

# Amplify Science

## The Assessment System

### Grade 1, Unit 2: Light and Sound

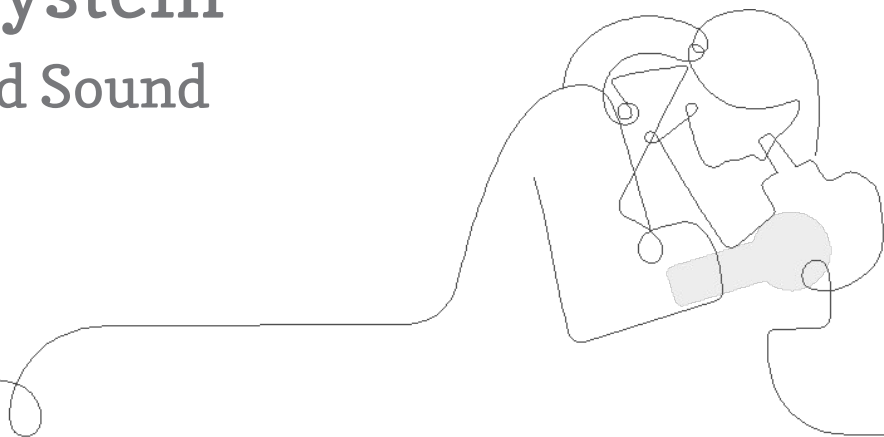
#### Part 3

#### Strengthen workshop

Los Angeles Unified School District

12/10/2022

Jonathan Tam



# Amplify's Purpose Statement

Dear teachers,

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

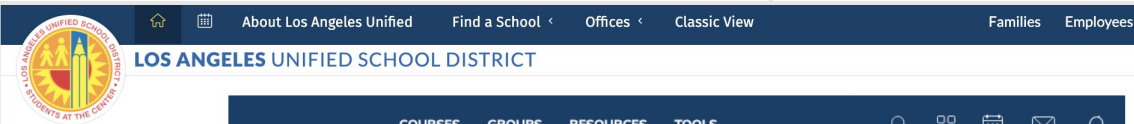
**We are in your corner** – extending your reach, saving you time, and enhancing your understanding of each student.

**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

# Schoolology



[← 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, Schoolology.

For information on District-approval policies and procedures, please visit: [udidp.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



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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  
Creative

**Vendor Support Desk:**  
P: 800.823.9969  
E: [help@amplify.com](mailto:help@amplify.com)  
S: [amplify.com/support/](https://amplify.com/support/)  
**Textbook Title(s):**  
NA



**Vendor Support Desk:**  
P: 800.823.9969  
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S: [amplify.com/support/](https://amplify.com/support/)  
**Textbook Title(s):**  
NA

op is for  
only)

# 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.

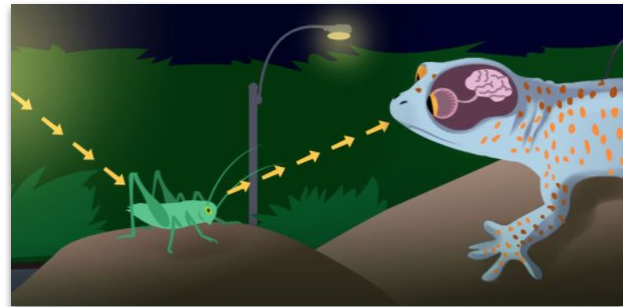
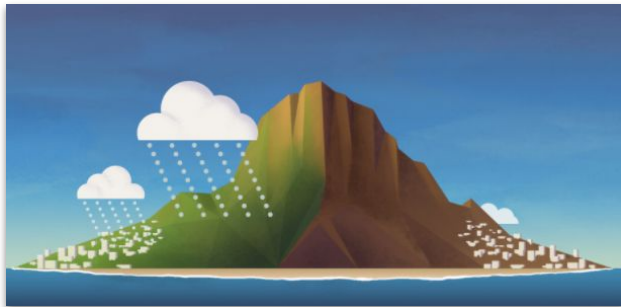
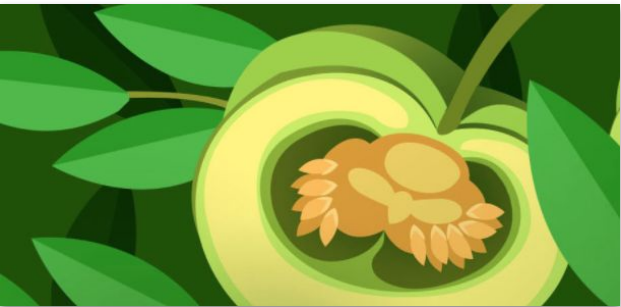
1 = Extremely Uncomfortable

2 = Uncomfortable

3 = Mild

4 = Comfortable

5 = Extremely Comfortable



# Plan for the day

- Introduction & Framing
- Assessment System
- Progress Build
- Assessments
- Model Lesson
- Planning
- Closing

# Overarching goals

- ❑ Describe the structure and purpose of the Amplify Science Assessment System
- ❑ Plan for the strategic use of assessment resources to analyze and respond to student work

Let's connect  
this goal to  
our students



# Norms: Establishing a culture of learners

- **Take risks:** Ask any questions, provide any answers, share expertise and best practices
- **Participate:** Share your thinking, participate in discussion and reflection, put yourself in your student's shoes
- **Be fully present:** Unplug and immerse yourself in today's training.
- **Physical needs:** Stand up, get water, take breaks, bathroom\*.
- **Apply your learning:** Walk away from today feeling as though you can apply things today in the future

# Opening reflection

Why do we assess our students?

What is **challenging** about assessing our students?



Participant  
Notebook

<https://bit.ly/3Bknj6D>

## *Opening Reflection: Assessment*

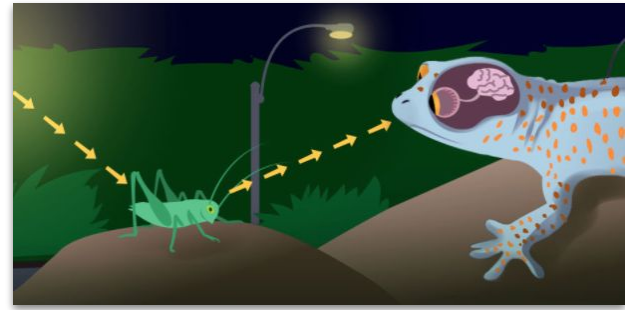
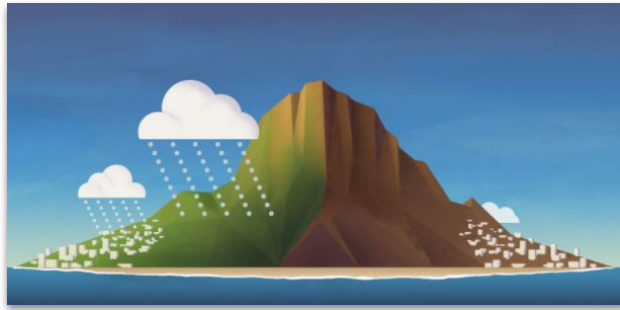
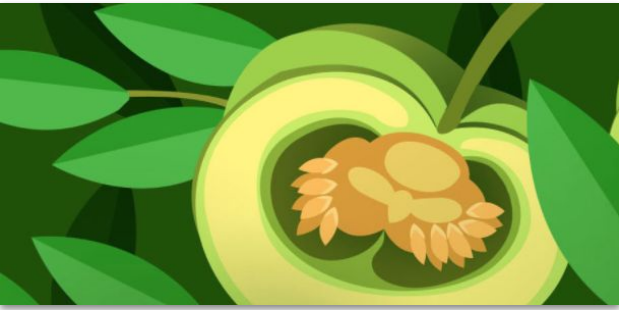


# Why do we assess our students?



# Why do we assess our students?



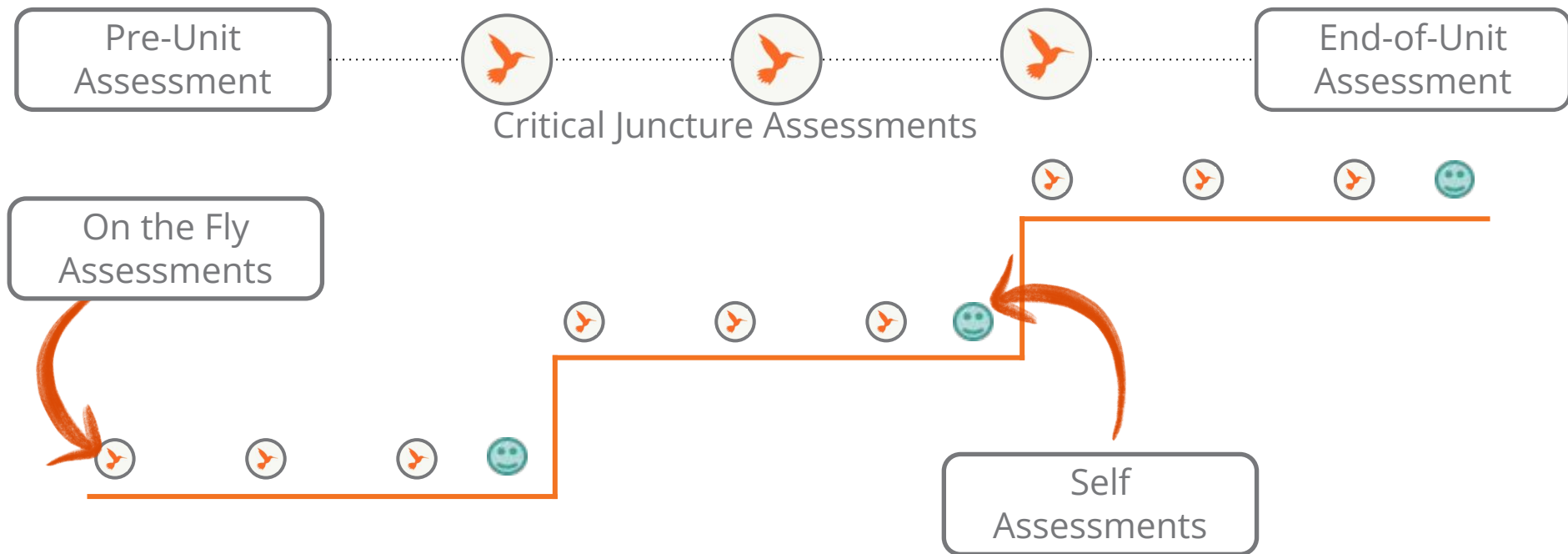


# Plan for the day

- Introduction & Framing
- **Assessment System**
- Progress Build
- Assessments
- Model Lesson
- Planning
- Closing



# K-5 Assessment System



# Assessment System Document

22 Lessons

Light and Sound

Printable Teacher Guide

Unit Overview

Chapters

Printable Resources

Planning for the Unit ^

Unit Map

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References ^

Lesson Overview

Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Books in This Unit

Opportunities for Unit Extensions

Offline Preparation

Unit Overview

What's in This Unit?

The creation of special effects in theater productions relies on clever and intentional use of light and sound. Light is used to create the illusion of buildings, trees, the ocean, or other aspects of the scene for a puppet show, including time of day or type of weather. Sound is also used to make a scene feel more realistic—for instance, by creating the sound of traffic in a city scene or the sound of crickets singing to indicate a warm summer evening. Just as any theater group has a costume designer, theater groups also have light engineers and sound engineers who design the way light and sound is used in a production.

Read more >

Chapters

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

LESSON 1.1

Pre-Unit Assessment

LESSON 1.2

Can You See in the Dark?

LESSON 1.3

Light-Source Hunt

LESSON 1.4

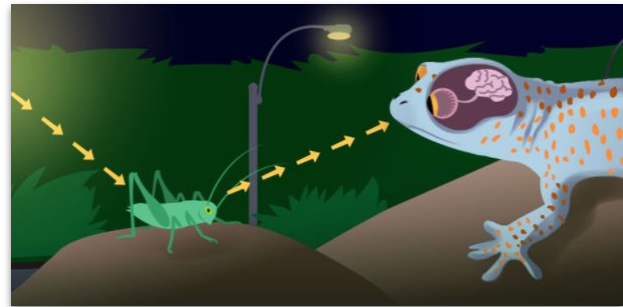
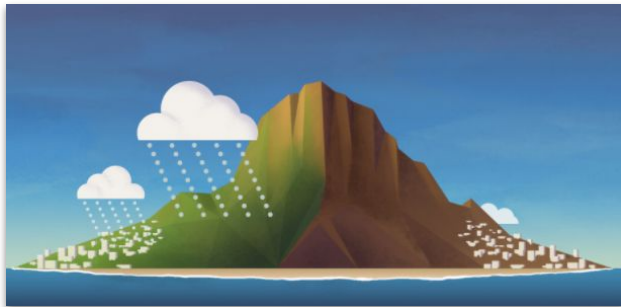
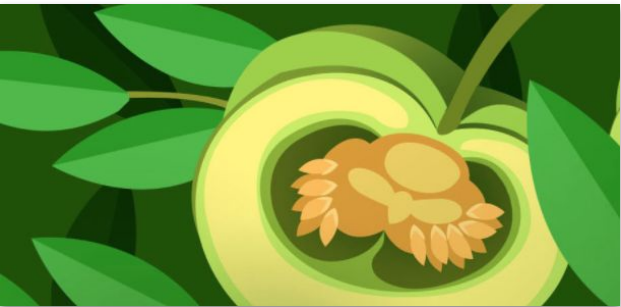
Making Sense of Light Sources and Brightness

LESSON 1.5

Light Makes Surfaces Look Bright

# Questions?





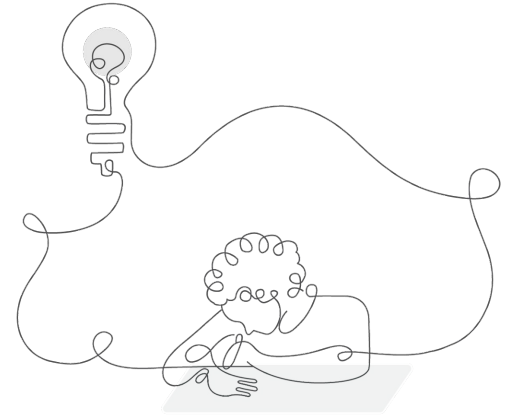
# Plan for the day

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# Reviewing the unit phenomenon

## Light and Sound

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



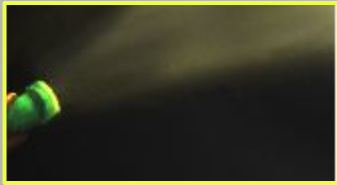
# Light and Sound

**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?

# Light and Sound

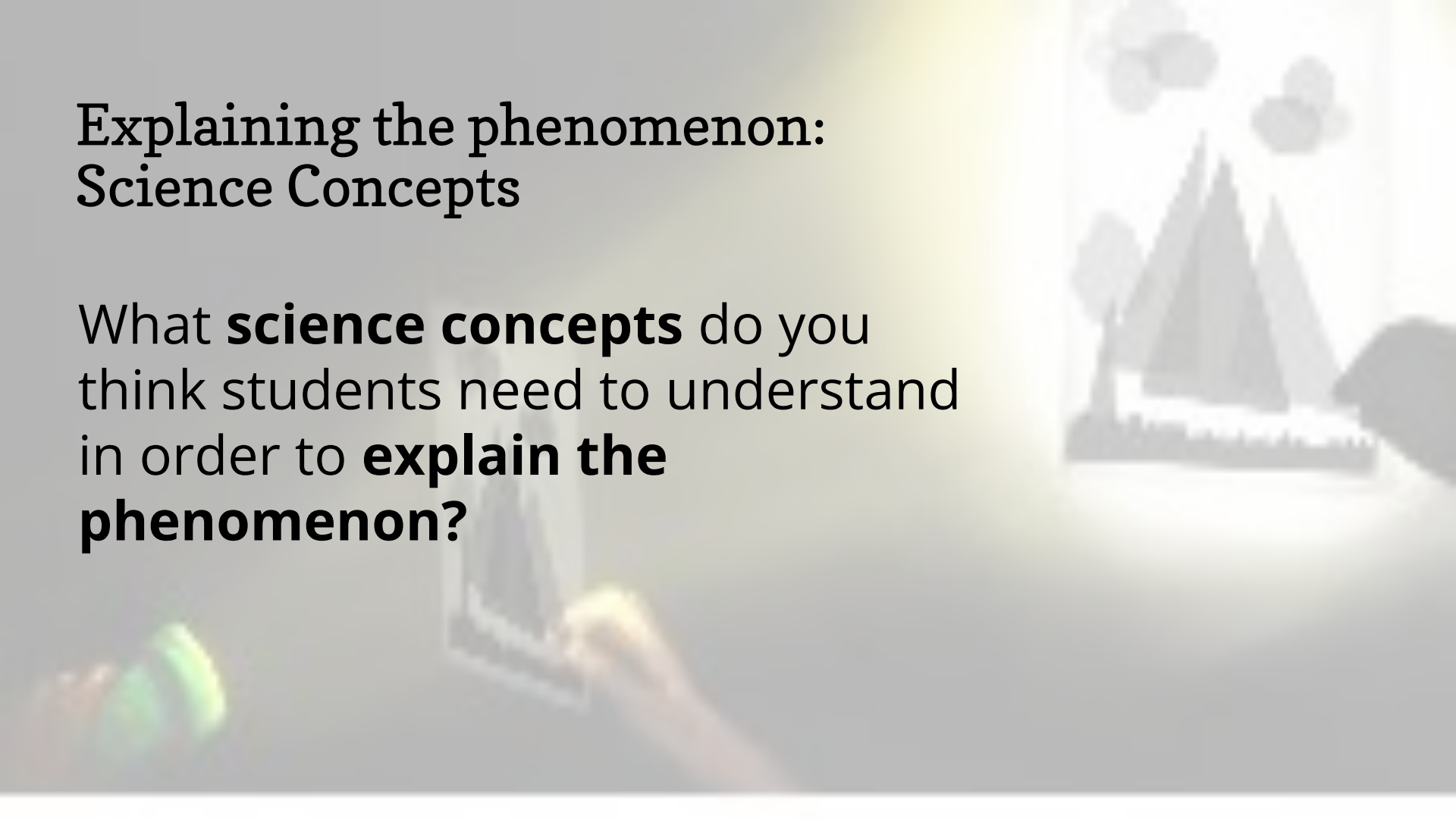
**Unit Question:** How do we make different parts of a surface brighter or darker?

