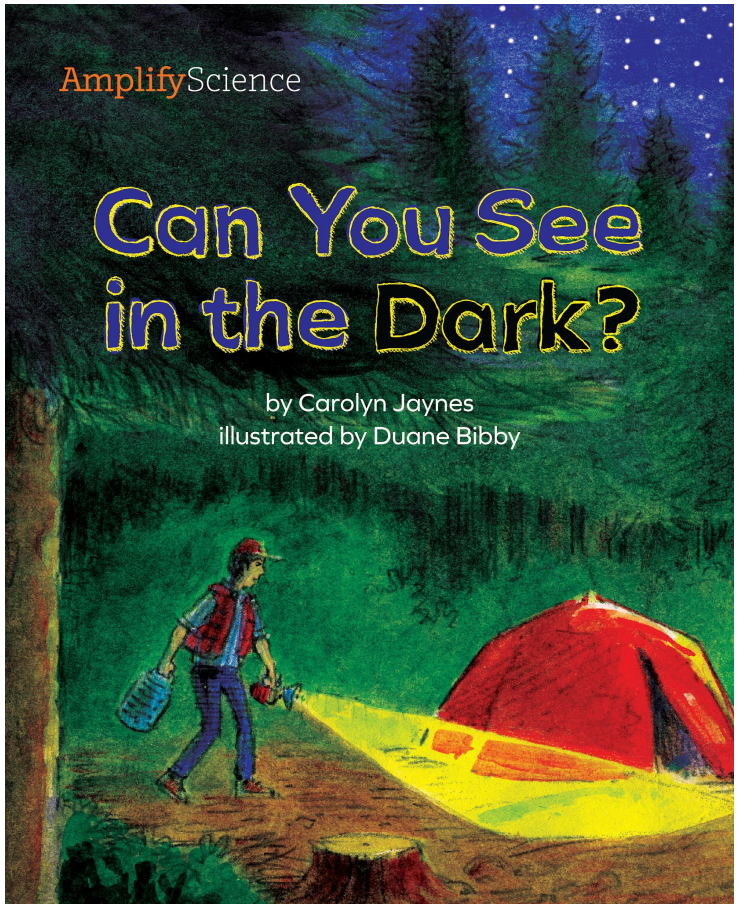
At first, the cave was **dark** and we could not see anything. When the person shined the **flashlight**, we could see things in the cave.

The video gave us more **evidence** about what makes something look bright or dark.

We will gather more evidence from a **book**.

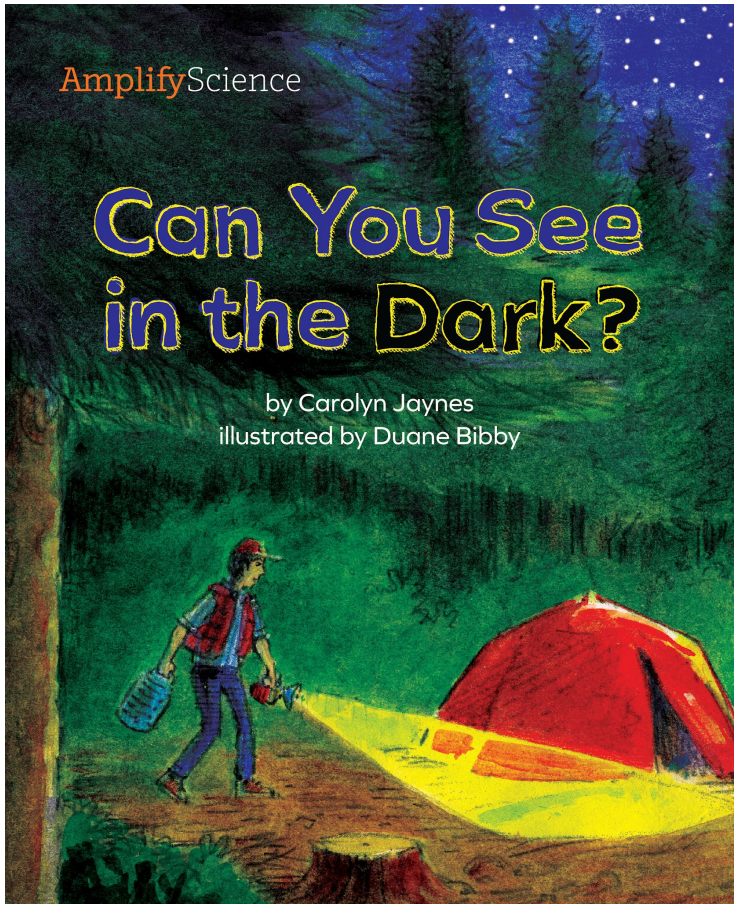
Activity 3

Reading: Can You See in the Dark?



We will read this book together and think about **what we wonder**.

We will **ask questions** and look in the book for **evidence** that helps us answer our questions.



This title is already a **question**. It makes me wonder, are there places so dark that you cannot see?

Let's talk about the **illustration** on the cover.

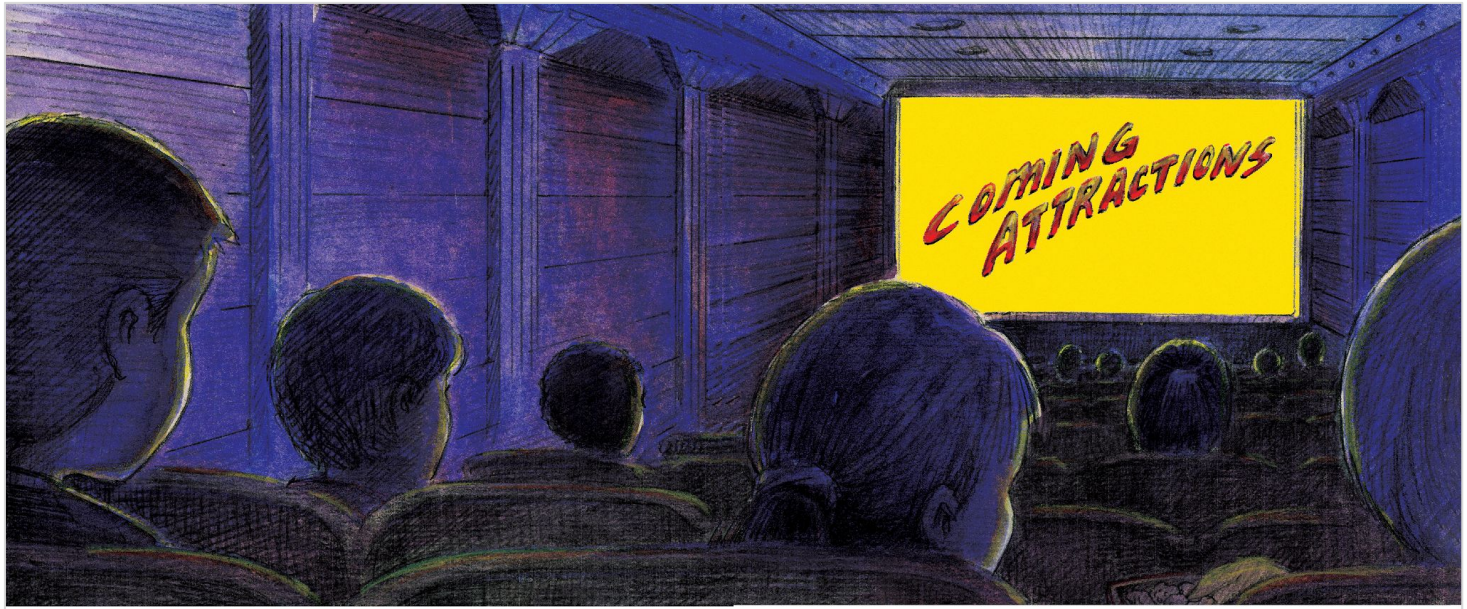
Can you see in the dark?

Do you need light to see?

To find the answer, you need **evidence**. And the only way to get the evidence you need is to find a place that's completely dark, with no light at all.

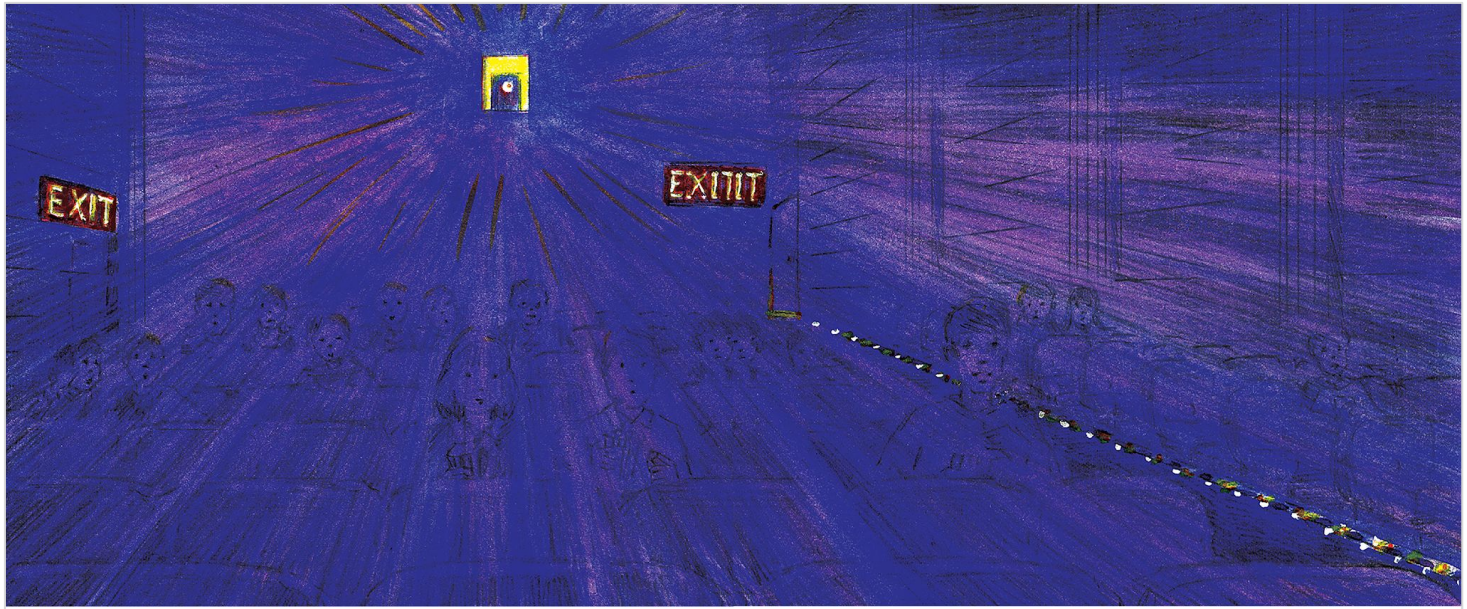
Think of some dark places. Can you see in those places? You can find your way to the bathroom after bedtime without turning on a light. You can see empty seats in a dark movie theater.

But are those places completely dark? Is there any light there at all?



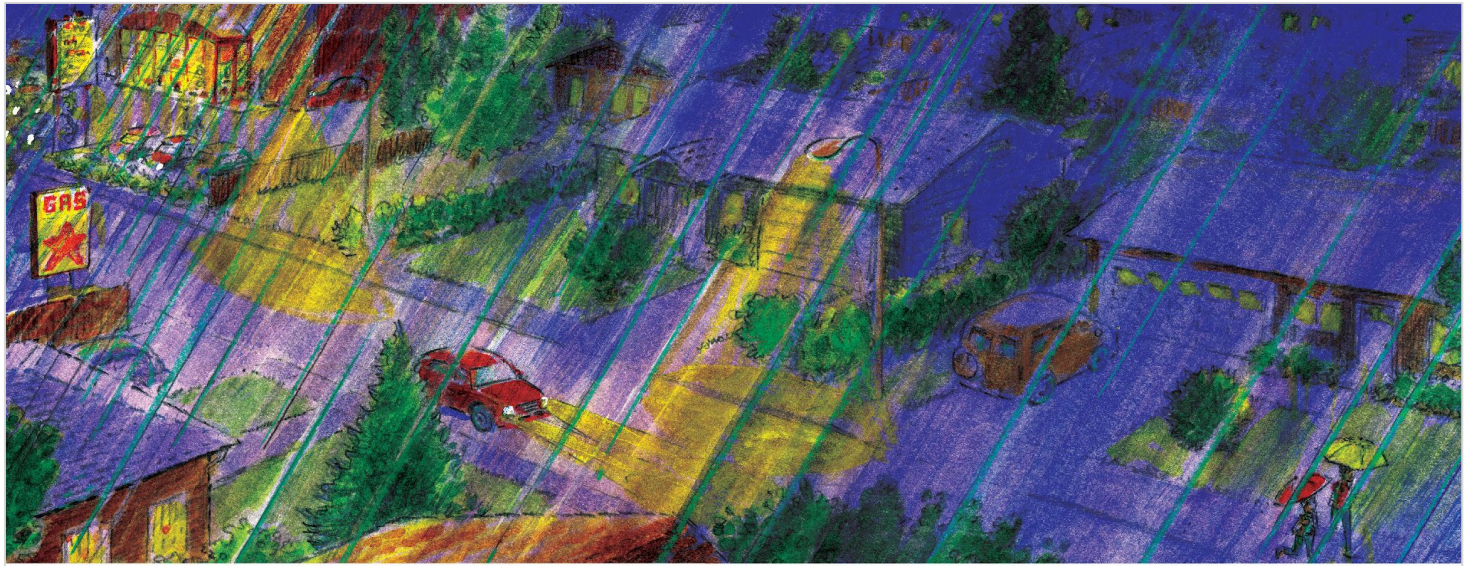
To find out whether you need light to see, you have to find a place with no light—none, nada, zero, zilch.

Think of a movie theater. You walk in after the movie starts. It is hard to see, but you can still find a seat. You can see a little bit. Is there any light in the theater?



What do you **observe**? You may see little lightbulbs on the floor next to the seats. Behind you, you can see light coming from the movie **projector**.

Light does not just float around. It has to come from somewhere. A place where light comes from is called a light **source**. The lightbulbs on the floor are a light source. The movie projector is also a light source.



Even though the movie theater seems dark, there is some light. The theater is not completely dark. You don't have the evidence you need yet. To find out whether you need light to see, you have to find someplace darker to observe.

You walk out of the theater. It is a rainy night. Is it completely dark? Can you find any light?

On the walk home, you notice light from many sources: streetlights, car headlights, and the glowing sign at the gas station. You can see, but that is not evidence that you can see in the dark. It is nighttime, but it is not completely dark!

Think of a darker place. You can go camping in the middle of the woods, where there are no streetlights or headlights.

Is it completely dark? Can you find any light?

10

Yes, the campfire is a source of light! Your flashlight is a source of light, too.

11

When the fire goes out and you turn off the flashlight, it gets much darker.

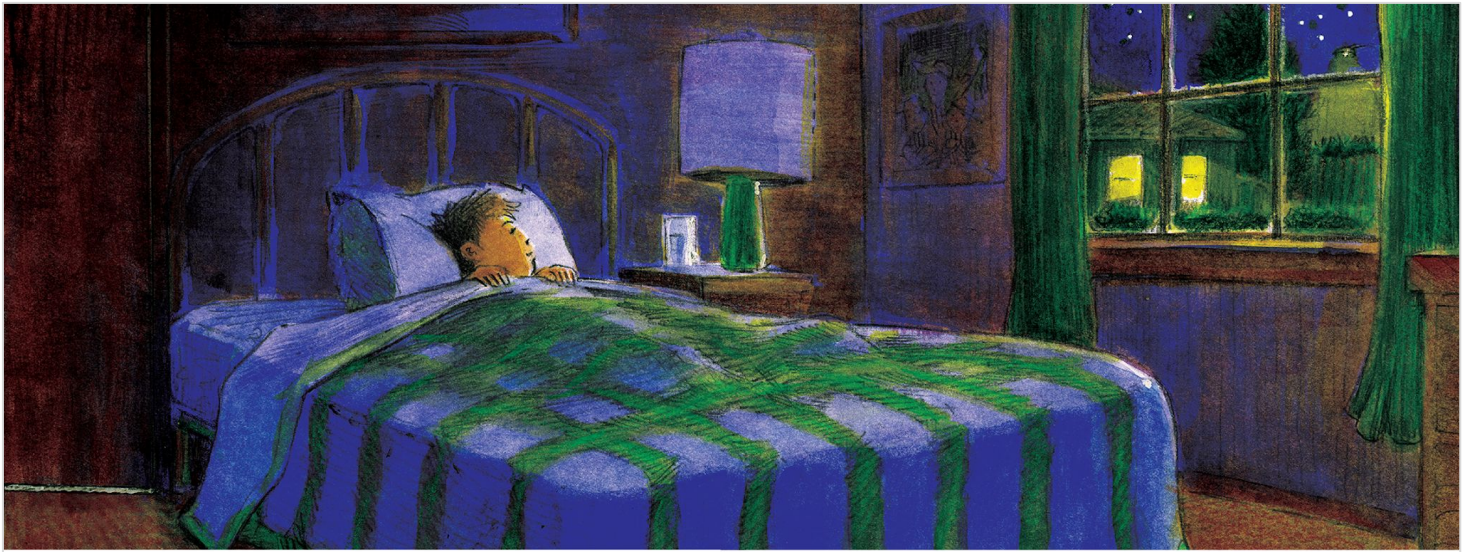
Is it completely dark? Can you find any light?

Look up in the sky. What do you observe? Up there are thousands of light sources: the stars. Even in the middle of the forest at night, it is not completely dark. You cannot get the evidence you need to answer your question here.

What do you wonder about the **light** and the **dark**?

One thing I wonder about is _____.

I wonder about _____ and _____.

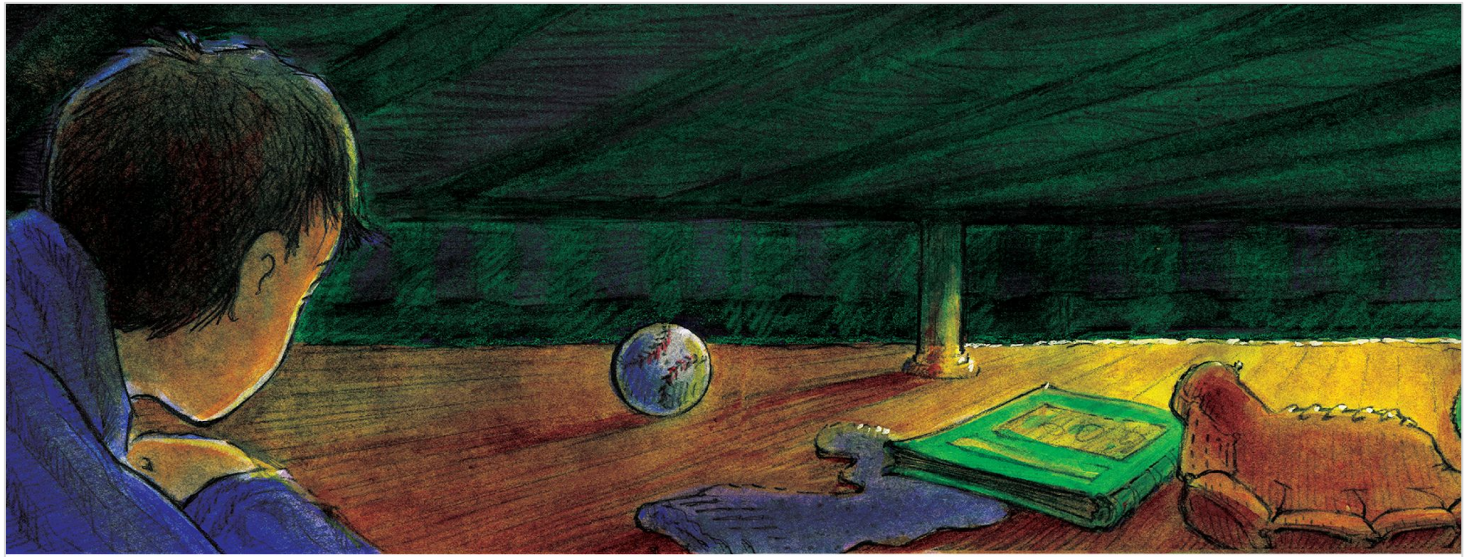


Back at home, your bedroom may seem completely dark when you turn off the lights.