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.



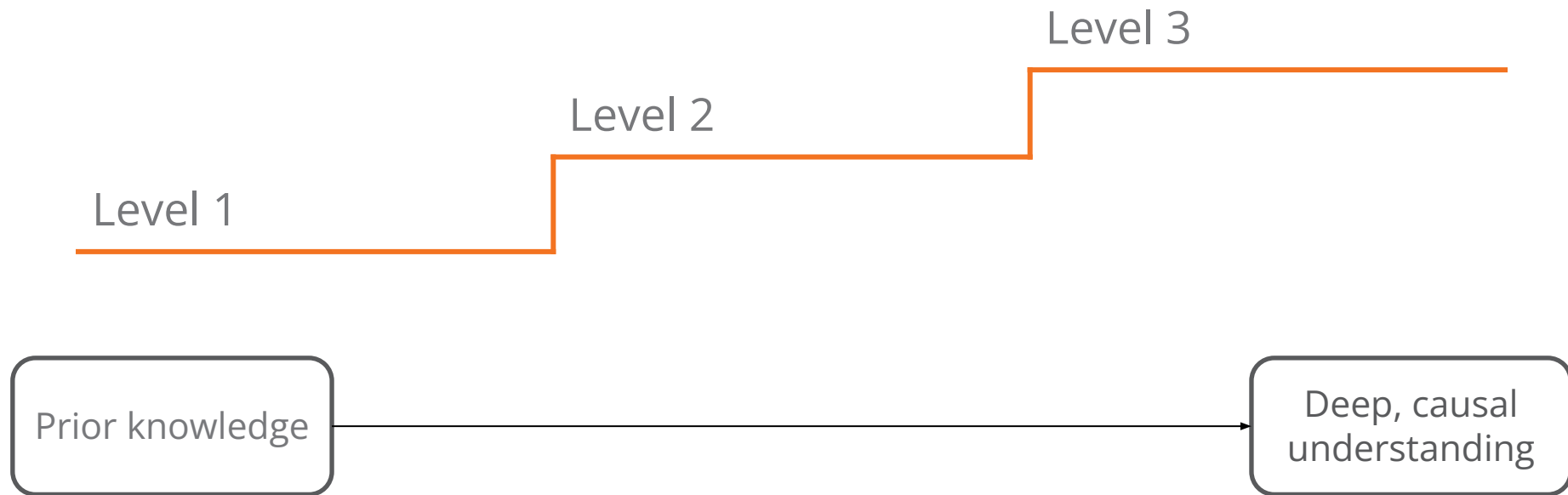
# Explaining the phenomenon: Science Concepts

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



# Progress Build

## A unit-specific learning progression

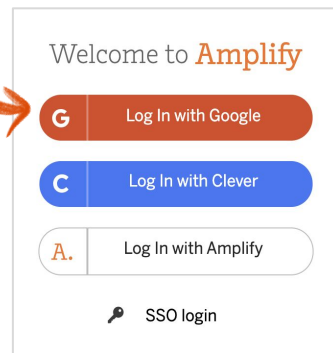


# Logging in (demo account)

## Safari or Chrome

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
  - [californiasci119@pd.tryamplify.net](mailto:californiasci119@pd.tryamplify.net)
  - AmplifyNumber1

Steps 1-2



Welcome to **Amplify**

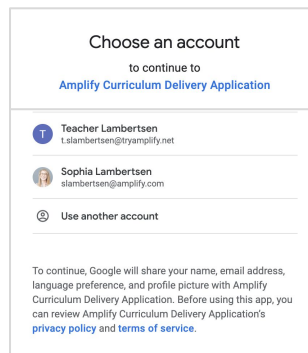
**G** Log In with Google

**C** Log In with Clever

**A.** Log In with Amplify

SSO login

Step 3



Choose an account  
to continue to  
**Amplify Curriculum Delivery Application**

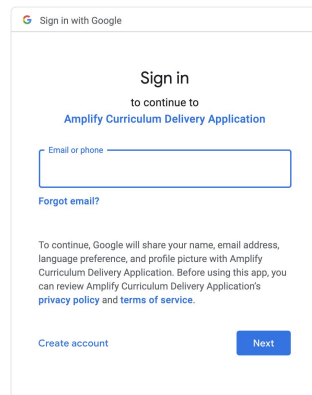
**T** Teacher Lambertsen  
t.lambertsen@tryamplify.net

**S** Sophia Lambertsen  
slambertsen@amplify.com

**Use another account**

To continue, Google will share your name, email address, language preference, and profile picture with Amplify Curriculum Delivery Application. Before using this app, you can review Amplify Curriculum Delivery Application's [privacy policy](#) and [terms of service](#).

Step 4



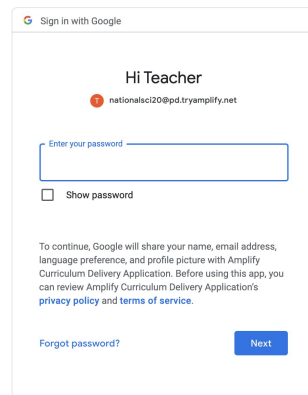
Sign in  
to continue to  
**Amplify Curriculum Delivery Application**

Email or phone

[Forgot email?](#)

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Create account Next



Hi Teacher  
nationalsci20@pd.tryamplify.net

Enter your password

☐ Show password

To continue, Google will share your name, email address, language preference, and profile picture with Amplify Curriculum Delivery Application. Before using this app, you can review Amplify Curriculum Delivery Application's [privacy policy](#) and [terms of service](#).

[Forgot password?](#) Next

# Progress Build analysis

## Work time

Read and analyze your unit's Progress Build.

The screenshot shows a digital interface for a unit titled "Light and Sound" (22 Lessons). A sidebar on the left contains a navigation menu with categories like "Unit Overview", "Chapters", "Printable Resources", "Planning for the Unit", "Teacher References", and "Offline Preparation". An orange arrow points from the "Progress Build" link in the "Planning for the Unit" section to the "Progress Build Analysis" overlay on the right.

**Unit Overview**

**What's in This Unit?**

The creation of special effects in theater productions the illusion of buildings, trees, the ocean, or other asp weather. Sound is also used to make a scene feel mor sound of crickets singing to indicate a warm summer also have light engineers and sound engineers who de

[Read more >](#)

**Chapters**

**Chapter 1: How do we make brighter**

**LESSON 1.1**  
Pre-Unit Assessment

**LESSON 1.2**  
Can You See in the

**LESSON 1.4**  
Making Sense of Light Sources and Brightness

**LESSON 1.5**  
Light Makes Surfa Bright

**Progress Build Analysis**

**Directions:**

1. Open the Progress Build document in the Planning for the Unit section of the Unit Guide.
2. START WITH THE BOX AT THE BOTTOM OF THIS PAGE, and summarize each Progress Build level. Feel free to draw if that's more helpful.
3. In between the provided boxes, reflect on how the ideas build from one level to the next by answering the two questions given.

**Level 3**

What new ideas are added in level 3?

How do those new ideas build on and connect to level 2?

**Level 2**

What new ideas are added in level 2?

How do those new ideas build on and connect to level 1?

**Level 1**

What new ideas are added in level 1?

How do those new ideas build on and connect to level 0?

**Level 0 (preconceptions/prior knowledge)**

8

# Progress Build analysis

## Group work time

In small groups, create a visual representation of your unit's Progress Build levels and the science concepts being taught.

**Your visual representation CAN NOT include any words.** Find creative ways to express students understanding at Level 1, 2 and 3



# Progress Build analysis

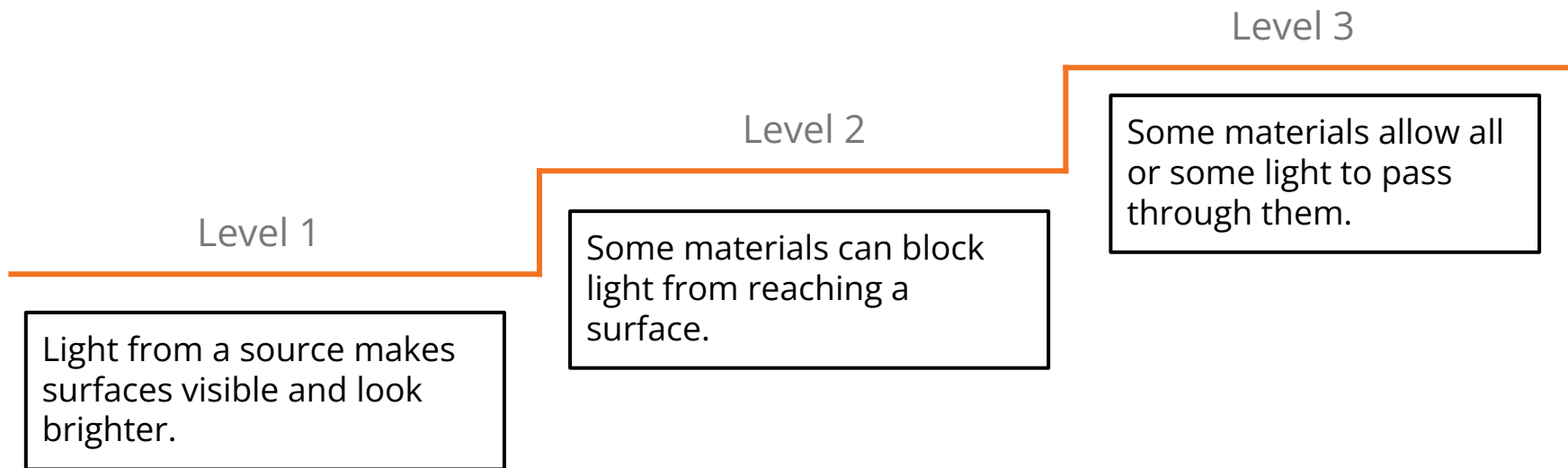
## Gallery Walk



# Progress Build

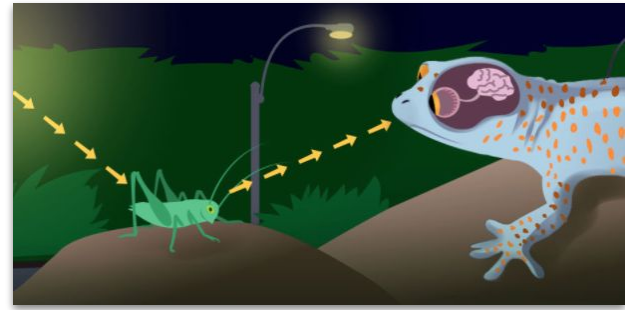
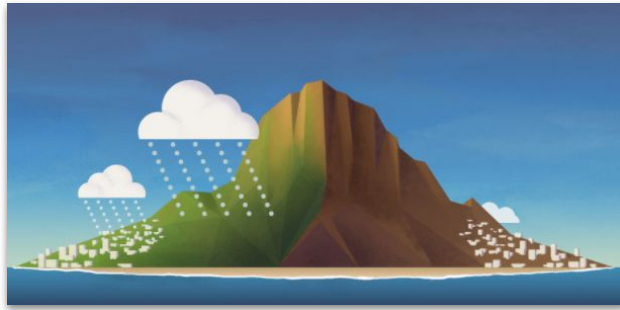
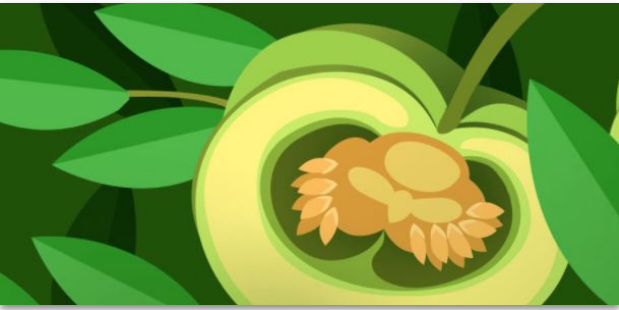
## Light and Sound

**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.



# Break

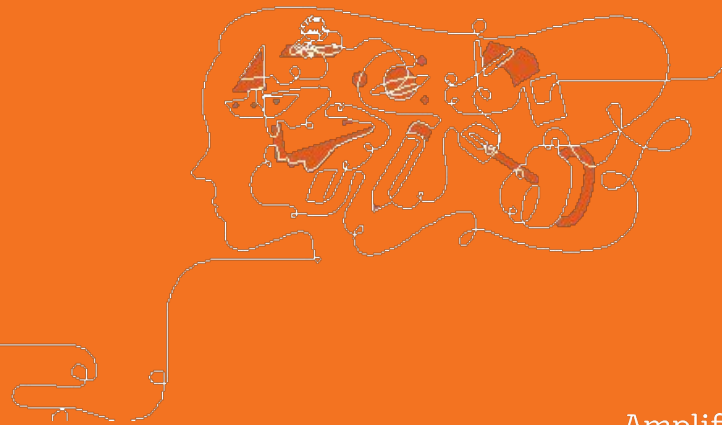




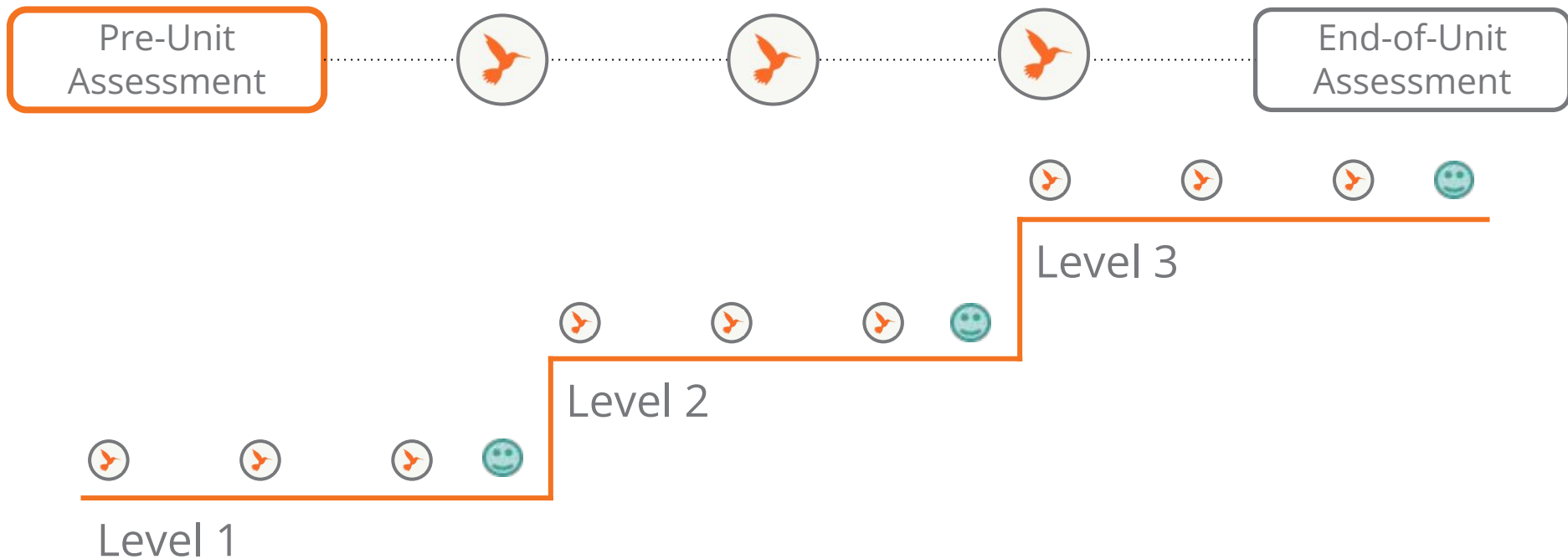
# Plan for the day

- Introduction & Framing
- Assessment System
- Progress Build
- **Assessments**
- Model Lesson
- Planning
- Closing

# Pre-Unit Assessment



# Pre and End-of-Unit Assessment



# 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.

Level 1

Light from a source makes surfaces visible and look brighter.

Level 2

Some materials can block light from reaching a surface.

Level 3

Some materials allow all or some light to pass through them.

# Pre-Unit Assessment

## Lesson 1.1

Locate the Pre-Unit Assessment Guide in Lesson 1.1 of your unit and skim through them.

**Open up the classroom slides and see how the pre-unit assessment is embedded in the lesson.**

Also, look at Activity 1 and read how it is explained.