Can you see? Maybe you see a glass of water on the table next to your bed. Maybe you can count the stripes on your bedspread.

Is it completely dark? Can you find any light?

You see some light from a streetlight and from the neighbors' house coming through the window. Your room is not completely dark after all. Being able to see in your bedroom at night is not really evidence that you can see in the dark.



Can you imagine a place that is completely dark, with no light from any source?

You crawl under your bed. You remember how dark it was under there when you played hide-and-seek.

Is it completely dark? Can you find any light?

In a few seconds, you start to see things. You can see a sock that has been missing for a month. Does this mean you can see in the dark?

You look around. Light from the neighbors' house and the streetlight outside your window is also getting under your bed. You have to find someplace darker.

You scramble into your closet and shut the door. "Yes," you think, "I found a place that is completely dark! No light is getting in here from any source!" You can just barely see your hand if you hold it in front of your face.

Is it completely dark? Can you find any light?

18

You notice a crack under the door, where light from outside is getting in. You still don't have the evidence you need. You still cannot prove whether or not you need light to see.

19

A few days later, you go on a field trip to a cave. The tour guide leads you into the cave. It is dark in here—really dark.

Deep in the cave there is no light from the sun. This may be the perfect place to **test** whether you can see in the dark.

The tour guide is talking about how caves are formed. But you are wondering how dark the cave could get. You finally get a chance to ask. The tour guide says, "I'll show you. I'm going to turn off the lights for a minute."

She turns off the lights, and everything is black. You look around for sources of light, but you do not see any. In fact, you cannot see anything at all. Just to be sure, you wait . . .

. . . and wait . . . but you never see anything.

A smile crosses your face. None of your classmates can see the smile, even though they are standing right in front of you. Still, you know the smile is there because you can feel it.

22

You finally have the evidence you need. You have found a place that is completely dark. There is no light from any source. It is completely dark, and you cannot see in the dark.

If you can see anything, it is because of light. You need light to see!

23

We have **evidence** that helps us figure out if you can see in the dark.

It was **completely dark** in the cave in the video, and it was completely dark in the cave we observed in the book.

There was **no light anywhere**.

10 MIN

Activity 4

Introducing the What We Know About Light Chart

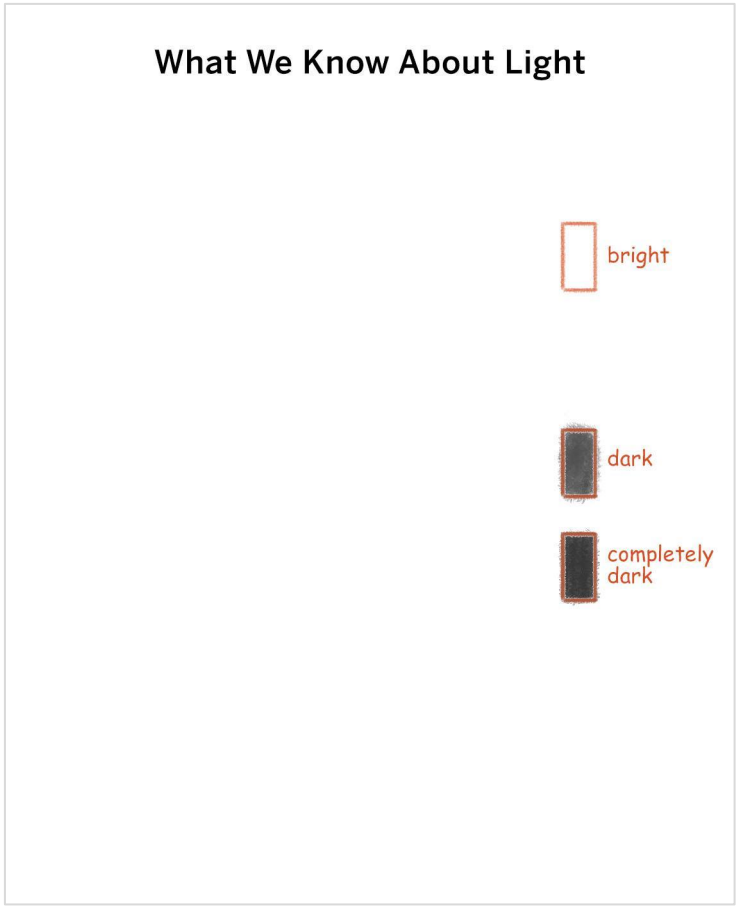
What We Know About Light

When scientists and engineers learn something new, their **science knowledge** changes.

We will use this **chart** to show what we learn.

What We Know About Light

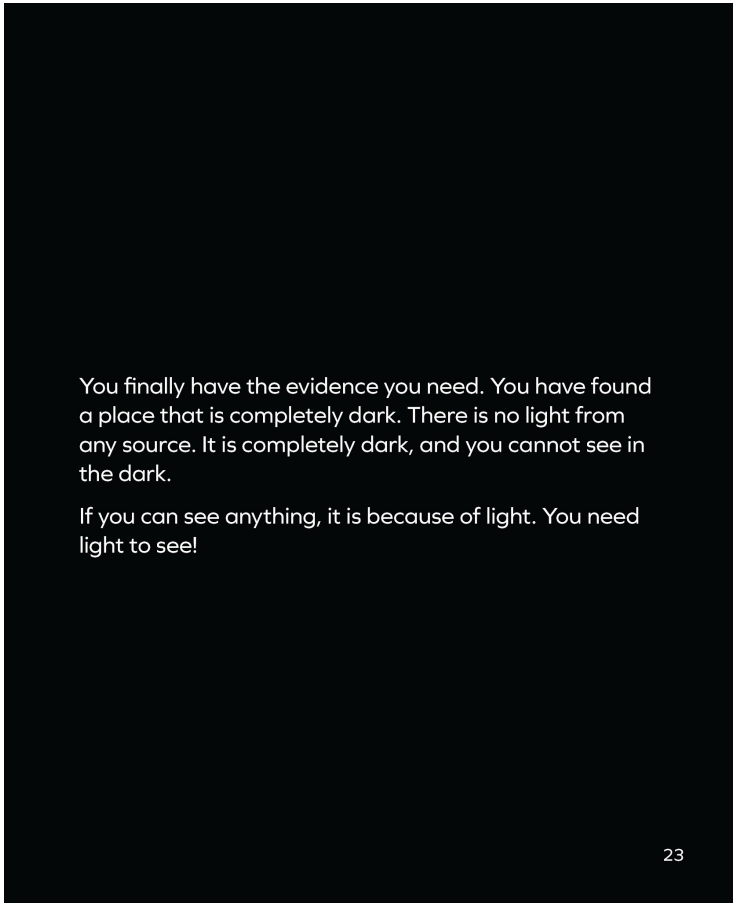
Let’s talk about the different types of **places** we read about in the book.



Now the chart shows the three types of places. Let's think about our ideas.

What is the difference between **dark** and **completely dark**?

The difference between dark and completely dark is _____.



We read about needing light to see in *Can You See in the Dark?*

Investigation Question:

What makes something look bright or dark?

Key Concept

Light makes things look bright.

Key Concept

You need some light to see.

End of Lesson

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

Amplify.

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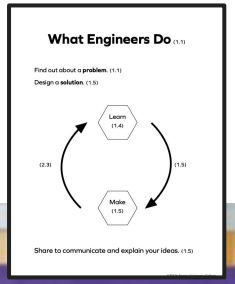
Light and Sound

Classroom Wall



Problem: How can we use light and sound to design shadow scenery and sound effects for a puppet theater?

Unit Question

How do we make different parts of a surface brighter or darker?

Chapter 1 Question: How do we make brighter or darker areas?

Investigation Question: *"What makes something look bright or dark?*

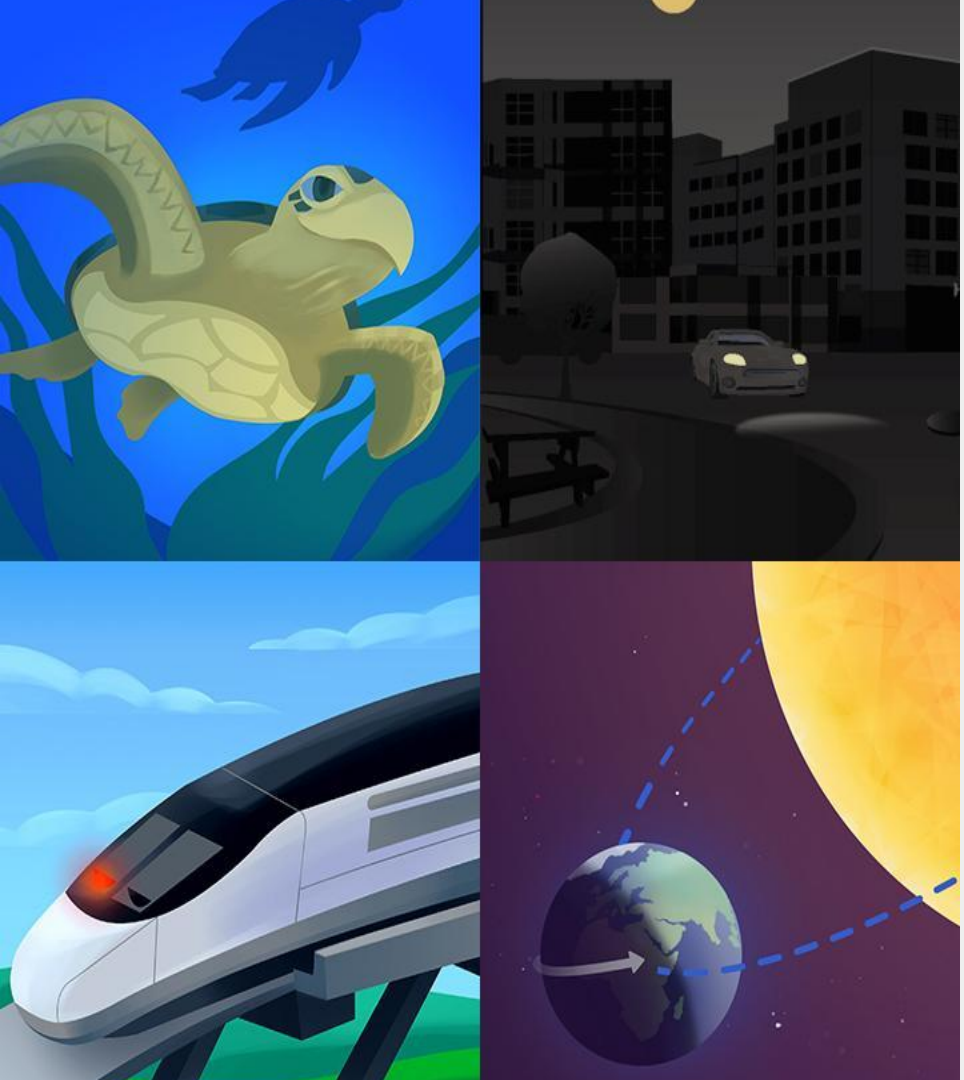
Concept

"Light makes things Look bright."

"You need some light to see.:

Vocabulary

engineer



Plan for the day: Part 2

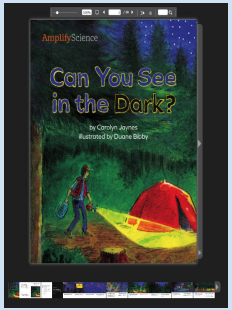
- Teaching and Learning in an Amplify Science Lesson
- Instructional Approach Reflection
- Planning a Lesson
- Closing

Gathering evidence

Pushes and Pulls 1.2

How do we make brighter or darker areas?

What makes something look bright or dark?

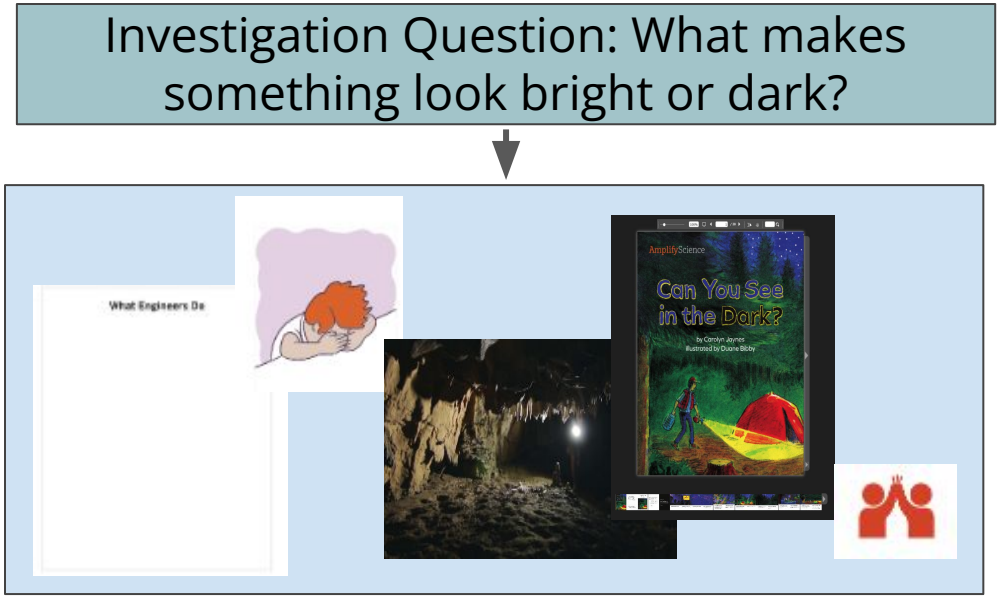


What have students figured out so far?

Evidence sources work together

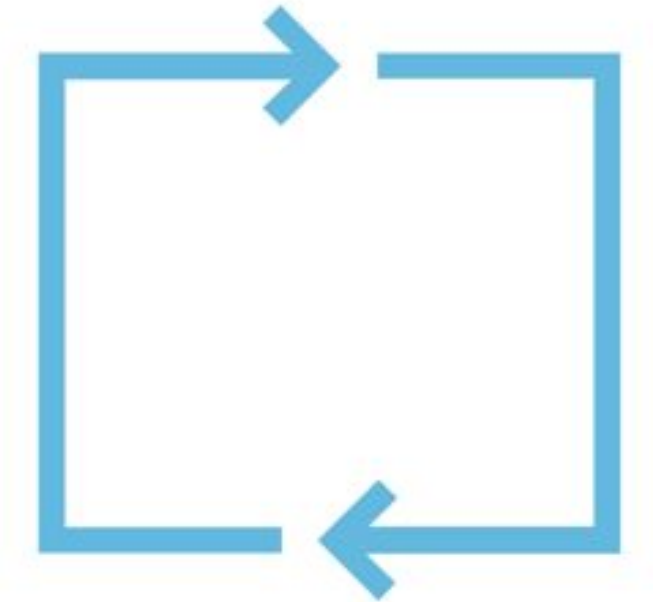
Investigating and discussing observations

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



Multimodal learning

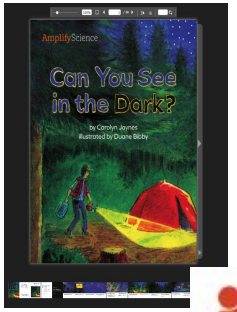
Gathering evidence over multiple lessons

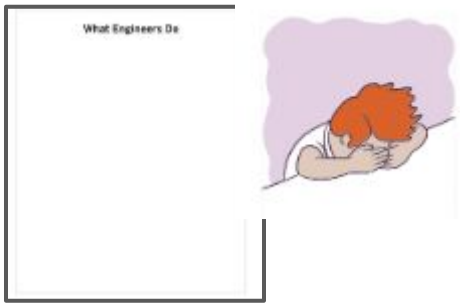


Do,
Talk,
Read,
Write,
Visualize

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)

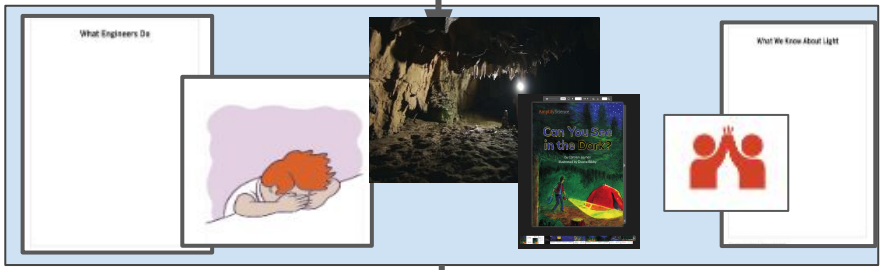
Investigation Question

Multiple sources of evidence

Key Concepts

Chapter Question: How do we make brighter or darker areas?

Investigation Question: What makes something look bright or dark?

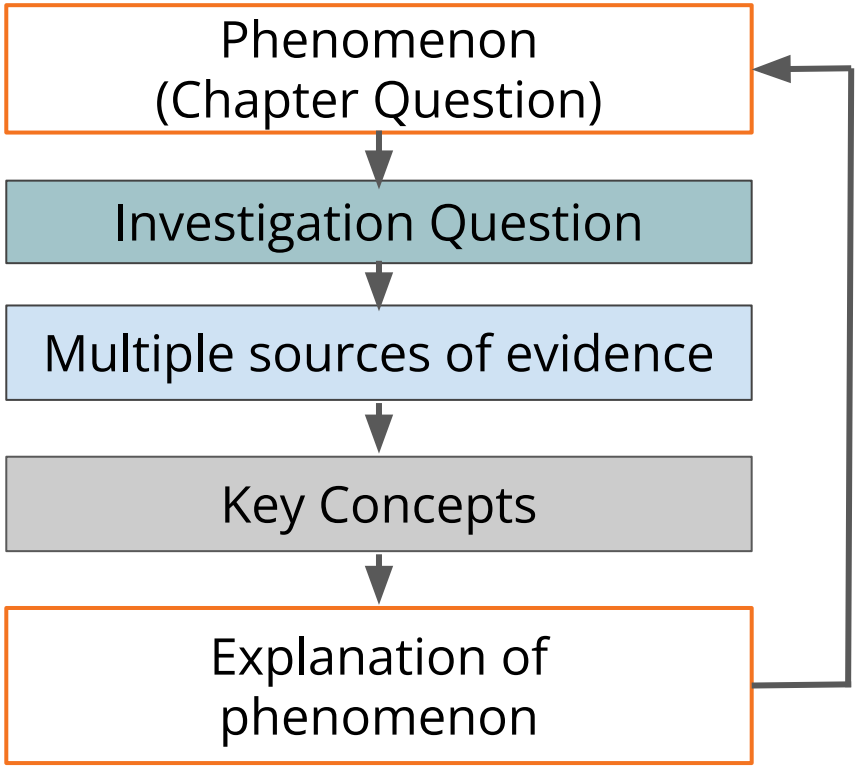


Students figure out:

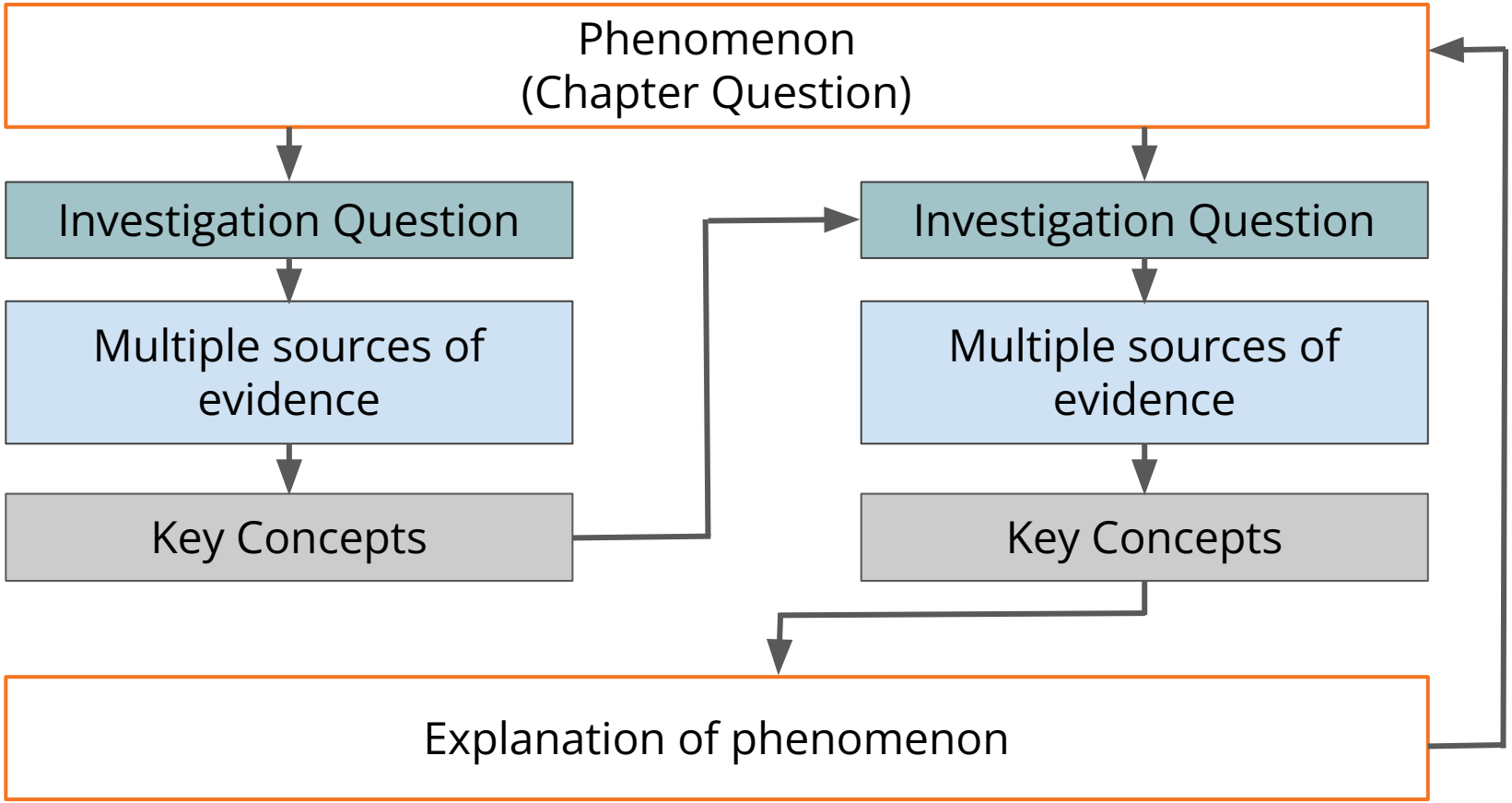
- Light makes things look bright.
- You need some light to see.

Coherence Flowchart

A diagram of student learning



Coherence Flowchart



Light and Sound: Puppet-Theater Engineers

Unit Design Problem

Problem students work to solve

We want to make light and dark scenery for a puppet theater.
How can we use light to design shadow scenery for a puppet theater?

Chapter-level Anchor Phenomenon
Chapter 1 Question

Puppet show scenes have brighter and darker areas.
How do we make brighter or darker areas?

Investigation Questions

What makes something look bright or dark? (1.2) (Note: See Lesson Overviews for lesson-level Investigative Phenomena)	*Where does the light come from that makes surfaces look bright or dark? (1.3-1.4)* (Note: See Lesson Overviews for lesson-level Investigative Phenomena)	*What makes a surface look bright or dark? (1.5) (Revised from 1.2)* (Note: See Lesson Overviews for lesson-level Investigative Phenomena)

Evidence sources and reflection opportunities

• Browse *Engineering with Light and Sound* reference book (1.1)
• Explore how to make the classroom completely dark (1.2)
• Observe a video of a very dark cave (1.2)
• Read *Can You See in the Dark?* (1.2)
	• Search for light sources around the school in a Light Source Hunt (1.3)
	  ○ Write about light sources (1.4)
	  ○ Revisit Can You See in the Dark? (1.4)
	• Practice using cause and effect to explain everyday scenarios (1.4)
	• Use Explanation Language Frame to explain bright areas in Can You See in the Dark? (1.4)
		• Investigate how to make surfaces look bright (1.5)
		• Diagram light making a surface bright (1.5)

Key concepts

• Light makes things look bright. (1.2) • You need some light to see. (1.2)	• All light comes from a source. (1.4)	• When light from a source gets to a surface, the surface looks bright. (1.5)

Application of key concepts to problem

- Use Explanation Language Frame to explain bright and dark areas (1.5)
- Shared Writing to explain the Chapter 1 Question (1.5)

Explanation that students can make to answer the Chapter 1 Question

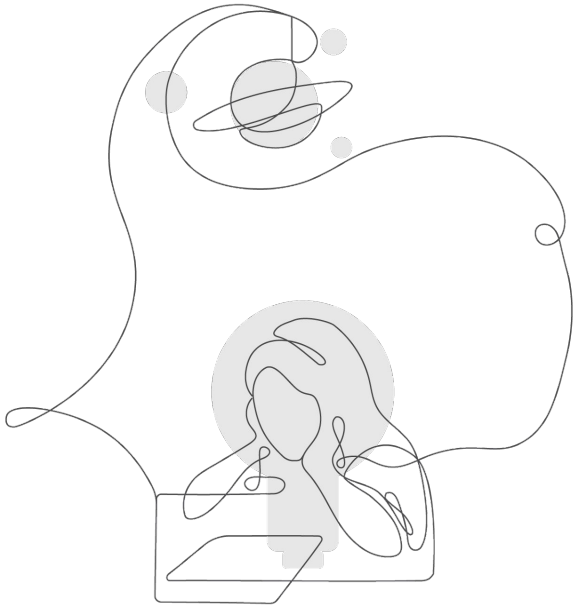
Without light, we cannot see. Light comes from a source and travels to a surface. Light from the source must be getting to the surface in order to make some parts of the surface look bright. If there is no light source, a surface looks dark.

Amplify.