Lesson 1.1:  
Pre-Unit Assessment

Printable Lesson Guide

1 TEACHER-LED DISCUSSION  
Leading a Pre-Unit  
Assessment Conversation

2 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 measure growth of understanding over the course of the unit. These explanations can also provide the teacher with insight into students' thinking as they begin the unit. This will allow the teacher to draw connections to students' experiences and to watch for preconceptions that might get in the way of understanding. The teacher then models how to use the unit's reference book, *Engineering with Light and Sound*. Pairs look through the reference book and learn that engineers make solutions to a variety of

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

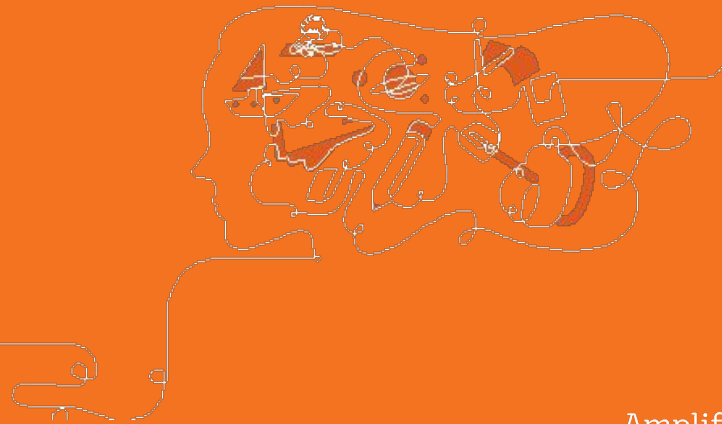
Questioning Strategies for Grades K-1

Light and Sound Family Connections Letter

Crosscutting Concept Tracker

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

# Formative Assessments



# K-5 Assessment System



# Formative Assessment Document

## Light and Sound

22 Lessons

Light and Sound

Printable Teacher Guide

Unit Overview

Chapters

Printable Resources

Planning for the Unit ^

Unit Map

Progress Build

Getting Ready to Teach

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Books in This Unit

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Read more >

Chapters

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

LESSON 1.1

Pre-Unit Assessment

LESSON 1.2

Can You See in the Dark?

LESSON 1.3

Light-Source Hunt

LESSON 1.4

Making Sense of Light Sources and Brightness

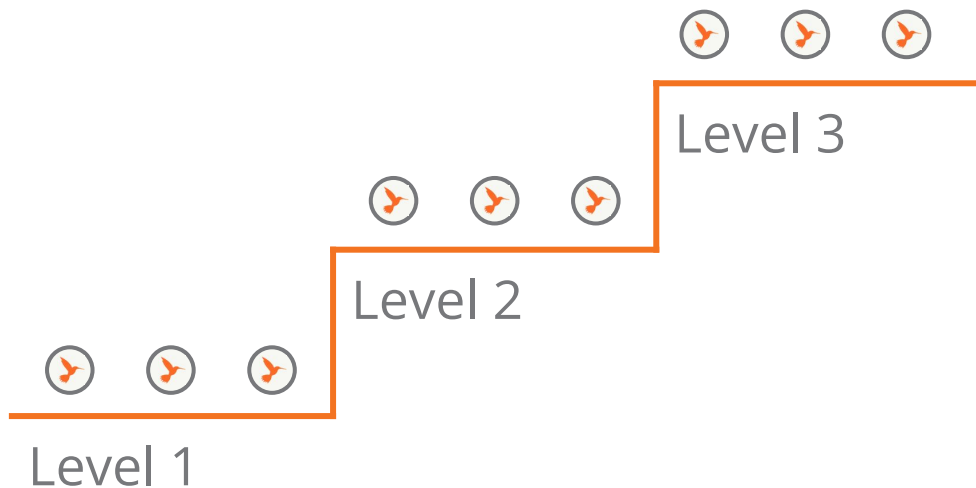
LESSON 1.5

Light Makes Surfaces Look Bright



# On-the-Fly Assessments

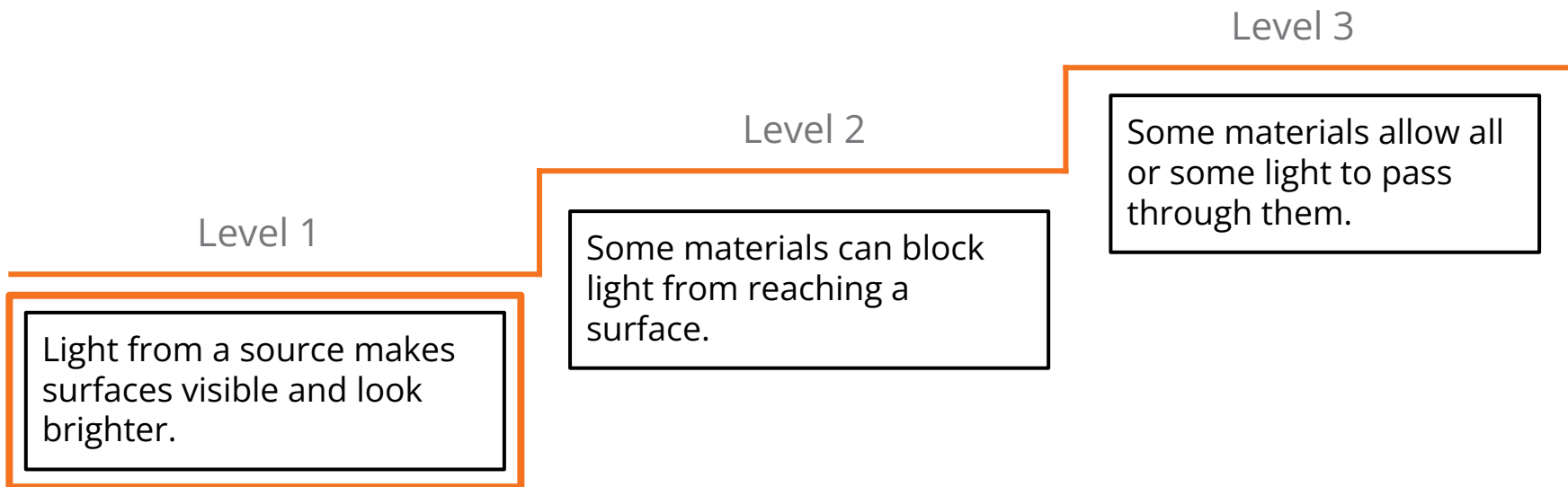
- Track student progress within a Progress Build level
- Embedded into instruction
- Assessment resource includes “Look for” and “Now what”
- Incremental build towards the Critical Juncture



# 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.



# Formative assessment information

## Locating assessment resources

### Full text of assessment

- Embedded Formative Assessments document
- Instructional guide
- Classroom Slides notes

Unit Overview  
Chapters  
Printable Resources

Lesson 1.4, Activity 3  
On-the-Fly Assessment 3: Generating Causes and Effects

Lesson 1.4: Making Sense of Light Sources and Brightness  
Activity 3

Cause	Effect
I kicked the ball.	It rolled across the playground.
I bit the apple.	My loose tooth came out.

We can use this chart to list more examples of cause and effect.

**What are some everyday examples of **cause** and **effect** like the ones we talked about?**

**Teacher action:**  
Post the Cause and Effect T-chart in the discussion area. Under the column headings "Cause" and "Effect," record the examples you discussed earlier. In the "Cause" column, write "I kicked the ball"; in the "Effect" column, write "It rolled across the playground." In the "Cause" column, write "I bit into the apple"; in the "Effect" column, write "My loose tooth came out."

**Teacher action:**  
Add more student-generated ideas of everyday examples to the T-chart and have the class try each one out by using the \_\_\_\_\_ so \_\_\_\_\_

**On-the-Fly Assessment 3: Generating Causes and Effects**  
**Look for:** Students will be generating everyday examples of connected events. You may notice that some examples are direct cause-and-effect relationships, and others may be related events where one does not cause the other. Note if the examples that students offer are correlations or things that happen to go together but don't necessarily cause the other (e.g., "When school is over, you go home."). Also notice if students reverse the effects and the causes when constructing the Cause and Effect T-chart or the sentences from the examples on the T-chart.  
**Now what?** Students will have other opportunities in this unit to practice constructing causal explanations with light's effects on surfaces. This is a first opportunity to notice if students come in with prior knowledge about these connections, or if they need more practice throughout the school day.

# Classroom slides

## Lesson 1.4, Activity 3

### Lesson 1.4: Making Sense of Light Sources and Brightness

Printable Lesson Guide

WRITING  
Writing About Light-Source  
Observations

2 READING  
Revisiting Can You See in  
the Dark?

3 TEACHER-LED DISCUSSION  
Introducing Cause and  
Effect

RESET LESSON

Overview

Materials & Preparation

Differentiation

Standards

Vocabulary

#### Overview

Students continue to debrief their observations from the Light-Source Hunt through discussion and writing. After returning to the book *Can You See in the Dark?*, the class adds to the Light Sources chart. Students learn that not only do you need light to see, but that all light that helps us see comes from a source. By using a language frame that helps them explain cause and effect, students discuss how the source of a light makes a surface look bright. The purpose of this lesson is to synthesize new understandings about light sources and brightness by explaining that when we observe bright places, it is because of light coming from a source.

#### Digital Resources

- Classroom Slides 1.4 | PowerPoint
- Classroom Slides 1.4 | Google Slides
- What We Know About Light Chart: Completed
- Partner Reading Guidelines: Completed
- Explanation Language Frame: Lesson 1.4
- Cause and Effect T-chart

22 Lessons

## Light and Sound

Printable Teacher Guide

### Unit Overview

What's in This Unit?

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Read more >

### Chapters

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

LESSON 1.1  
Pre-Unit Assessment

LESSON 1.2  
Can You See in the Dark?

LESSON 1.3  
Light-Source Hunt

LESSON 1.4  
Making Sense of Light Sources and Brightness

LESSON 1.5  
Light Makes Surfaces Look Bright

# Trainer Model

# On-the Fly Assessment

## Modeling an On-the-Fly Assessment

### Activity 3


# Introducing Cause and Effect





# **Chapter 1 Question**

**How do we make brighter or darker areas?**



\_\_\_\_\_ so \_\_\_\_\_.

\_\_\_\_\_

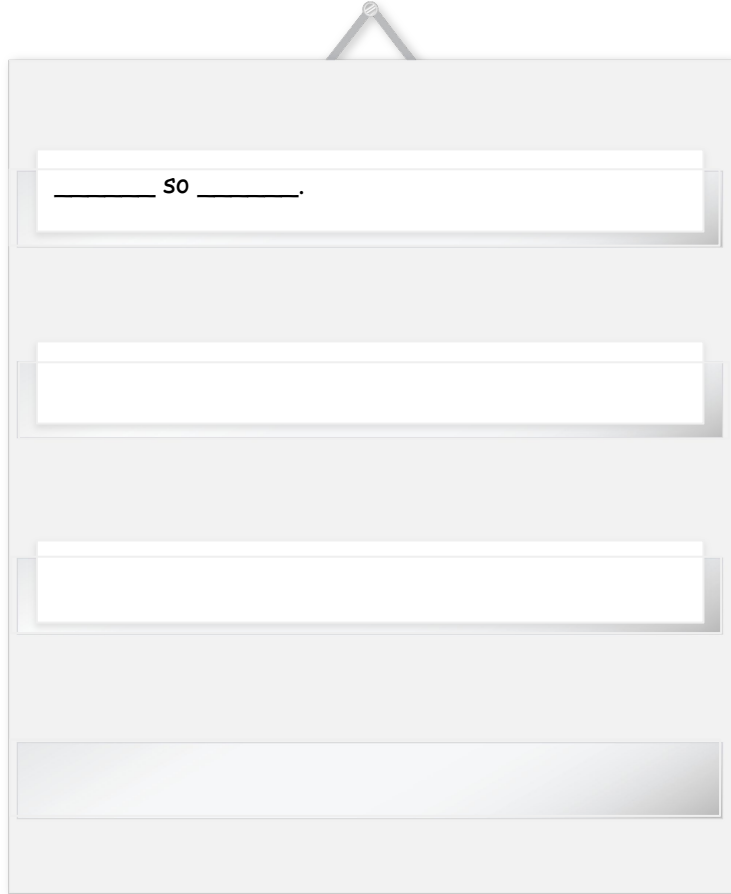
\_\_\_\_\_

\_\_\_\_\_

Scientists need to know **what** happened, and they also need to know **why** it happened.

The word **so** shows that two things that happened are connected.





\_\_\_\_\_ so \_\_\_\_\_.

Let's practice using these words to talk about how everyday things are **connected**.

We can make sentences about **kicking a ball** and **biting an apple**.

Now let's connect some ideas about light.



What happens when **light** comes from the **streetlight**?

\_\_\_\_\_ so \_\_\_\_\_.

Light comes from the \_\_\_\_\_ , so the \_\_\_\_\_

looks \_\_\_\_\_ .




We can use these words  
to **explain** our ideas  
about the pictures in *Can  
You See in the Dark?*

There is a pattern. Something happens with light, so a surface looks bright.

This is something scientists and engineers think about—**cause and effect**.

It means that one thing makes something else happen.

Cause	Effect
I kicked the ball.	It rolled across the playground.
I bit the apple.	My loose tooth came out.
	


We can use this chart to list more examples of cause and effect.



What are some everyday examples of **cause and effect** like the ones we talked about?


\_\_\_\_\_ so \_\_\_\_\_.



Cause	Effect
I kicked the ball.	It rolled across the playground.
I bit the apple.	My loose tooth came out.
	

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We can use this chart to list more examples of cause and effect.

 What are some everyday examples of **cause and effect** like the ones we talked about?

### Teacher action:

Post the Cause and Effect T-chart in the discussion area. Under the column headings "Cause" and "Effect," record the examples you discussed earlier. In the "Cause" column, write "I kicked the ball"; in the "Effect" column, write "It rolled across the playground." In the "Cause" column, write "I bit into the apple"; in the "Effect" column, write "My loose tooth came out."

### Teacher action:

Add more student-generated ideas of everyday examples to the T-chart and have the class try each one out by using the \_\_\_\_\_ so \_\_\_\_\_ language frame.

### On-the-Fly Assessment 3: Generating Causes and Effects

**Look for:** Students will be generating everyday examples of connected events. You may notice that some examples are direct cause-and-effect relationships, and others may be related events where one does not cause the other. Note if the examples that students offer are correlations or things that happen to go together but don't necessarily cause the other (e.g., When school is over, you go home.). Also notice if students reverse the effects and the causes when constructing the Cause and Effect T-chart or the sentences from the examples on the T-chart.

**Now what?** Students will have other opportunities in this unit to practice constructing causal explanations with light's effects on surfaces. This is a first opportunity to notice if students come in with prior knowledge about these connections, or if they need more practice throughout the school day.

## Lesson 1.4, Activity 3

### On-the-Fly Assessment 3: Generating Causes and Effects

Look for

**Look for:** Students will be generating everyday examples of connected events. You may notice that some examples are direct cause-and-effect relationships, and others may be related events where one does not cause the other. Note if the examples that students offer are correlations or things that happen to go together but don't necessarily cause the other (e.g., When school is over, you go home.). Also notice if students reverse the effects and the causes when constructing the Cause and Effect T-chart or the sentences from the examples on the T-chart.

**Now what?** Students will have other opportunities in this unit to practice constructing causal explanations with light's effects on surfaces. This is a first opportunity to notice if students come in with prior knowledge about these connections, or if they need more practice throughout the school day.

## Collecting formative assessment data

Create a system that's easy for you to use.

Grade :

Lesson

Look for 1:

Look for 2:

[illegible]




# Example assessment (On-the-Fly, Lesson 1.4, Activity 3)

## Reflection


- What **data** can a teacher collect from this activity?
- What can a teacher **do** with this information?

Lesson 1.4: Making Sense of Light Sources and Brightness


Activity 3

Cause	Effect
I kicked the ball.	It rolled across the playground.
I bit the apple.	My loose tooth came out.
	

We can use this chart to list more examples of cause and effect.

 What are some everyday examples of **cause and effect** like the ones we talked about?

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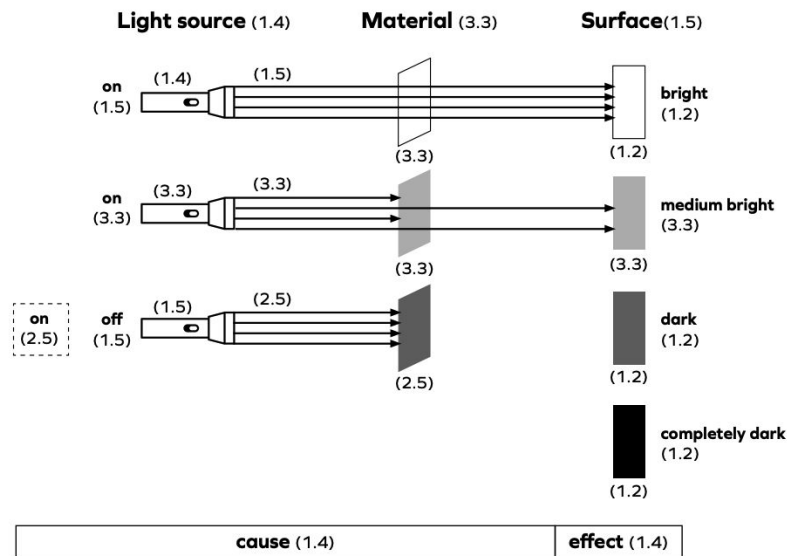
# Additional formative assessment information

## On-the-Fly Assessments

In addition to assessing concepts in the Progress Build, some On-the-Fly Assessments provide data about:

- Science and Engineering Practices
- Crosscutting Concepts
- Literacy skills
- Student collaboration

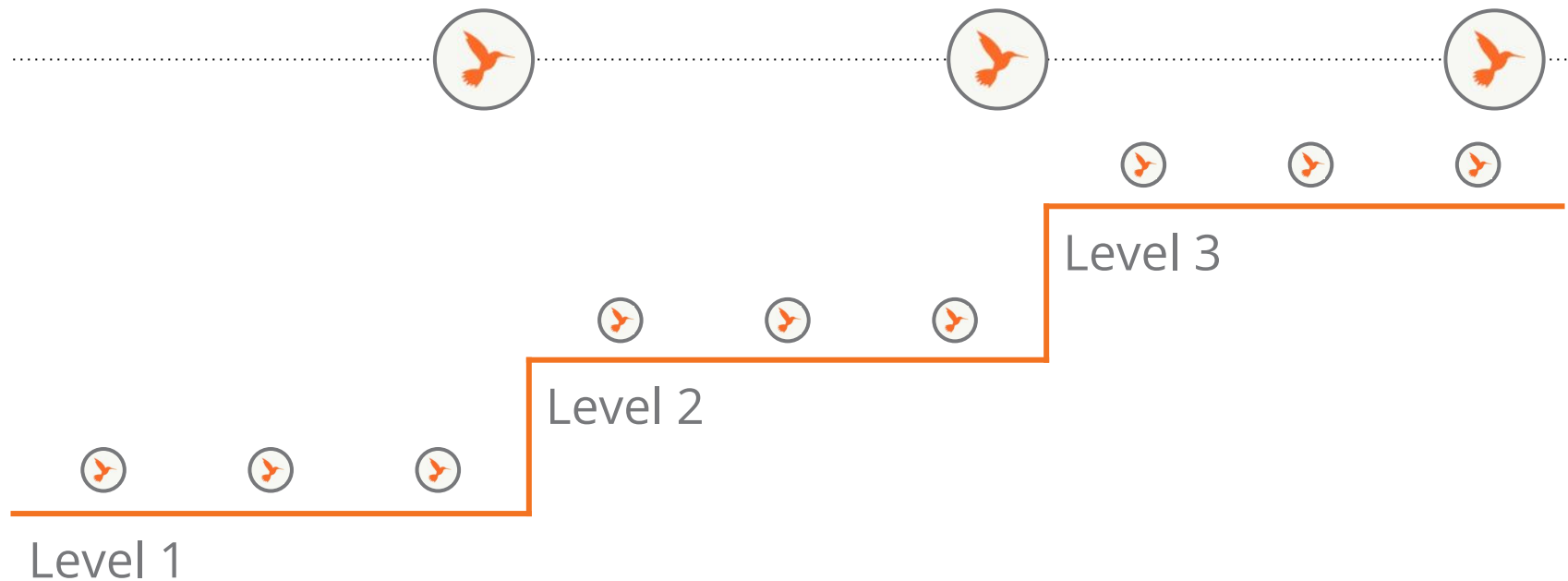
### What We Know About Light



# Questions?

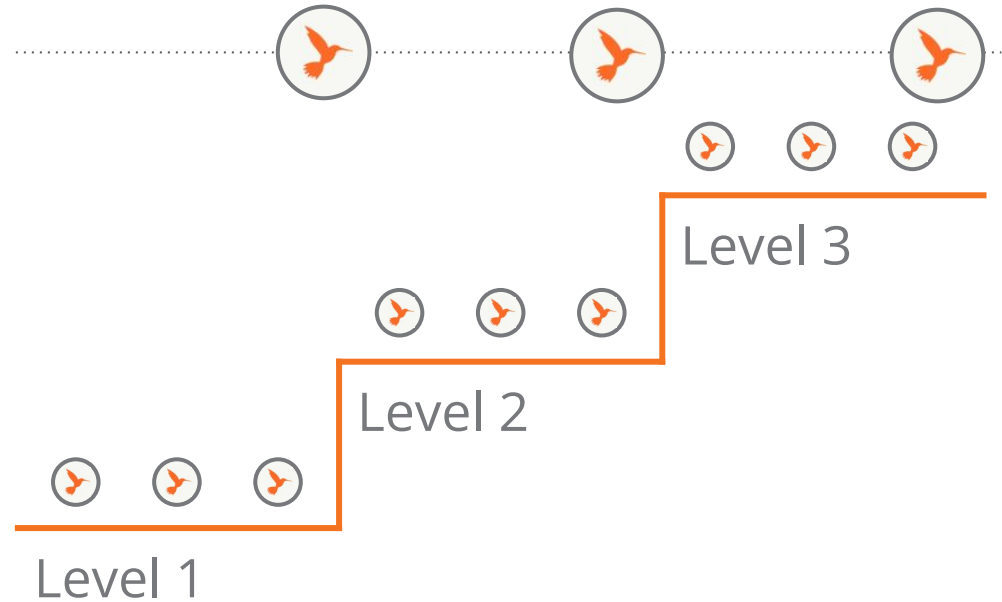


# Critical Juncture Assessments

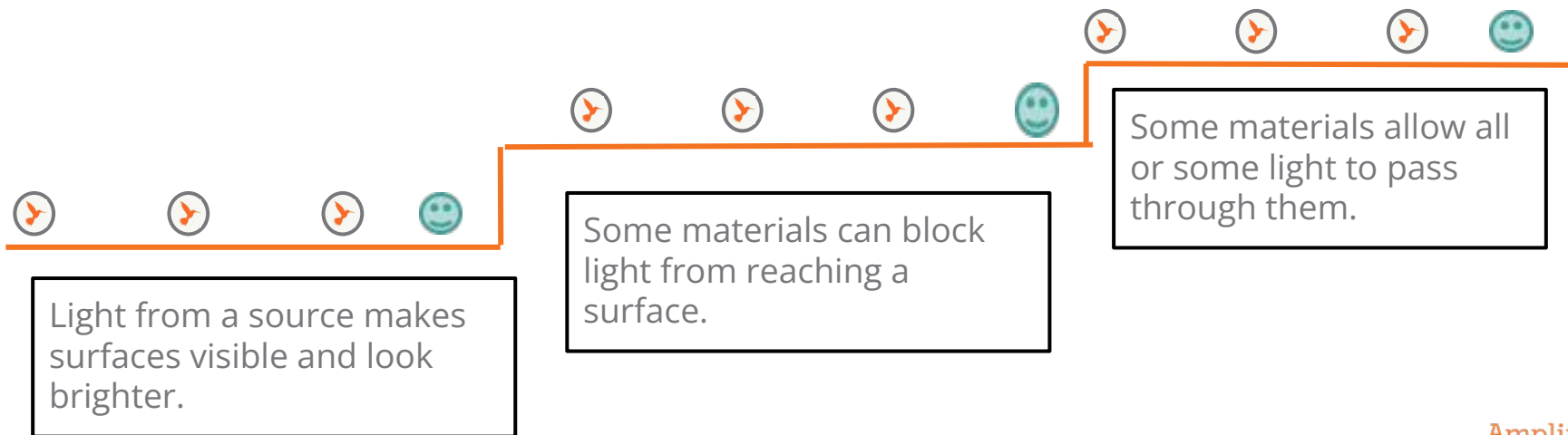
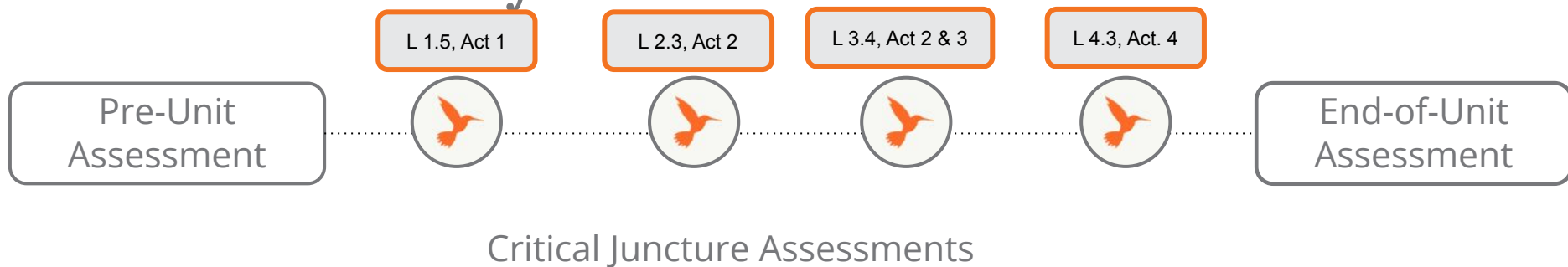


# Critical Juncture Assessments

- Track student progress between Progress Build levels
- Embedded into instruction
- Assessment resource includes “Assess Understanding” and “Tailor Instruction”



# K-5 Assessment System



# Formative assessment information

## Locating assessment resources

### Full text of assessment

- Embedded Formative Assessments document
- Instructional guide
- Classroom Slides notes

The screenshot displays a digital assessment interface. At the top, there are two tabs: '1 WRITING Critical Juncture: Writing to Reflect' and '2 HANDS-ON Introducing the Mystery Box'. The main title is 'Critical Juncture: Writing to Reflect'. Below the title, it states: 'Students demonstrate their understanding of the content presented thus far through a short writing activity. (15 min)'. On the right side, there are two icons: 'EMBEDDED FORMATIVE ASSESSMENT' and 'INSTRUCTIONAL GUIDE'. The main content area shows a writing prompt titled 'Writing About How Animals Use Senses'. The prompt asks students to think about the video they just watched and answer questions. The prompt includes a section for 'Turn to page 15 in your notebooks.' and a section for 'Think about the animal videos you just watched. Answer the questions.' Below the prompt, there is a 'CRITICAL JUNCTURE' label. At the bottom, there is a 'Teacher action' section with two actions: 'Read the instructions and the writing prompt out loud.' and 'Circulate as students work, helping as necessary.' Below the teacher actions, there is a section titled 'Critical Juncture Assessments 1: Writing About How Animals Use Senses'. This section includes an 'Assess understanding' paragraph and a 'Tailor instruction' paragraph. The 'Assess understanding' paragraph states: 'The purpose of this Critical Juncture is to assess students' understanding of how animals use senses to get information about their environment. At this point in the unit, students should be able to demonstrate their understanding that scent and sound carry information from the environment and that animals have sensory structures, such as a nose and ears, to receive that information. Students should be able to make the connection that being able to receive such information is necessary to fulfill the animal's various needs for survival. Students should be able to identify the different ways in which animals gather information about their environment using different sensory structures. In their responses, look for students to demonstrate this understanding by connecting sensory structures (e.g., nose) to the information they get from the environment (e.g., scents).' The 'Tailor instruction' paragraph states: 'If students are not yet understanding the various senses that an animal might use to get information about its environment, have them act out what it would be like for the animals in the videos they watched earlier to not be able to use their sensory structures to get information. For example, for the antelope, have students cover their ears in order to not hear well. For the raccoon, have students be unable to use their hands. Without the functions of those structures, have students try to get information about something in the environment (e.g., the classroom) using other senses. Ask students questions such as What kinds of information are you able to get without this function? and What other senses are you using and what structures are helping you get the information? This could serve as a review of the senses and the structures that are responsible for them. Alternatively, you can lead a discussion to review each sense—what it does and what structures are involved.'

# Critical Juncture Assessment

## Lesson 1.5, Activity 1

22 Lessons

Light and Sound

Printable Teacher Guide

1 HANDS-ON Exploring How to Make Surfaces Bright

2 WRITING Diagramming Light on a Surface

3 WRITING Explaining Bright and Dark Surfaces

### Exploring How to Make Surfaces Bright

Students use flashlights to make surfaces bright. The teacher circulates and asks questions as students explore.(15 min)

EMBEDDED FORMATIVE ASSESSMENT

INSTRUCTIONAL GUIDE

Critical Juncture 1:  
Students' Understanding of Light Making Surfaces Look Bright

CRITICAL JUNCTURE

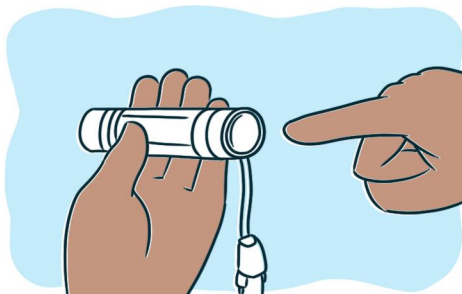
### Digital Resources

- Classroom Slides 1.5 | PowerPoint
- Classroom Slides 1.5 | Google Slides
- What We Know About Light Chart: Completed
- Explanation Language Frames: Lesson 1.5
- Shared Writing
- What Engineers Do chart: Completed
- Chapter 1: Clipboard Assessment Tool



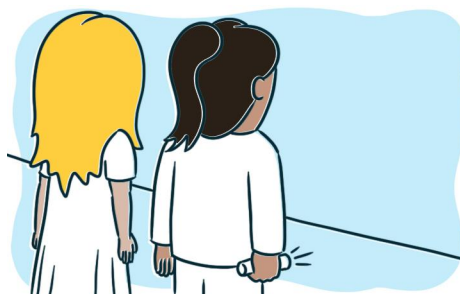
We're Going to Model  
This In Particular After  
Lunch

## Making Surfaces Bright



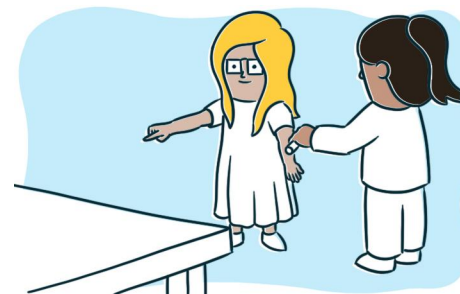
1.

**Turn the flashlight on.**  
Press the button.



2.

Choose **one surface** at a  
time, and **make it bright**.



3.

**Take turns.** Pick a  
different surface each  
time.





# Embedded Formative Assessment

## Lesson 1.5, Activity 1

### Critical Juncture 1: Students' Understanding of Light Making Surfaces Look Bright

**Assess understanding:** Question students as they explore in order to assess their understanding of light from a source getting to a surface and making it look brighter. The question included with the Chapter 1: Clipboard Assessment Tool (*Why do you think pointing the flashlight at \_\_\_\_ makes it look brighter?*) is available as a reference. There is also a space to record notes about several students' responses. In general, students who understand these ideas should say that light gets to, hits, or shines on the surface to make it brighter. It is important to keep in mind that students have an additional opportunity to learn this content as you model the light diagram and the written explanation with them.

**Tailor instruction:** If many of your students are not showing evidence of understanding that light from a source gets to a surface and makes it look brighter, and you are not confident that the modeling has addressed those gaps in their understanding, we recommend offering additional instruction in Lesson 2.1. In Activity 2 of Lesson 2.1, you can take time for a more focused review and instruction showing light getting to the wall. (See the Augmenting Instruction: Differentiating in Response to Critical Juncture Assessment note in the Teacher Support tab in that activity for details.) If a smaller number of your students are not showing evidence of understanding those ideas, you can lead a similar discussion with just those students, before or during Lesson 2.1.

# K-1 Clipboard Assessment Tool

The Clipboard Assessment Tool offers a support for collecting data for the On-the-Fly and Critical Juncture Assessments that align to each Progress Build level in the unit.

Lesson  
Light  
Bright

Printable

2 WRITING  
Diagram  
Surface

Over  
Stude  
surf  
series  
look b  
Expla  
look b  
Share  
Junct  
stude  
purpo  
surf

Unit D  
puppe  
Chapt  
bright

## Chapter 1: Clipboard Assessment Tool

**Progress Build Level 1:** Anything that is visible has light getting to it from a source. If no light from a source is present, there is no light to get to anything, so nothing is visible (you can't see anything). When light from a source gets to a surface, it looks brighter than without the light.

Question to ask students	Students who understand . . .
Lesson 1.5, Activity 1: Why do you think pointing the flashlight at _____ makes it look brighter?	should describe light from the flashlight as getting to/hitting/shining on the surface.

Student's name	Notes

Light and Sound: Puppet-Theater Engineers (Grade 1)  
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ed  
age

# Formative assessment information

## Possible student responses

- Within assessments:
  - “Look fors” (OtF)
  - “Assess Understanding” (CJ)
- Possible responses within the Instructional Guide
- Digital resources
  - Assessment Guides
  - Teacher References

3 TEACHER-LED DISCUSSION  
Debriefing the Shadow Exploration

4 WRITING  
Recording Engineers' Notes About Shadows

### Recording Engineers' Notes About Shadows

The teacher introduces students to the practice of writing engineers' notes. Students write engineers' notes about their shadow explorations. (15 min)

EMBEDDED FORMATIVE ASSESSMENT

INSTRUCTIONAL GUIDE

Step-by-step Teacher Support **Possible Responses** My Notes

**Investigation Notebook**

**Engineer's Notes: Making Sense of Shadows (page 7)**

**Image:** Light source and surface with a hand drawn in between the two.

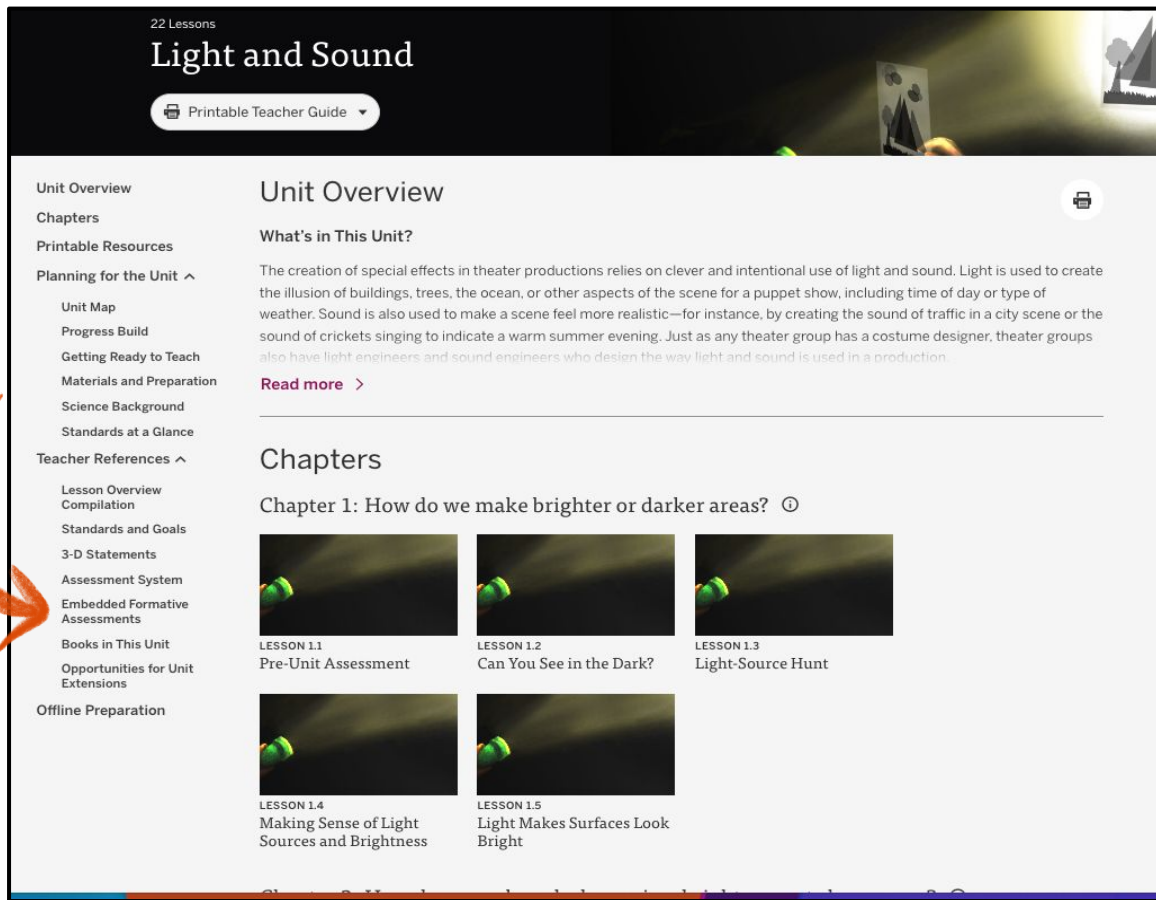
**Writing:** I put my hand in front of the light, so I saw a shadow. **Or:** I saw a shadow on the floor, because I put my hand in front of the light.