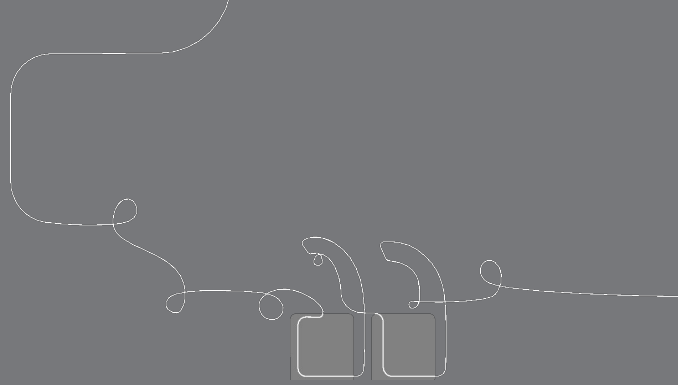
Explore the Coherence Flowchart

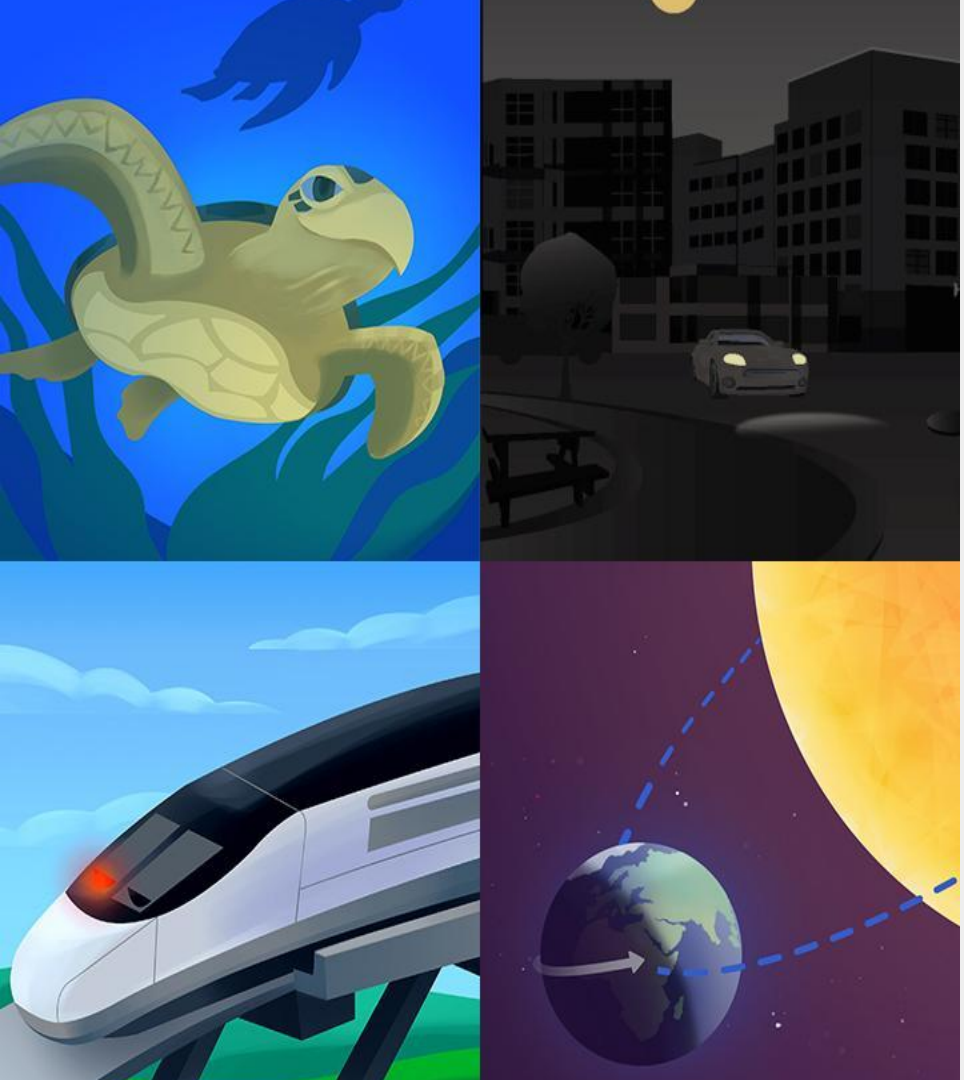
Skim the Chapter 1 Coherence Flowchart of your first unit.

How can the Coherence Flowchart serve you as a planning tool as you begin teaching Amplify Science?



Questions?





Plan for the day: Part 2

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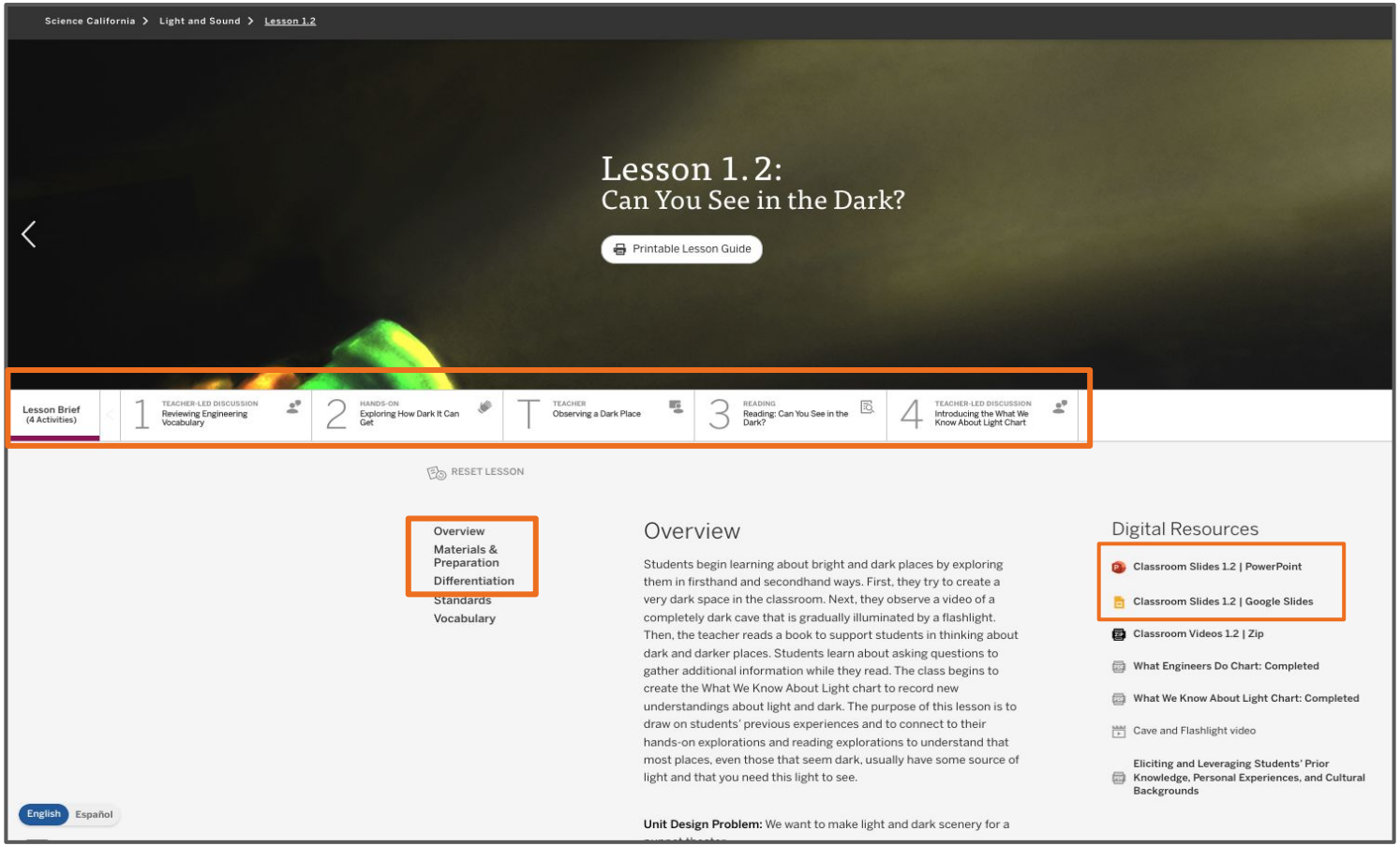
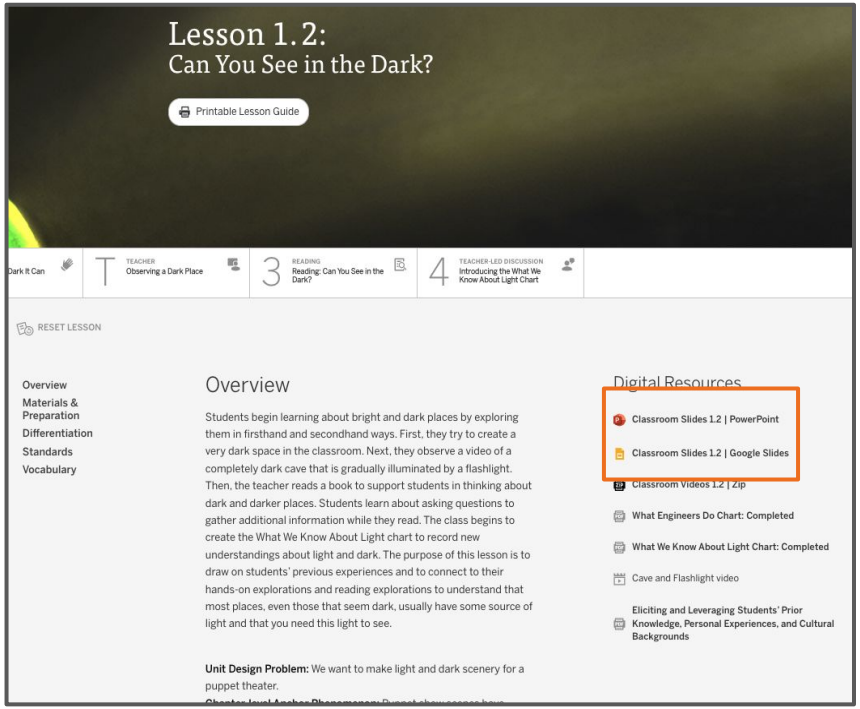
Navigate to the Lesson Brief



Preparing to teach

Classroom Slides

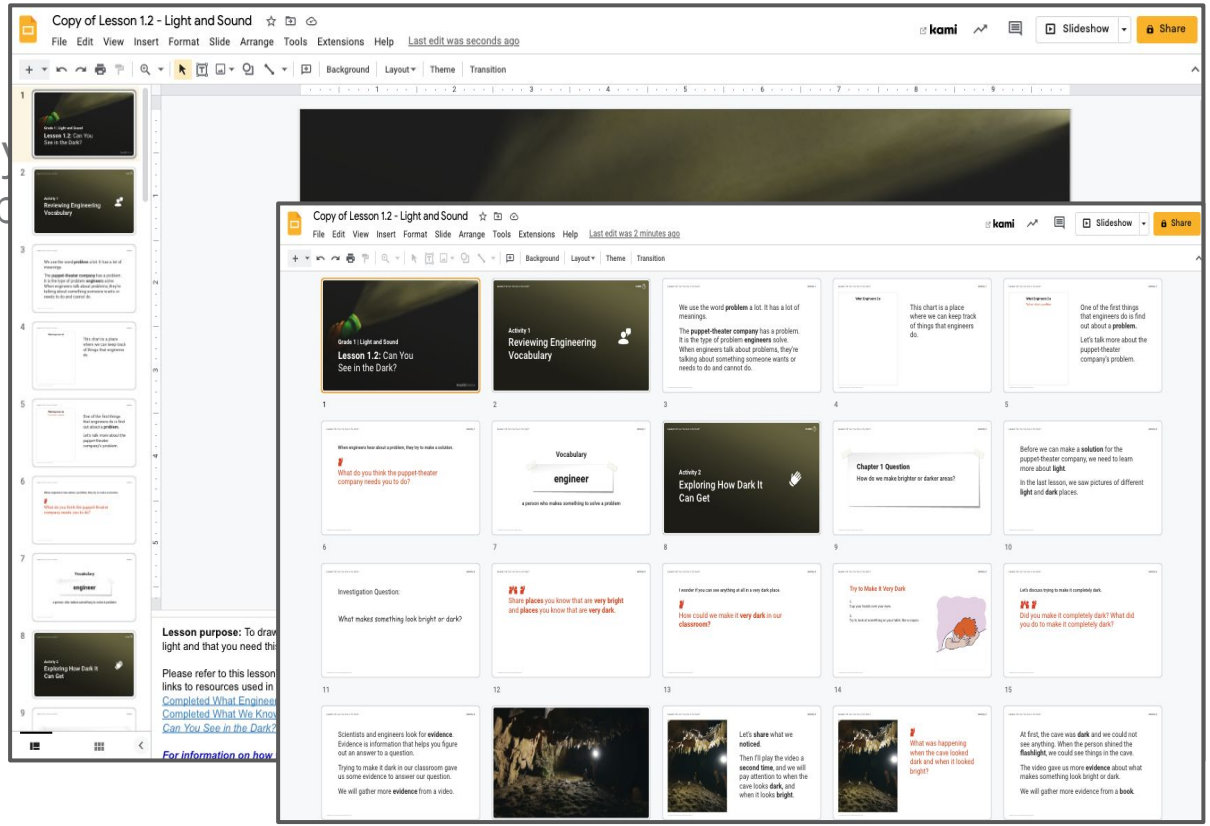
1. Open the **Classroom Slides** under the **Digital Resources**.
2. Read through the Classroom Slides including the **presenter notes** to gain a better understanding of the lesson.
3. **Consider:**
    - What features of the Classroom Slides will support you in teaching this lesson?