# Formative Assessments

## Work Time

## Take a moment to explore Embedded Formative Assessments

What do the On-the-Fly and Critical Juncture Assessments look like for Chapters 2, 3, and 4?



22 Lessons

## Light and Sound

Printable Teacher Guide

- Unit Overview
- Chapters
- Printable Resources
- Planning for the Unit ^
  - Unit Map
  - Progress Build
  - Getting Ready to Teach
  - Materials and Preparation
  - Science Background
  - Standards at a Glance
- Teacher References ^
  - Lesson Overview Compilation
  - Standards and Goals
  - 3-D Statements
  - Assessment System
  - Embedded Formative Assessments
  - Books in This Unit
  - Opportunities for Unit Extensions
- Offline Preparation

### Unit Overview

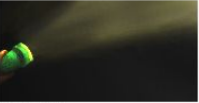
What's in This Unit?

The creation of special effects in theater productions relies on clever and intentional use of light and sound. Light is used to create the illusion of buildings, trees, the ocean, or other aspects of the scene for a puppet show, including time of day or type of weather. Sound is also used to make a scene feel more realistic—for instance, by creating the sound of traffic in a city scene or the sound of crickets singing to indicate a warm summer evening. Just as any theater group has a costume designer, theater groups also have light engineers and sound engineers who design the way light and sound is used in a production.

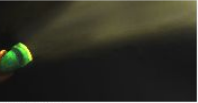
[Read more >](#)

### Chapters

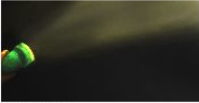
Chapter 1: How do we make brighter or darker areas? ⓘ



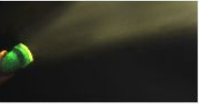
LESSON 1.1  
Pre-Unit Assessment



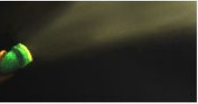
LESSON 1.2  
Can You See in the Dark?



LESSON 1.3  
Light-Source Hunt



LESSON 1.4  
Making Sense of Light Sources and Brightness



LESSON 1.5  
Light Makes Surfaces Look Bright

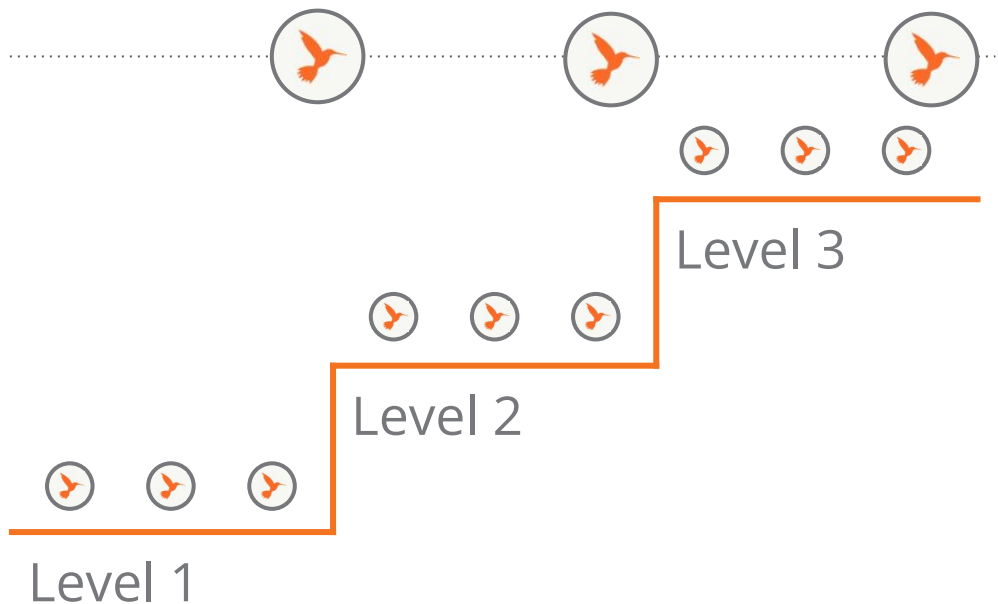
# Embedded formative assessments

## Reflection

With a partner, describe the relationship among:

- Progress Build
- On-the-Fly Assessments
- Critical Juncture Assessments

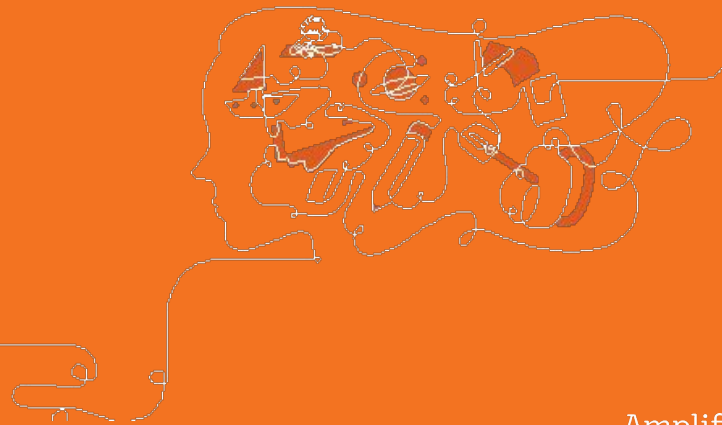
**Check-in about how each of you feels about the assessments and also how ready you're able to use each**



# Questions?

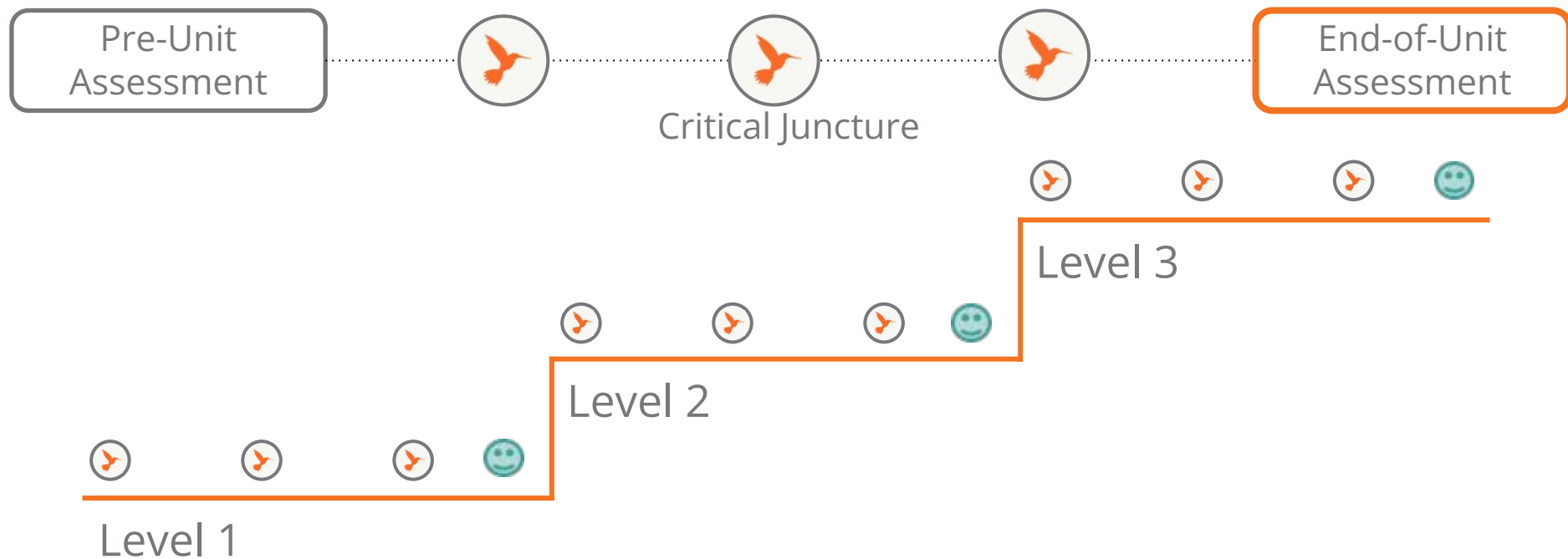


# End-of-Unit Assessment





# K-5 Assessment System



# End-of-Unit Assessment

## 3-dimensional assessment opportunity

- Summative assessment of mastery of Disciplinary Core Ideas
- Also an Assessment of Science and Engineering Practices, and Crosscutting Concepts



# 3 Dimensional Learning

## Assessment Guide

### Science and Engineering Practice

- Practice 6: Constructing Explanations and Designing Solutions
  - CEDS-P1: Use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena.

### Disciplinary Core Ideas

- PS4.B: Electromagnetic Radiation:
  - PS4.B-P1: Objects can be seen if light is available to illuminate them or if they give off their own light. (1-PS4-2)
- PS4.B: Electromagnetic Radiation:
  - PS4.B-P2: Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach... (1-PS4-3)

### Crosscutting Concept

- Cause and Effect
  - CE-P1: Simple tests can be designed to gather evidence to support or refute student ideas about causes.

From Assessment  
Guide: Assessing  
Students' End-of-Unit  
Explanations  
About a Scene with  
Light Sources and  
Bright and Dark Areas

# Lesson Review Prior to the End of Unit Assessment

## Lesson 4.5

- Teacher models how to complete the mini-book
- Students finish their mini books and read it to their partners
- Partners share and explain their solutions-how their stencils and sound sources work together
- Partners share and explain their solutions-how their stencils and sound sources work together
- Teachers shares artifacts from each chapter and partners discussed what they learned.

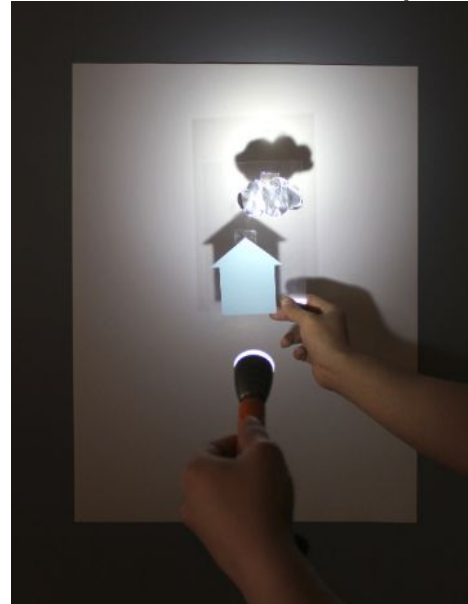
# End of Unit Assessments

## What are students being asked to do?

Explain how each part of your stencil work.

Why do these different areas of the wall look dark, bright, and medium bright?

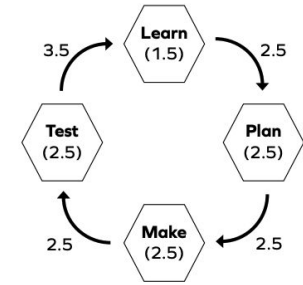
- Why does this area of the surface look bright?
- Why does this area of the surface look dark?
- Why does this area of the surface look medium bright?



### What Engineers Do (1.2)

Find out about a problem. (1.2)

Design a solution (2.5)



Share to communicate and explain your ideas. (1.5)

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# End of Unit Assessment Rubric

## From Assessment Guide: Assessing Students' End-of-Unit Explanations About a Scene with Light Sources and Bright and Dark Areas

### Rubric 1: Assessing Students' Understanding of Science Concepts in the Unit

Rubric 1 (on the next page) focuses on students' explanations of how their stencils create different areas of brightness on the surface and how their explanations reflect an understanding of the disciplinary core ideas in the unit. Rubric 1 is designed to guide the teacher in making inferences when assessing students' understanding and may be used summatively to gauge students' levels of understanding of science concepts from the unit.

If you would like to score students' explanations for grading purposes, we recommend using a 5-point scale (0–4). An explanation that provides an accurate and sufficient response to each question listed in the rubric should score a 4. An explanation that does not provide an accurate response to any questions should score a 0. For explanations that provide accurate responses to some, but not all questions, assign scores from 1 to 3 at your discretion. For guidance on what could be considered an accurate explanation for each question, see the Possible Accurate Student Responses table at the end of this document.

#### Rubric 1: Assessing Students' Understanding of Science Concepts in the Unit

- Did the student describe light as coming from the light source (the flashlight)?
- Did the student explain the brighter and darker areas as a result of more light or less light getting to the surface?
- Did the student describe the opaque material as letting no light pass through (or as blocking all light)?
- Did the student explain that the dark area is dark because no light gets to the surface?
- Did the student describe the transparent material as letting all light pass through (or as blocking no light)?
- Did the student explain that the bright area is bright because all light gets to the surface?
- Did the student describe the tinted material as letting some light pass through (or as blocking some light)?
- Did the student explain that the medium-bright area is medium bright because some light gets to the surface?

### Rubrics 2 and 3

Rubrics 2 and 3 focus on students' explicit understanding of the crosscutting concept of Cause and Effect and their use of the science and engineering focal practice (evaluating a solution based on design goals), respectively. Given that students' understanding of crosscutting concepts and their dexterity with science practices develop through regular opportunities across multiple units, mastery is outside the scope of a single unit. Therefore, these two rubrics are intended to be used formatively to guide teacher feedback and future instruction rather than to produce a score or a grade.

### Rubric 2: Assessing Students' Understanding of the Crosscutting Concept of Cause and Effect

Rubric 2 focuses on students' descriptions and identifications of an example of cause and effect from their puppet-show scenes), which is a unifying concept in science and engineering.

#### Rubric 2: Assessing Students' Understanding of the Crosscutting Concept of Cause and Effect

- Did the student describe an appropriate example of cause and effect, explicitly identify both cause and effect accurately, and provide evidence to support their ideas about the cause?
- Did the student provide an appropriate example of cause and effect from the stencil and sufficient evidence for their ideas about the cause? (e.g., Did the student indicate the effect as the observed brightness on the surface and the cause as the interaction between the light source and the material that produced that area of brightness?)
  - Did the student explicitly identify the cause and the effect in his/her examples?

### Rubric 3: Assessing Students' Understanding of the Practice of Evaluating a Solution Based on Design Goals

Rubric 3 focuses on students' evaluations of their solutions (stencils) in relation to the puppet-scene design goals.

#### Rubric 3: Assessing Students' Understanding of the Practice of Evaluating a Solution Based on Design Goals

- Did the student explicitly evaluate the performance of the solution (the areas on the surface created by the stencil) in relation to the design goals (the requested areas of brightness)?
- Did the student accurately state whether the solution met all the design goals?
  - Did the student evaluate each design goal individually? (e.g., *It's supposed to make a dark area, and it does that.*)
  - Did the student describe or point to the area that relates to the design goal(s) he/she claims was met? (e.g., *It's supposed to make a dark area, and the mountain is dark.*)

(continued on next page)

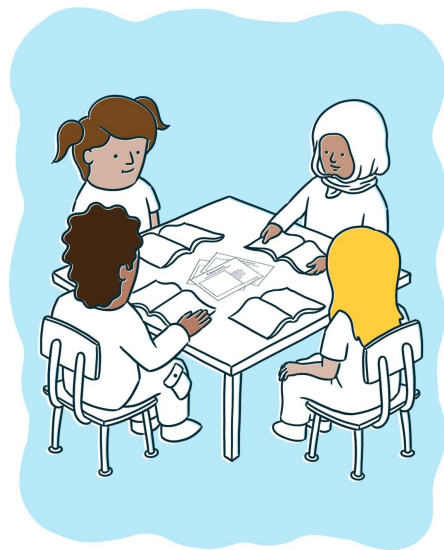
# End-of-Unit Assessment

## Work Time

With the Assessment Guide for for Unit (End of Last Chapter),

1. Read through the rubrics, questions, and slide deck notes (teacher action).
2. Add any additional questions to the slides that will elicit the explanations needed.
3. Determine what will you have the other students doing while you are individually assessing students.

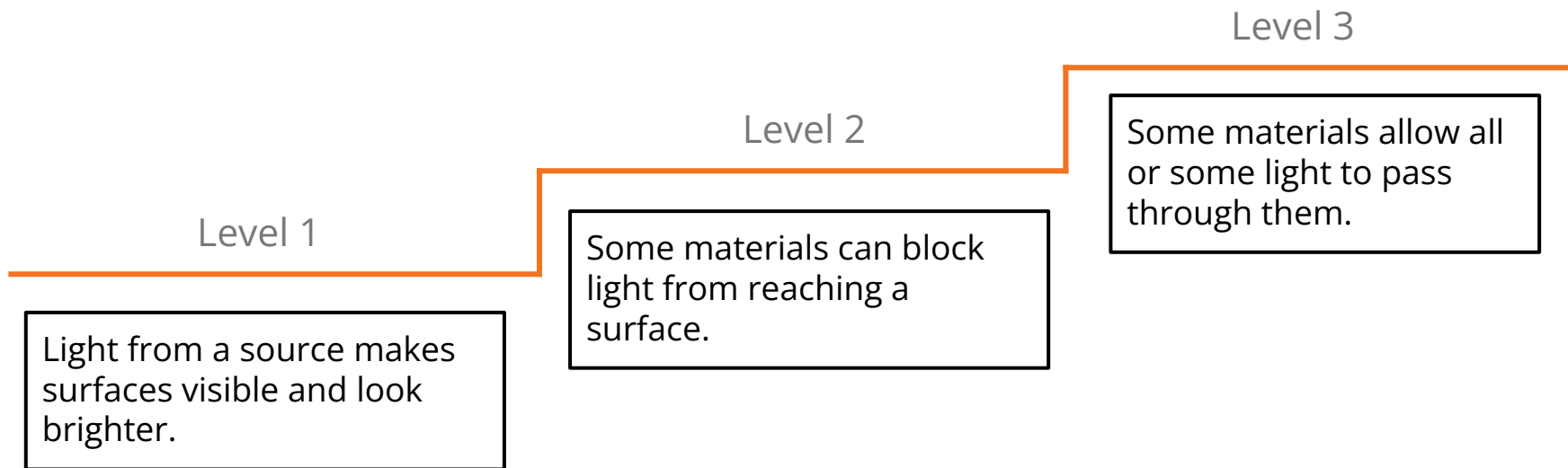
**We're going to share out findings and best practices in about 10-15 mins.**



# 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.





# Pre-Unit Assessment

## Lesson 1.1

Locate the Pre-Unit Assessment Guide in Lesson 1.1 of your unit and skim through them.

**Open up the classroom slides and see how the pre-unit assessment is embedded in the lesson.**

Also, look at Activity 1 and read how it is explained.

Lesson 1.1:  
Pre-Unit Assessment

Printable Lesson Guide

1 TEACHER-LED DISCUSSION  
Leading a Pre-Unit  
Assessment Conversation

2 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 measure growth of understanding over the course of the unit. These explanations can also provide the teacher with insight into students' thinking as they begin the unit. This will allow the teacher to draw connections to students' experiences and to watch for preconceptions that might get in the way of understanding. The teacher then models how to use the unit's reference book, *Engineering with Light and Sound*. Pairs look through the reference book and learn that engineers make solutions to a variety of

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

Questioning Strategies for Grades K-1

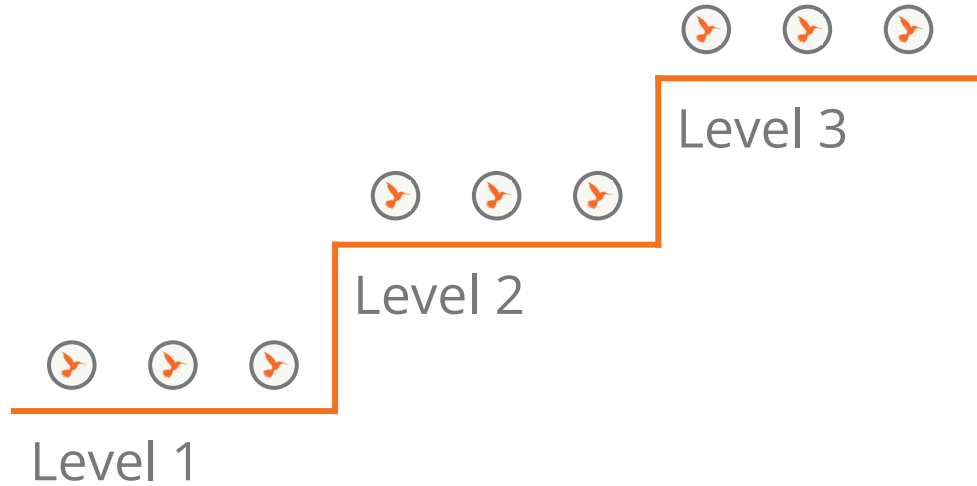
Light and Sound Family Connections Letter

Crosscutting Concept Tracker

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

# On-the-Fly Assessments

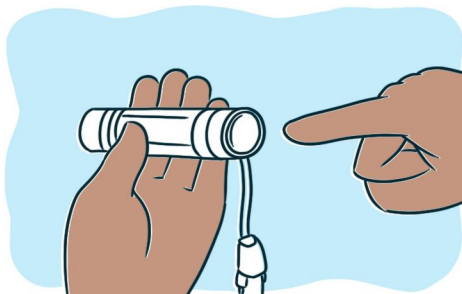
- Track student progress within a Progress Build level
- Embedded into instruction
- Assessment resource includes “Look for” and “Now what”
- Incremental build towards the Critical Juncture



## Critical Juncture Assessments

### Making Surfaces Bright

We're Going to Model  
This In Particular After  
Lunch



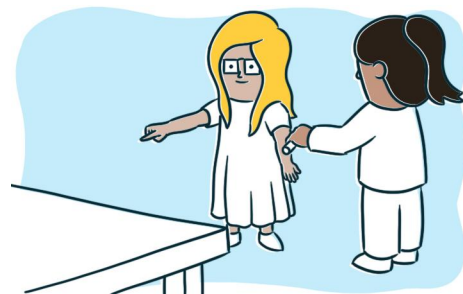
1.

**Turn the flashlight on.**  
Press the button.



2.

Choose **one surface** at a  
time, and **make it bright**.



3.

**Take turns.** Pick a  
different surface each  
time.



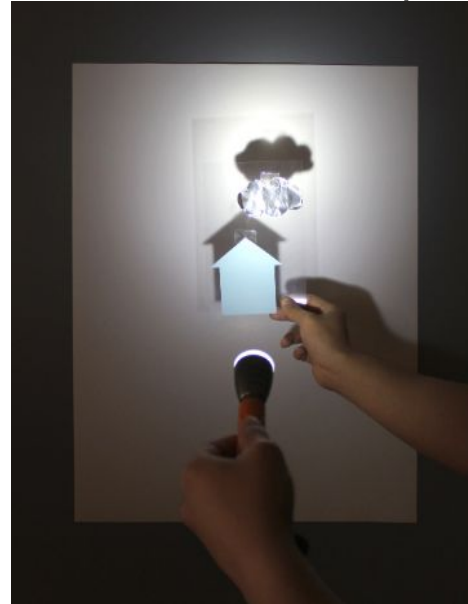
# End of Unit Assessments

## What are students being asked to do?

Explain how each part of your stencil work.

Why do these different areas of the wall look dark, bright, and medium bright?

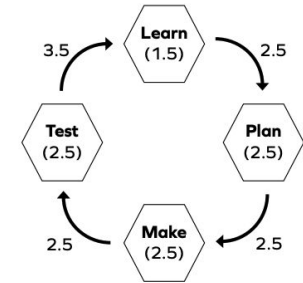
- Why does this area of the surface look bright?
- Why does this area of the surface look dark?
- Why does this area of the surface look medium bright?



### What Engineers Do (1.2)

Find out about a problem. (1.2)

Design a solution (2.5)



Share to communicate and explain our ideas. (1.5)

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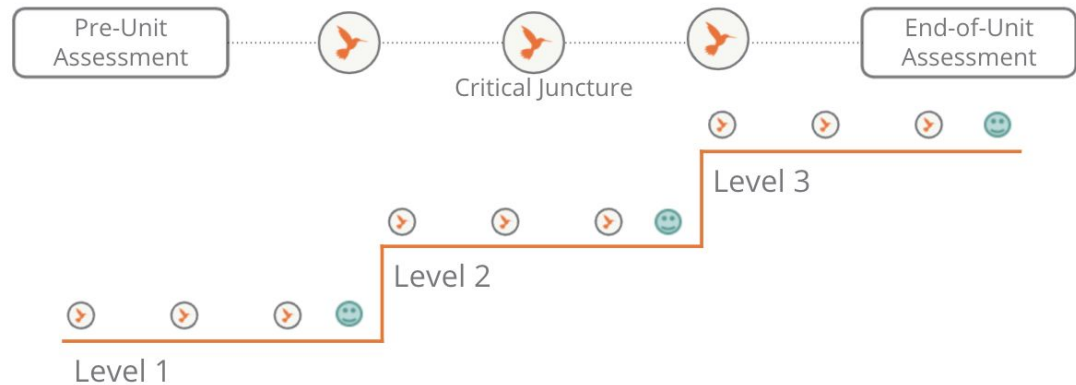
# Assessment System

## Reflection

With a NEW partner,

- How do the Progress Build and Assessments work as a **System**?
- What are the benefits of this system for students?  
For teachers?
- How might **YOU** see yourself using these tools?  
Which resonate with you or interest you most?

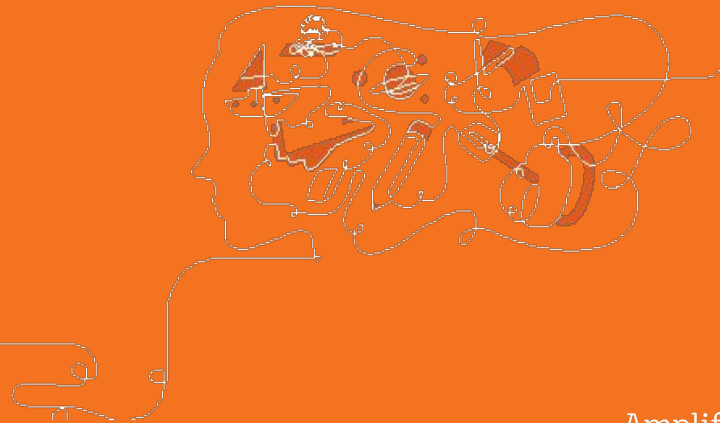
### K-5 Assessment System



# Questions?



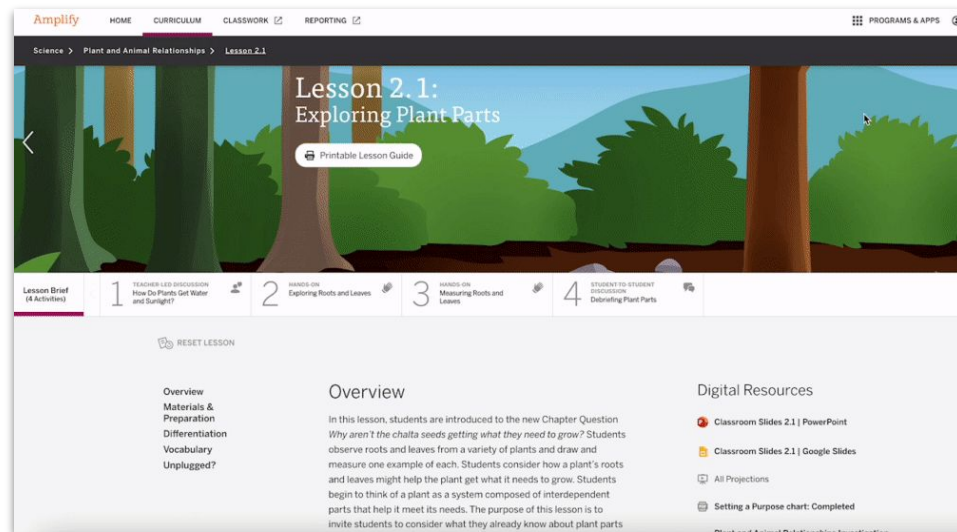
# Lunch Break



# Resources for NGSS progress monitoring

## NGSS Benchmark assessments

- Accessible in the Global Navigation menu
- Grades 3-5
- 4 assessments per grade





# Resources for NGSS progress monitoring

## 3D Assessment Objectives

- Located in the Unit Guide
- Identifies where each dimension of the target Performance Expectations are assessed in the unit, in the grade, or in the grade-band.

**2-LS2-1.** Plan and conduct an investigation to determine if plants need sunlight and water to grow.

**SEP:** Planning and Carrying Out Investigations

*Needs of Plants and Animals (Grade K)*

OTFA 7: Lesson 2.3, Activity 3  
OTFA 10: Lesson 3.1, Activity 2

*Pushes and Pulls (Grade K)*

PRE: Lesson 1.1, Activity T  
OTFA 4: Lesson 2.1, Activity 2

*Sunlight and Weather (Grade K)*

OTFA 2: Lesson 2.1 Activity 4  
INV: Lesson 4.1, Activities 3 + 4 (S)  
OTFA 14: Lesson 5.2, Activity 4

*Light and Sound (Grade 1)*

OTFA 2: Lesson 1.3, Activity 3  
OTFA 7: Lesson 3.1, Activity 2  
INV: Lesson 4.1, Activity 3 (S)

*Spinning Earth (Grade 1)*

OTFA 7: Lesson 3.1, Activity 2  
OTFA 8: Lesson 3.3, Activity 4  
OTFA 11: Lesson 4.1, Activity 2

*Plant and Animal Relationships (Grade 2)*

OTFA 4: Lesson 1.6, Activity 4  
OTFA 9: Lesson 3.3, Activity 3  
OTFA 12: Lesson 4.1, Activity 4  
OTFA 13: Lesson 4.2, Activity 4  
INV: Lesson 4.3, Activity 4 and Lesson 4.3, Activities 1–4 (S)  
OTFA 14: Lesson 4.3, Activity 3

**DCI:** LS2.A: Interdependent Relationships in Ecosystems

*Plant and Animal Relationships (Grade 2)*

PRE: Lesson 1.1, Activity 3  
CJ 1: Lesson 1.7 Activity 2  
OTFA 7: Lesson 2.3, Activity 3  
CJ 2a: Lesson 2.4, Activity 3  
CJ 2b: Lesson 2.5, Activity 3  
INV: Lesson 4.3, Activity 4 and Lesson 4.3, Activities 1–4 (S)  
EOU: Lesson 4.4, Activity 3 (S)

**CCC:** Cause and Effect

*Pushes and Pulls (Grade K)*  
PRE: Lesson 1.1, Activity T  
EOU: Lesson 6.3, Activity 1 (S)

*Sunlight and Weather (Grade K)*  
PRE: Lesson 1.3, Activity 4  
OTFA 13: Lesson 4.4, Activity 1  
EOU: Lesson 5.6, Activity 1 (S)

*Animal and Plant Defenses (Grade 1)*  
OTFA 3: Lesson 1.4, Activity 3

*Light and Sound (Grade 1)*  
PRE: Lesson 1.1, Activity 1  
OTFA 3: Lesson 1.4, Activity 3  
OTFA 9: Lesson 3.6, Activity 1  
INV: Lesson 4.1, Activity 3 (S)  
EOU: Lesson 4.6, Activity 1 (S)

*Changing Landforms (Grade 2)*  
OTFA 5: Lesson 2.4, Activity 2

*Properties of Materials (Grade 2)*  
OTFA 8: Lesson 2.3, Activity 5  
OTFA 16: Lesson 4.3, Activity 4  
EOU: Lesson 4.4, Activity 2 (S)

# Generating grades

## Group collaborative discussion

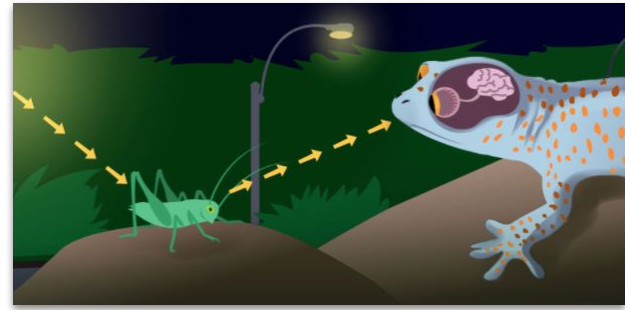
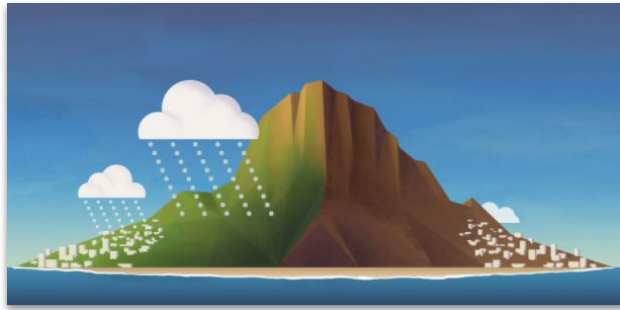
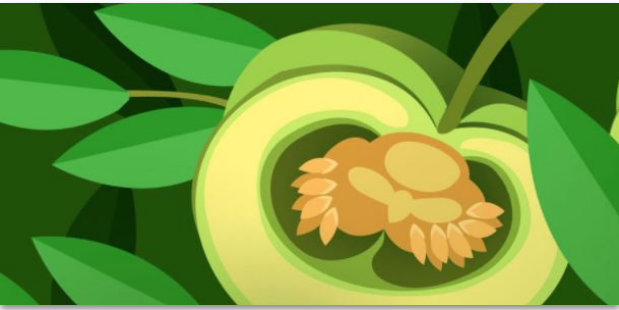
What are your district's grading requirements for science?

How will you use Amplify Science assessments to generate grades?