Using Classroom Slides as a planning tool

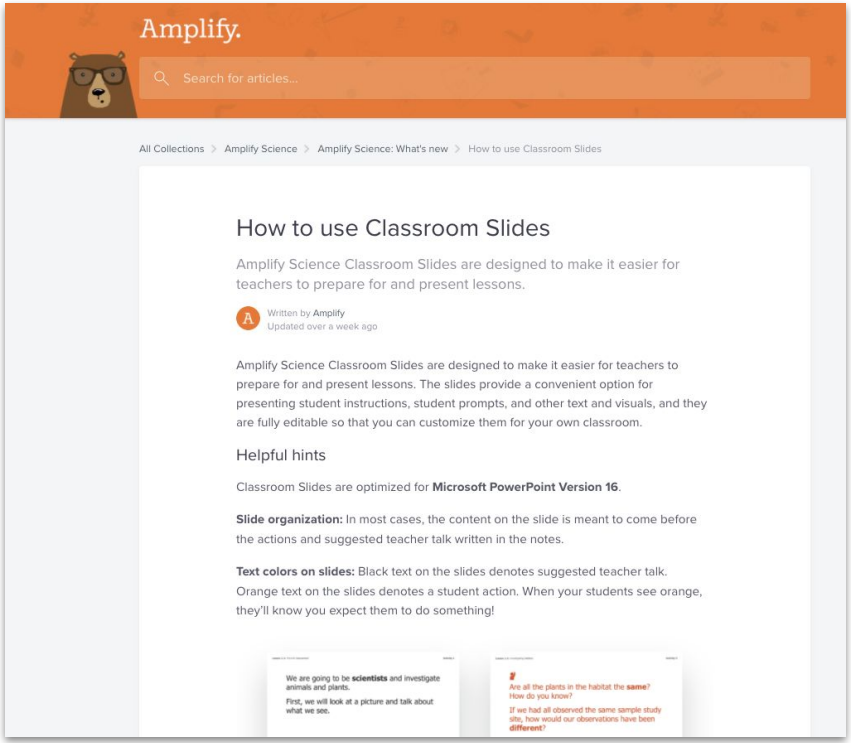
Teacher tip: Classroom Slides are a great visual summary of a lesson. Many teachers download and flip through a lesson's Classroom Slides deck to preview what happens in the lesson.

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



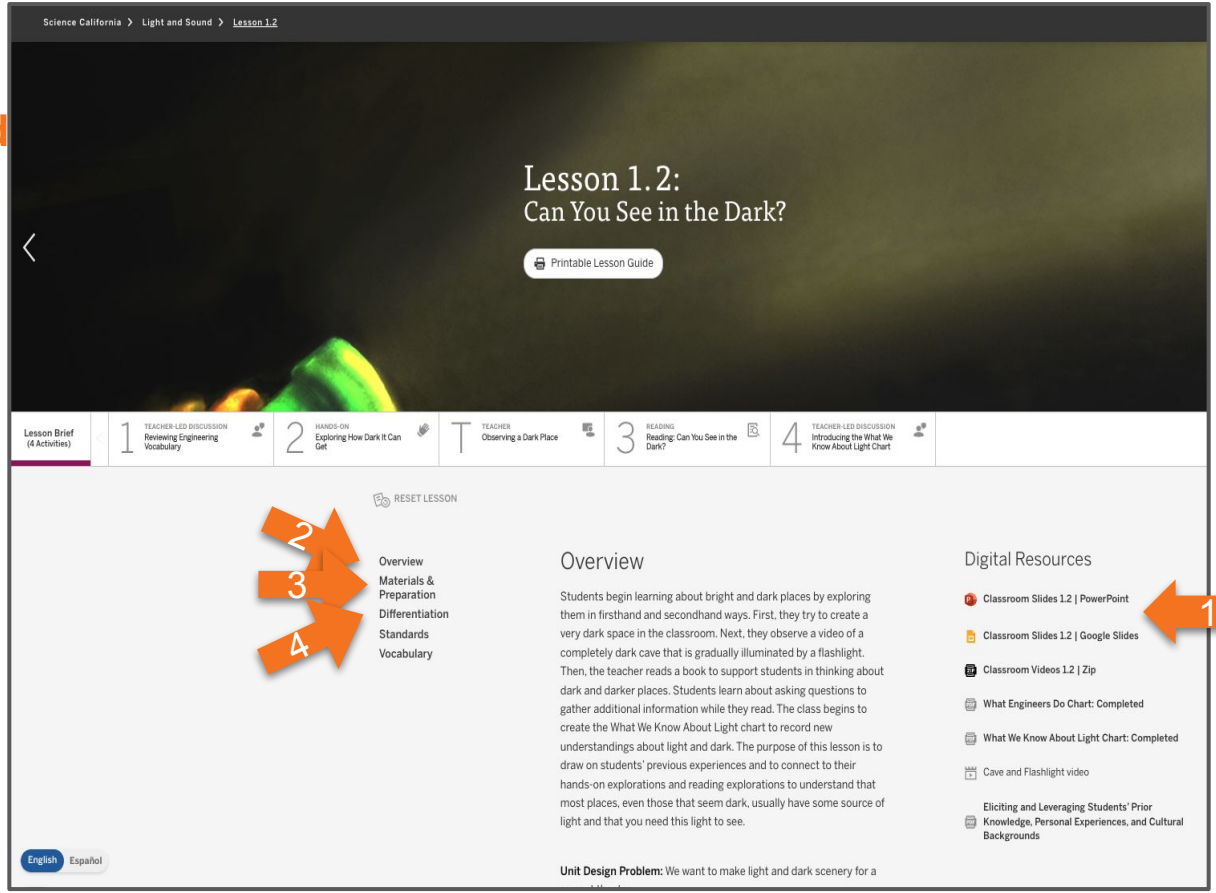
Teaching with Classroom Slides

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 Steps for Starting Your Lesson

1. Download **Classroom Slid** and review them.
2. Read the **Overview**.
3. Review the **Materials & Preparation** document.
4. Read the **Differentiation** document.



Lesson __	Activity Overview	
What is the purpose of this lesson? Access prior knowledge about rocks. Make observations of rocks.	**Activity 1 (##min)**	
What will students learn?	**Activity 2 (##min)**	
3-D Statement (identify SEP, CCC, and DCI):	**Activity 3 (##min)**	
Student Resources:	**Activity 4 (##min)**	
Assessment Opportunities:	**Activity 5 (##min)**	

Lesson 1.2	Activity Overview	
What is the purpose of this lesson? The purpose of this lesson is to connect students' discoveries about movement with scientific language, which, in turn, prepares them for explaining forces when they build their Box Models to test how a pinball machine works.	**Activity 1 (10 min)**	**Exploring and Describing Movement**
What will students learn? •An object starts to move when another object exerts a force on it •Visualizing is making a picture in your mind and it can be used to notice forces. •Scientists often talk about how things are connected. •Scientists and engineers search for cause and effect relationships to explain natural events.	**Activity 2 (10 min)**	**Visualizing Movement**
3-D Statement (identify SEP, CCC, and DCI): Students observe ball movements to construct explanations through discussion, and by using a *because* Explanation Language Frame, to think about *cause and effect*. They obtain information from *Talking About Forces* about how scientists describe pushes and pulls using scientific language (cause and effect).	**Activity 3 (10 min)**	**Explaining with Because**
Student Resources: n/a	**Activity 4 (15 min)**	**4: Reading: Talking About Forces**
Assessment Opportunities: On-The-Fly, Activity 2	**Activity 5 (## min)**	

Remember to plan for…

Student work:

- How do you plan to collect evidence of student work?

Differentiation:

- How do you plan to differentiate the lesson for diverse learners?