# Questions?





## Plan for the day

- Introduction & Framing
- Assessment System
- Progress Build
- Assessments
- Model Lesson (Overview of Lessons 1.1 - 1.4, and Model of Lesson 1.5)
- Planning Your Next Unit
- Closing

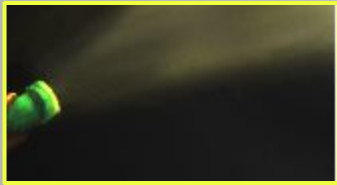
# Light and Sound

**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?



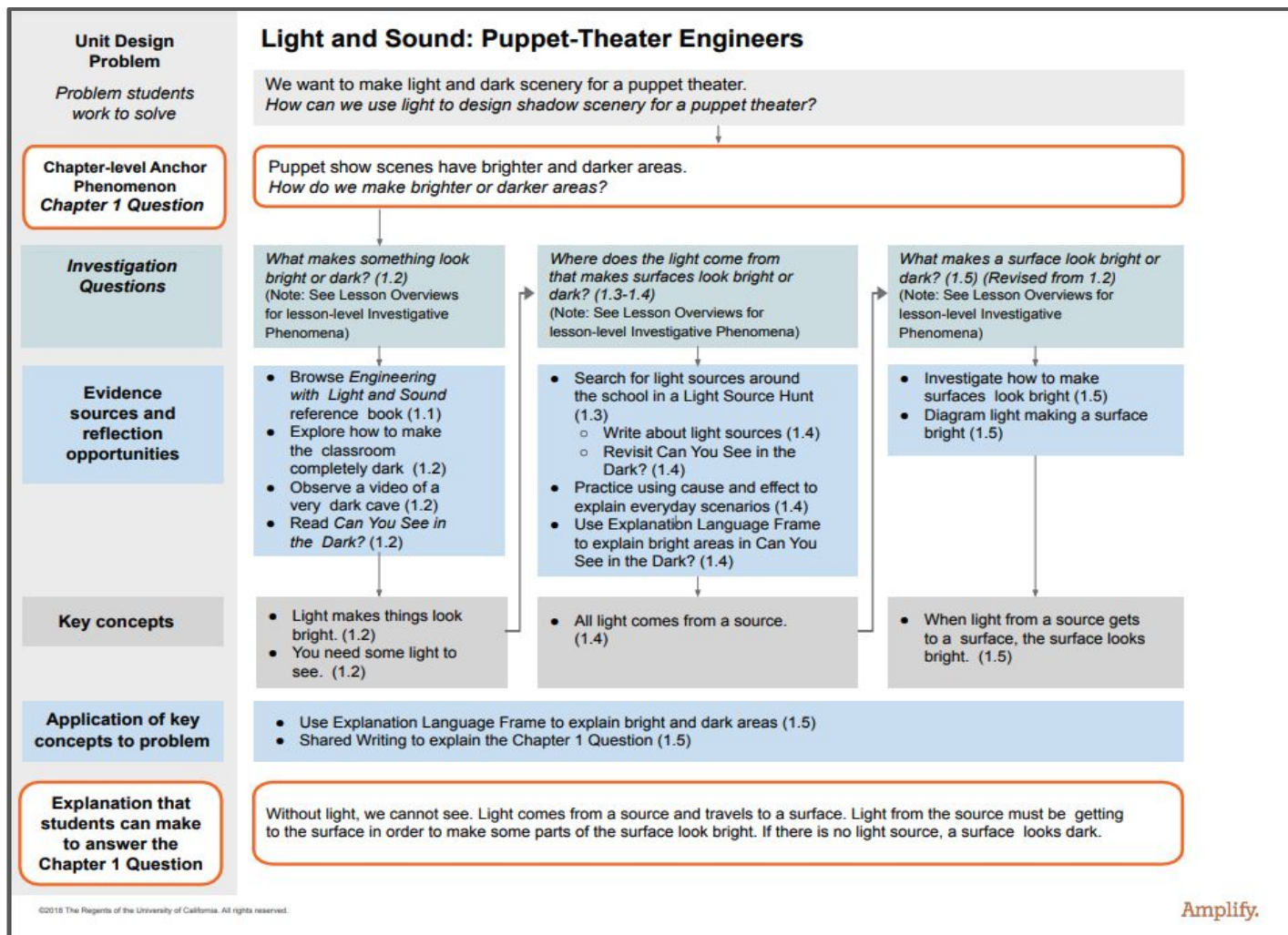
How do we make  
bright, medium  
bright, and dark  
areas in a puppet  
show scene?



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

# Coherence Flowchart

## Chapter 1





# Light and Sound

## Leading up to our model lesson

L 1.1-Pre-Unit Assessment and Introduction to Phenomenon, Browse *Engineering with Light and Sound*

L 1.2-Explore how to make the classroom completely dark, observe a video of a very dark cave, and Read *Can You See in the Dark?*

L 1.3 Search for light sources around the school in a Light Source Hunt.

L 1.4-Write about light sources, revisit *Can You See in the Dark?*, Practice using cause and effect to explain everyday scenarios, and use Explanation Language Frame to explain bright areas in *Can You See in the Dark?*

22 Lessons

## Light and Sound

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Books in This Unit

Opportunities for Unit Extensions

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### Unit Overview

#### What's in This Unit?

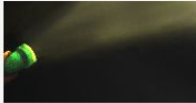
The creation of special effects in theater productions relies on clever and intentional use of light and sound. Light is used to create the illusion of buildings, trees, the ocean, or other aspects of the scene for a puppet show, including time of day or type of weather. Sound is also used to make a scene feel more realistic—for instance, by creating the sound of traffic in a city scene or the sound of crickets singing to indicate a warm summer evening. Just as any theater group has a costume designer, theater groups also have light engineers and sound engineers who design the way light and sound is used in a production.

[Read more >](#)

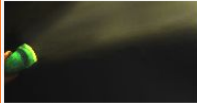
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### Chapters

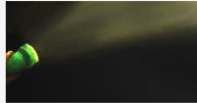
#### Chapter 1: How do we make brighter or darker areas? ⓘ



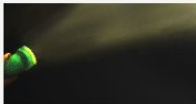
LESSON 1.1  
Pre-Unit Assessment



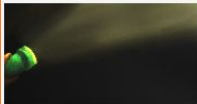
LESSON 1.2  
Can You See in the Dark?



LESSON 1.3  
Light-Source Hunt



LESSON 1.4  
Making Sense of Light Sources and Brightness



LESSON 1.5  
Light Makes Surfaces Look Bright



# Light and Sound

## Lesson 1.1

- Leading a pre-unit assessment conversation
- Introducing the puppet theater's problem and their role as engineers

22 Lessons

Light and Sound

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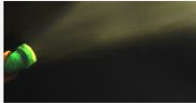
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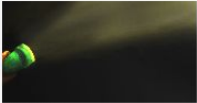
Read more >

Chapters

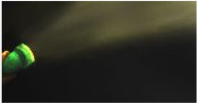
Chapter 1: How do we make brighter or darker areas? ⓘ



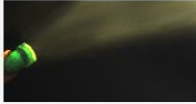
LESSON 1.1  
Pre-Unit Assessment



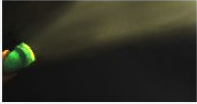
LESSON 1.2  
Can You See in the Dark?



LESSON 1.3  
Light-Source Hunt



LESSON 1.4  
Making Sense of Light Sources and Brightness



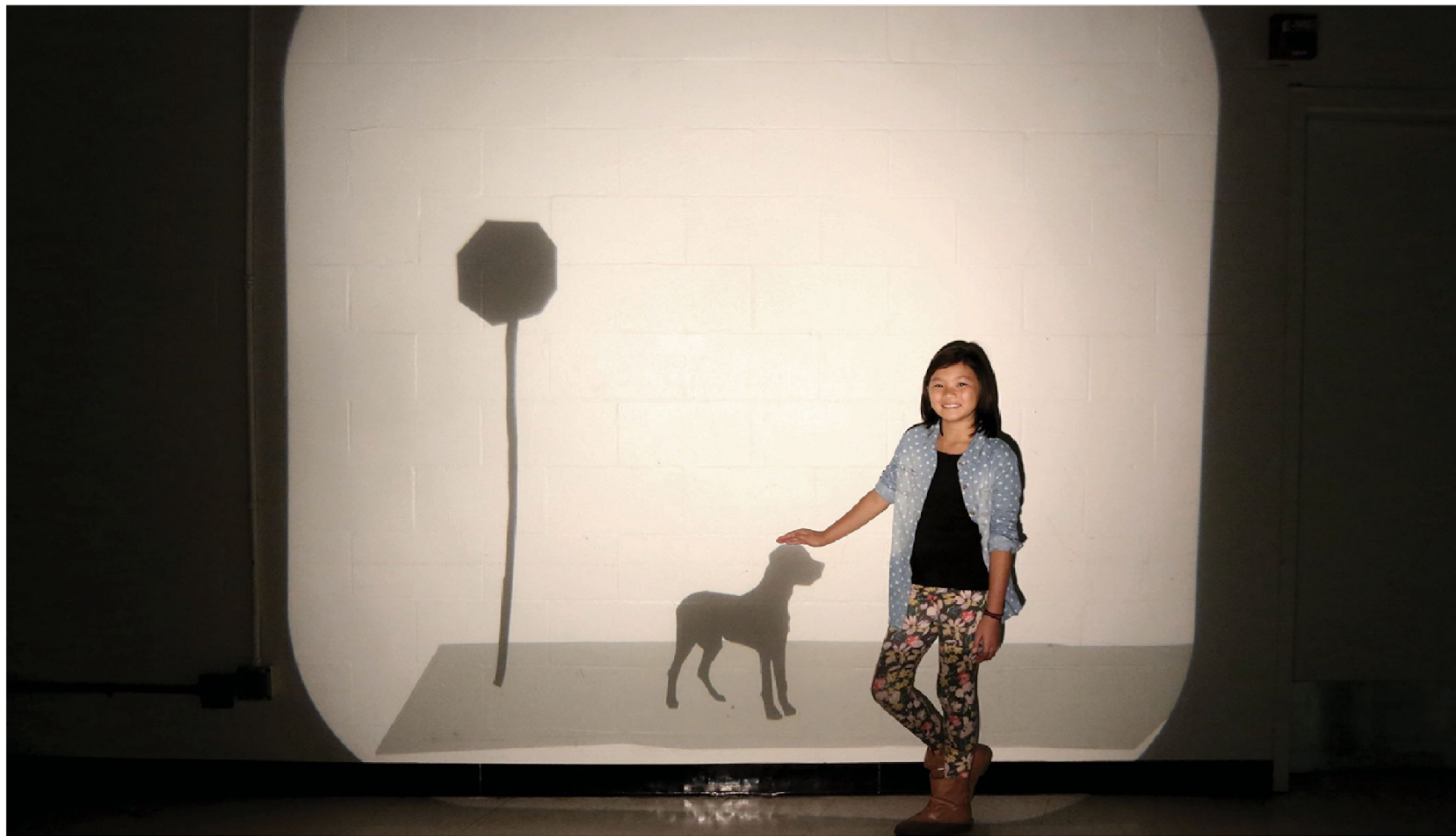
LESSON 1.5  
Light Makes Surfaces Look Bright

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.









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.

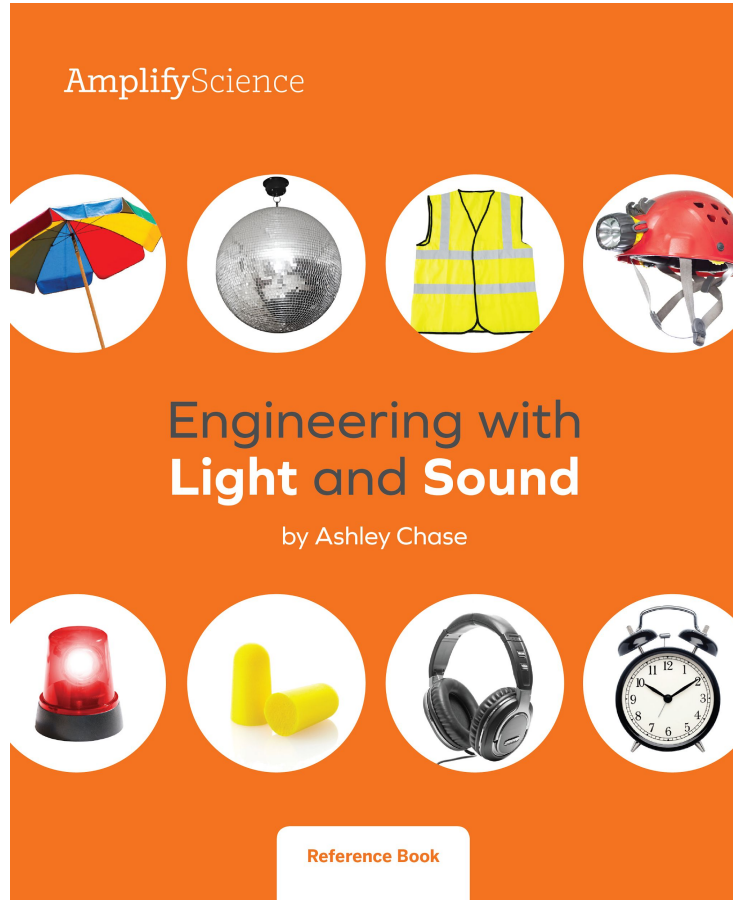
# Puppet Show: Scene 1





# Puppet Show: Scene 2





We will read this book about engineering to find out more about **what engineers do.**

This is a special type of book called a **reference book.**

# Light and Sound

## Lesson 1.2

- Observing a Dark Place
- Reading *Can You See in the Dark?* (Assessment, Questions about the Book)

22 Lessons

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Read more >

Chapters

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

LESSON 1.1

Pre-Unit Assessment

LESSON 1.2

Can You See in the Dark?

LESSON 1.3

Light-Source Hunt

LESSON 1.4

Making Sense of Light Sources and Brightness

LESSON 1.5

Light Makes Surfaces Look Bright

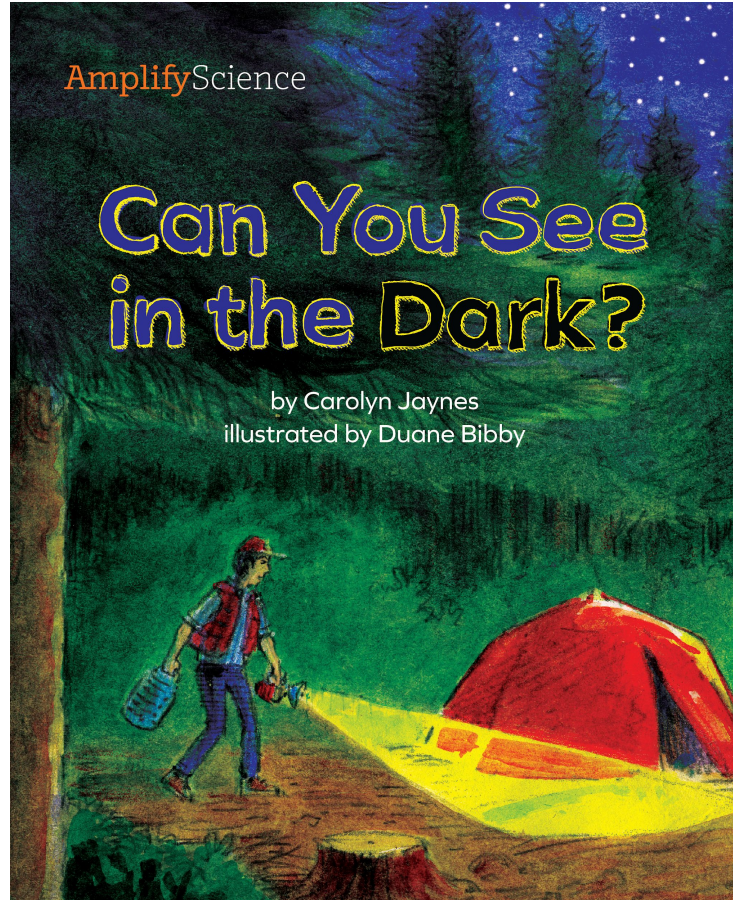
## Try to Make It Very Dark

1.  
Cup your hands over your eyes.
2.  
Try to look at something on your table, like a crayon.









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.

# Light and Sound

## Lesson 1.3

- Conducting a Light-source hunt
- Debriefing a Light-source Hunt
- Looking at pictures of Light Sources (Assessment, Modeling Light Sources)

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Read more >

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LESSON 1.2

Can You See in the Dark?

LESSON 1.3

Light-Source Hunt

LESSON 1.4

Making Sense of Light Sources and Brightness

LESSON 1.5

Light Makes Surfaces Look Bright

# Light-Source Hunt

1.  
I'll lead you around the school. We'll stop in different places to **make observations of light sources**.
2.  
You'll **record your observations** in your notebook.
3.  
We will also **look for bright surfaces**.





Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Our Light Source Hunt**

Directions:

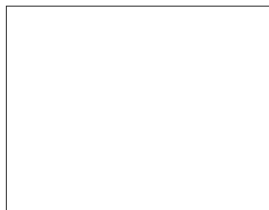
1. In each box, draw a light source you observe.
2. On the line below each box, label the light source.



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



Take turns **sharing** the light sources you observed and how your drawings help you remember.

Now, I will show you some **pictures of light sources**.

For each picture, we'll discuss **what** we can see, **why** we can see it, and **where** the light is coming from that lets us see it.



# Light and Sound

## Lesson 1.4

- Writing about Light-source observations
- Re-read *Can you See in the Dark?*
- Introducing cause and effect (**Assessment, Cause and Effect Table**)

22 Lessons

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Read more >

Chapters

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

LESSON 1.1

Pre-Unit Assessment

LESSON 1.2

Can You See in the Dark?