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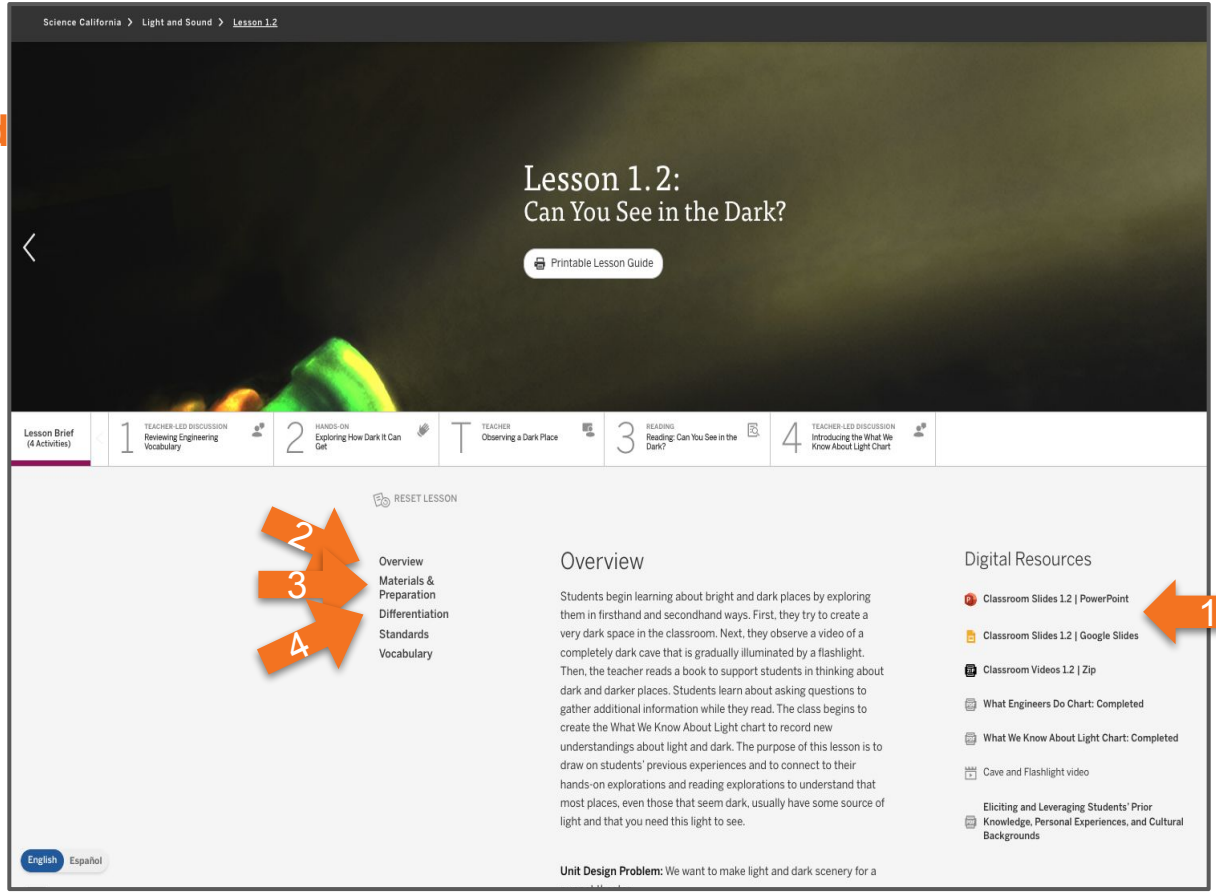
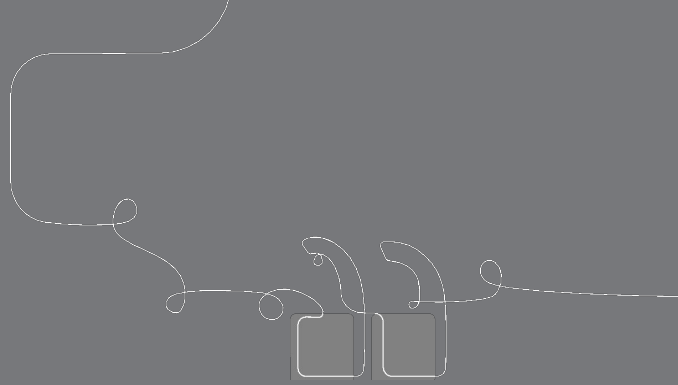
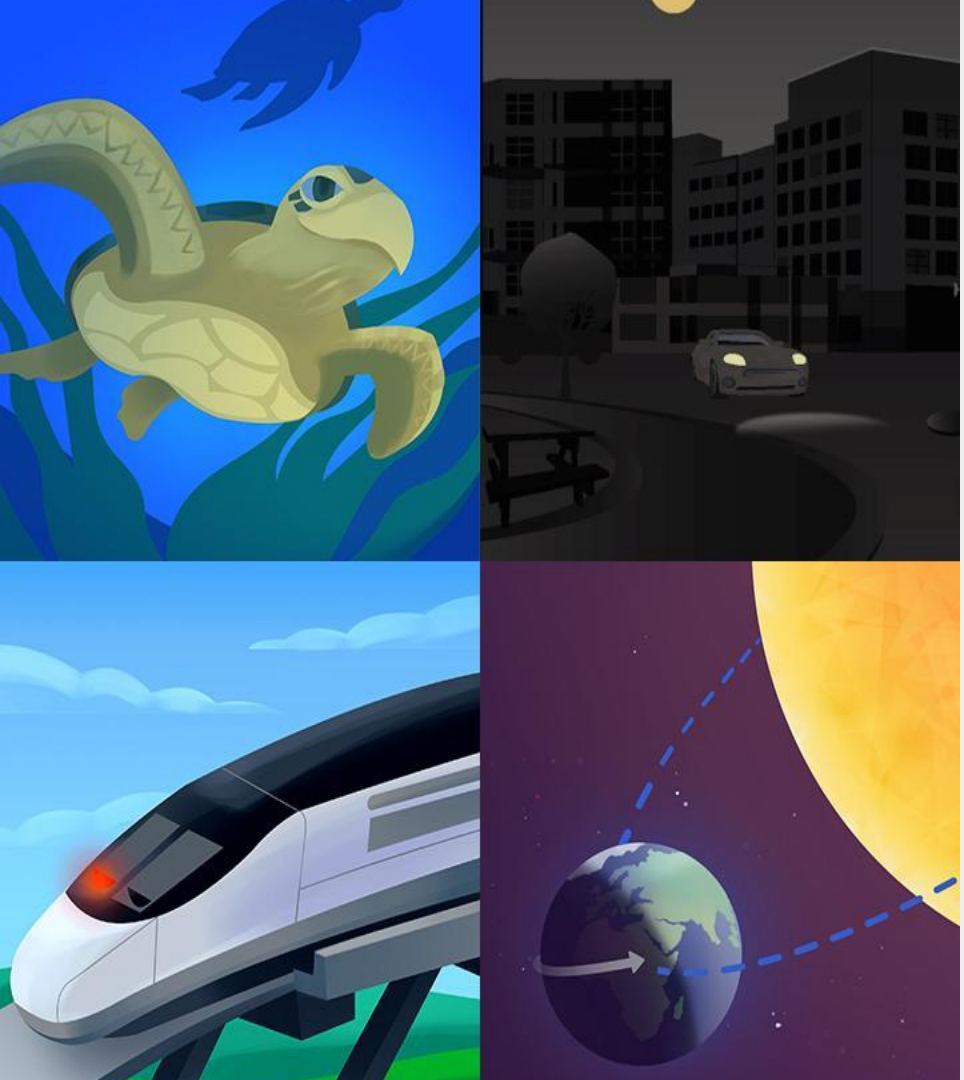


Questions?





Plan for the day: Part 2

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

Additional resources

Welcome, caregivers!

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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.

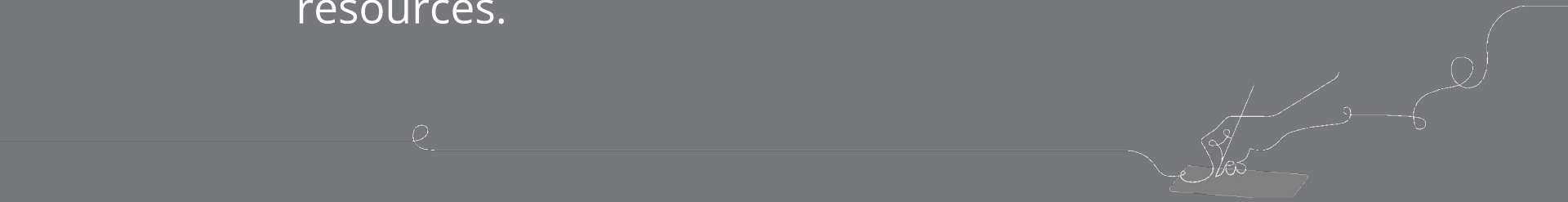
- Access the Amplify Science Program Hub (To help orient you to the new design, watch this video and view this reference guide.)
- Find out more about Amplify Science@Home
- Share the Caregiver Hub (Eng/Span) with your families
- For LAUSD ES Teachers- Amplify Science & Benchmark Advance Crosswalk
-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

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

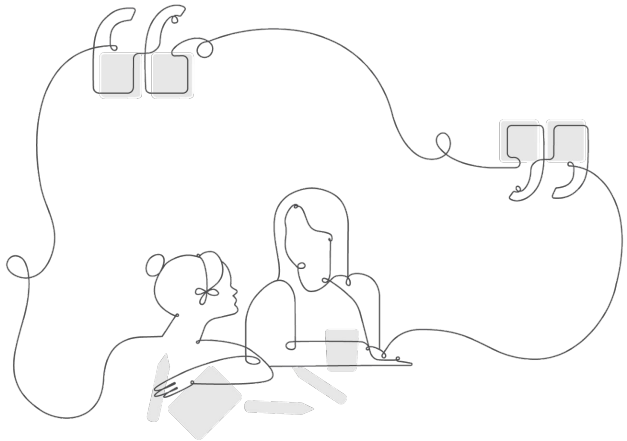
Heart: something you're feeling

Feet: something you're planning to do

Onsite Upcoming Professional Development!

Part 3: Unit 2 - with a focus on assessments

- December 3 (grades 3-6)
- December 10 (grades K-2)



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

Professional Learning Specialist name:

Insert name

(insert email, if you would like)

Please provide feedback!

LAUSD SURVEY

Presenter name:

Workshop title:

Part 1: Unit

Part 2: Guided Planning (Planning for a Lesson)

Modality:

Remote