LESSON 1.3

Light-Source Hunt

LESSON 1.4

Making Sense of Light Sources and Brightness

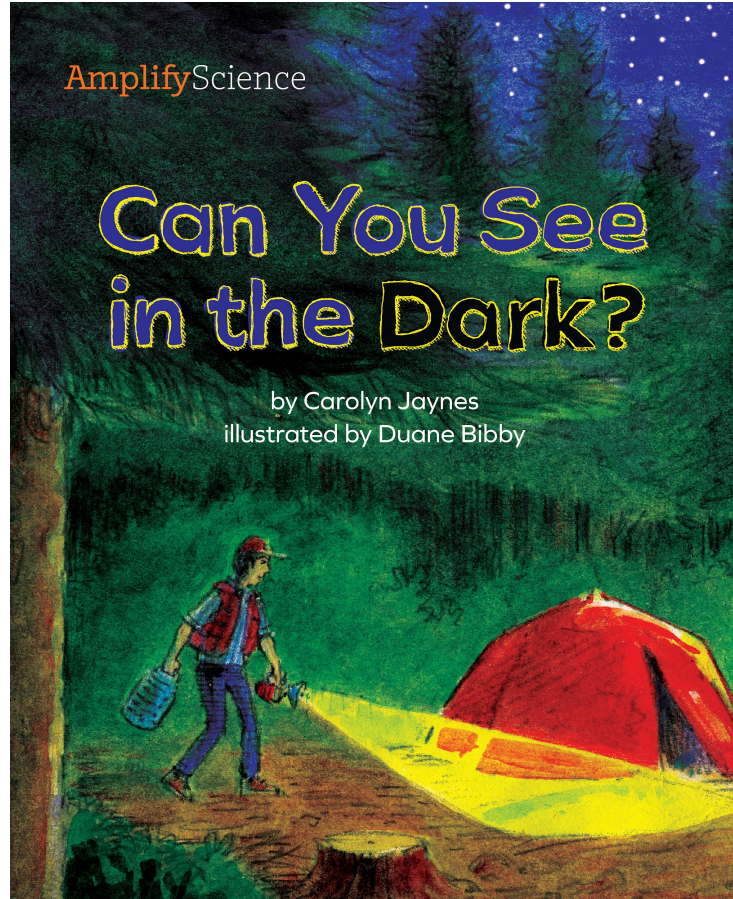
LESSON 1.5

Light Makes Surfaces Look Bright

## Light Sources

**Engineers** write **notes** to help **remember** new ideas. Notes can help them make a solution to a problem later on.

Today, we will write notes about a **light source**.




We found many **light sources** at school. There are many other light sources in this book.

Today, you'll work with a **partner** to **find light sources** in this book.

There is a pattern. Something happens with light, so a surface looks bright.

This is something scientists and engineers think about—**cause and effect**.

It means that one thing makes something else happen.

Cause	Effect
I kicked the ball.	It rolled across the playground.
I bit the apple.	My loose tooth came out.
	

We can use this chart to list more examples of cause and effect.



What are some everyday examples of **cause and effect** like the ones we talked about?





# Light and Sound

## Model Lesson Lesson 1.5

- Investigate how to make surfaces look bright
- Diagram light making a surface bright

22 Lessons

Light and Sound

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Read more >

Chapters

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

LESSON 1.1  
Pre-Unit Assessment

LESSON 1.2  
Can You See in the Dark?

LESSON 1.3  
Light-Source Hunt

LESSON 1.4  
Making Sense of Light Sources and Brightness

LESSON 1.5  
Light Makes Surfaces Look Bright

# The Lesson Brief and Classroom Slides

## Lesson 1.5: Light Makes Surfaces Look Bright

Printable Lesson Guide

WRITING  
Programming Light on a  
Surface

3

WRITING  
Explaining Bright and Dark  
Surfaces

RESET LESSON

- Overview
- Differentiation
- Materials & Preparation
- Standards
- Vocabulary

### Overview

Students work in pairs with flashlights to explore how to make surfaces around the classroom look brighter. Students complete a series of diagrams in their notebooks to model what makes a surface look bright or dark. The teacher introduces students to two new Explanation Language Frames to help explain what makes surfaces look bright or dark. These language frames form the basis of a class Shared Writing activity. Included in this lesson is the first Critical Juncture Assessment of the unit, which is an opportunity to assess students' understanding of light making surfaces look bright. The purpose of this lesson is to help students explain what causes a surface to look bright or dark.

**Unit Design Problem:** We want to make light and dark scenery for a puppet theater.

**Chapter-level Anchor Phenomenon:** Puppet show scenes have brighter and darker areas.

**Investigative Phenomenon:** Students point illuminated flashlights at surfaces.

### Digital Resources

- Classroom Slides 1.5 | PowerPoint
- Classroom Slides 1.5 | Google Slides
- What We Know About Light Chart: Completed
- Explanation Language Frames: Lesson 1.5
- Shared Writing
- What Engineers Do chart: Completed
- Chapter 1: Clipboard Assessment Tool
- Light and Sound Investigation Notebook, page 6
- Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds

# Overview

## Purpose

## Learning Objectives

### Overview

Differentiation

Materials &  
Preparation

Standards

Vocabulary

### Overview

Students work in pairs with flashlights to explore how to make surfaces around the classroom look brighter. Students complete a series of diagrams in their notebooks to model what makes a surface look bright or dark. The teacher introduces students to two new Explanation Language Frames to help explain what makes surfaces look bright or dark. These language frames form the basis of a class Shared Writing activity. Included in this lesson is the first Critical Juncture Assessment of the unit, which is an opportunity to assess students' understanding of light making surfaces look bright. The purpose of this lesson is to help students explain what causes a surface to look bright or dark.

**Unit Design Problem:** We want to make light and dark scenery for a puppet theater.

**Chapter-level Anchor Phenomenon:** Puppet show scenes have brighter and darker areas.

**Investigative Phenomenon:** Students point illuminated flashlights at surfaces.

#### Students learn:

- When light from a source gets to a surface, the surface looks bright.

### Digital Resources

 Classroom Slides 1.5 | PowerPoint


 Classroom Slides 1.5 | Google Slides


 What We Know About Light Chart: Completed


 Explanation Language Frames: Lesson 1.5

 Shared Writing

 What Engineers Do chart: Completed

 Chapter 1: Clipboard Assessment Tool

 Light and Sound Investigation Notebook, page 6

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

# Overview

## Timing and Pacing

### Lesson at a Glance

#### 1: Exploring How to Make Surfaces Bright (15 min.)

Students investigate how to make classroom surfaces bright by using a flashlight. This provides students with a firsthand opportunity to explore the effect of a light source on a surface. Included in this activity is the first Critical Juncture Assessment, which provides an opportunity to assess students' explorations.

#### 2: Diagramming Light on a Surface (15 min.)

Creating diagrams of how bright and dark surfaces are made helps students model their thinking about the relationship between a light source and a surface.

#### 3: Explaining Bright and Dark Surfaces (15 min.)

Students use the evidence they have gathered throughout the chapter, along with the Explanation Language Frames, to construct a written explanation of why surfaces look bright or dark. This activity includes an opportunity to lead students in a self-assessment of their developing understanding.

Day 1

Day 2

# Materials and Preparation

Overview  
Differentiation  
**Materials & Preparation**  
Standards  
Vocabulary

## Materials & Preparation

### Materials

#### Classroom Wall

- 1 vocabulary card: *surface*
- What We Know About Light chart
- What Engineers Do chart
- Puppet Scene Design Goals chart

#### For the Class

- Explanation Language Frame Cards: Set 1 ("bright" card only)
- Explanation Language Frame Cards: Set 2 (3 cards/set)
- batteries
- 5 sentence strips\*
- 1 sheet of chart paper\*
- marker\*
- masking tape\*
- pocket chart (or whiteboard)\*

#### For Each Pair of Students

- 1 flashlight, small

#### For Each Student

- 1 black crayon
- 1 silver crayon
- *Light and Sound* Investigation Notebook (page 6)

\*teacher provided

### Preparation

#### Before the Day of the Lesson

1. **Gather the following item for the classroom wall:**

- vocabulary card: *surface*

2. **Locate (in your *Light and Sound* kit) the following materials:**

- Explanation Language Frame Cards: Set 1 ("bright" card only)
- Explanation Language Frame Cards: Set 2 (3 cards/set)



# Light and Sound

## Classroom Wall

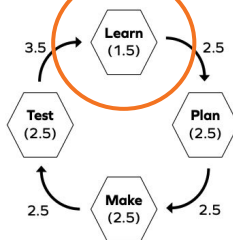
- 1 vocabulary card: **surface**
- What We Know About Light chart
- What Engineers Do chart
- Puppet Scene Design Goals chart

## For the Class

### What Engineers Do (1.2)

Find out about a problem. (1.2)

Design a solution (2.5)



Share to communicate and explain your ideas. (1.5)

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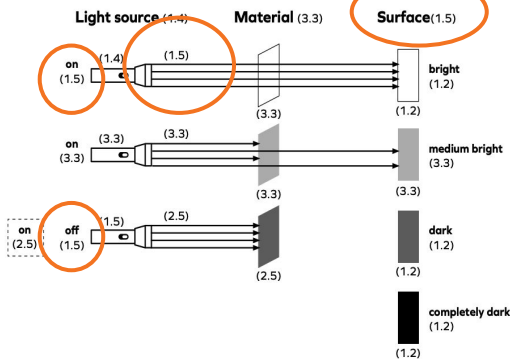
4. Prepare Explanation Language Frames. Using one or two sentence strips for each language frame, write:

- "Light from the \_\_\_\_\_"
- "Light from the \_\_\_\_\_"

When light from a source gets to a surface, the surface looks bright.

5. Arrange the Explanation Language Frames and cards in a

## What We Know About Light



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## Digital Resources

Point  
e Slides

What We Know About Light Chart: Completed

Explanation Language Frames: Lesson 1.5

Shared Writing

What Engineers Do chart: Completed

Chapter 1: Clipboard Assessment Tool

Light and Sound Investigation Notebook, page 6

Eliciting and Leveraging Students' Prior

Investigation Question: What makes something look bright or dark?

## Immediately Before the Lesson

1. Write the Investigation Question on the board. If the Investigation Question from Lesson 1.2 was erased, rewrite "What makes something look bright or dark?" You will revise this question in Activity 1.

Refer to the completed charts you printed out previously. (If you didn't print them out, you can find the PDF files in Digital Resources.)

- What Engineers Do. You will add to the chart in Activity 3 of this lesson.
- What We Know About Light. You will add to this chart with students in Activity 2.

# Light and Sound

## Classroom Wall (*before Lesson 1.5*)

### 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?"*

**Investigation Question:** *"Where does the light come from that makes surfaces look bright or dark?"*

### Key Concepts

*"Light makes things look bright."*

*"You need some light to see.:"*

*"All light comes from a source."*

Vocabulary

engineer

source

observe

### What Engineers Do (1.2)

Find out about a problem. (1.2)

### What We Know About Light

Light source (1.4)



bright (1.2)

dark (1.2)

completely dark (1.2)

cause (1.4)

effect (1.4)



# Differentiation

Overview

**Differentiation**

Materials &  
Preparation

Standards

Vocabulary

## Specific Differentiation Strategies for English Learners

**Bilingual Spanish glossary.** Having access to translations and definitions of new science terms in Spanish is helpful for English learners for whom Spanish is their primary language. In this lesson, the key vocabulary word *surface* is introduced. Have students turn to pages 28–29, Glossary, in the *Light and Sound Investigation* Notebook to see the Spanish translation and definition for *surface* and point out that *surface* sounds similar to the Spanish *superficie*. Encourage students to refer to this glossary as needed throughout the unit.

**Vocabulary scaffold.** You may wish to provide additional practice for English learners to use the word *surface* in context after introducing the word through the vocabulary routine. If students are reluctant to say the word, you might invite them to point to different surfaces. Ensuring that students understand what a surface is will help them be successful during the diagramming and Shared Writing activities.

**Promoting inclusion in discussions.** Participating in discussions is critical for English learners to develop science knowledge and the language of science. Some English learners may be hesitant to contribute to whole-class or small-group discussions because they lack experience or confidence in participating in small or large group discussions. However, they have a lot to say. There are several steps you can take to support English learners to fully engage in

A hand holding a flashlight, shining a beam of light onto a surface. The flashlight is green and yellow, and the beam of light is bright yellow. The background is dark.

**Grade 1 | Light and Sound**

# **Lesson 1.5: Light Makes Surfaces Look Bright**

## Activity 1

# Exploring How to Make Surfaces Bright



Investigation Question:

What makes something look bright or dark?

We have some of the ideas we need to make **scenes** for the puppet-theater company.

We still need to figure out how they can project the scene onto any wall they choose.

We need to figure out how to make a **specific surface look bright**.

# Vocabulary



**surface**

the outside part of something

# Investigation Question:

What makes **a surface** look bright or dark?



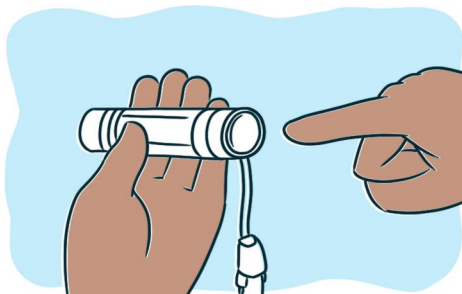
We will use these light sources to explore making surfaces look brighter.



What are some **surfaces** around the classroom?



## Making Surfaces Bright



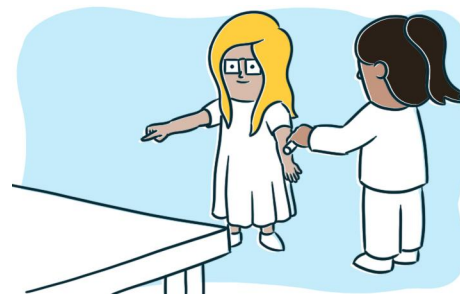
1.

**Turn the flashlight on.**  
Press the button.



2.

Choose **one surface** at a time, and **make it bright**.



3.

**Take turns.** Pick a different surface each time.

**Only Point Your Flashlight at Surfaces. Do Not Point Them At Each Other. The Flashlight Is Not a Toy.**





What did you do to make  
surfaces **look brighter?**  
Why did it work?

## Activity 2

# Diagramming Light on a Surface

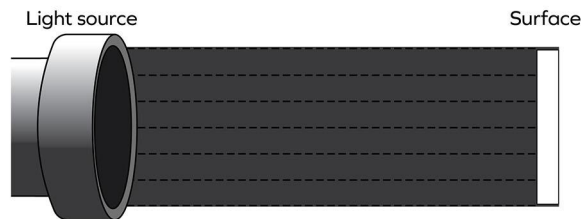
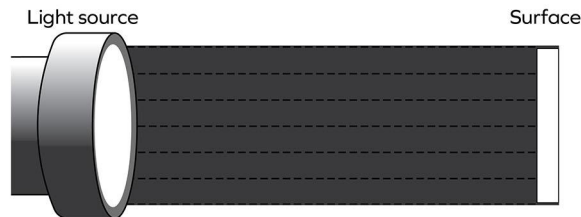


Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Diagramming Light on a Surface**

Directions:

1. Complete the first diagram to show a bright surface.
2. Complete the second diagram to show a dark surface.



We will work on these two diagrams on page 6 in our notebooks.

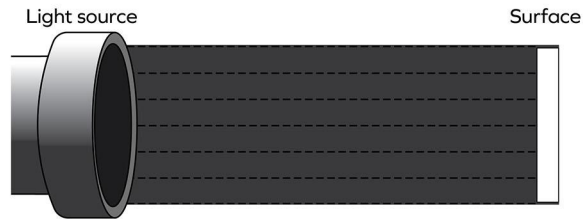
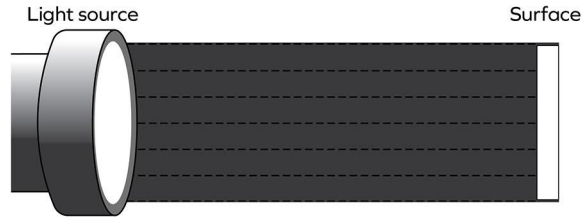
Scientists and engineers make **diagrams** to show their ideas. A diagram is an illustration that shows how something works.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Diagramming Light on a Surface**

Directions:

1. Complete the first diagram to show a bright surface.
2. Complete the second diagram to show a dark surface.



We can use the top diagram to show what makes a **surface** look **bright**.

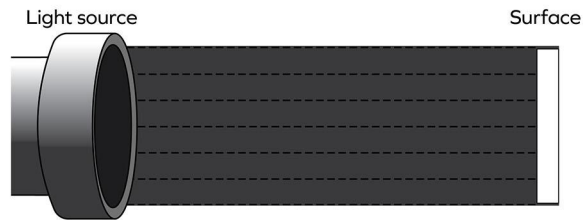
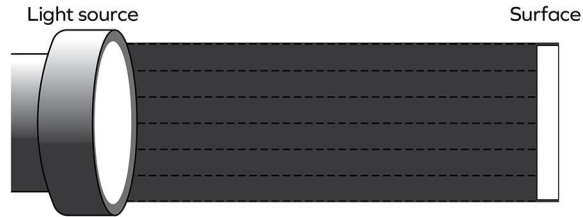
I will show you how. Let's start by thinking about the surface.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Diagramming Light on a Surface**

Directions:

1. Complete the first diagram to show a bright surface.
2. Complete the second diagram to show a dark surface.



Leaving the surface **white** shows it is **bright**. The flashlight is white, which shows it is **on**.

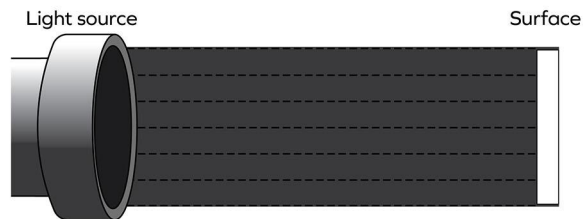
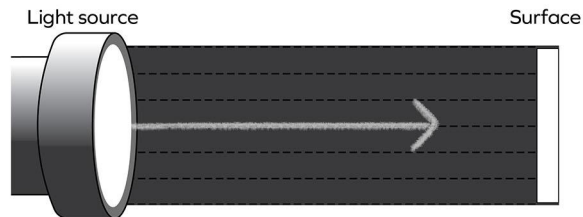
Let's think about how to show what makes the surface bright.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Diagramming Light on a Surface**

Directions:

1. Complete the first diagram to show a bright surface.
2. Complete the second diagram to show a dark surface.



Real light doesn't look like arrows, but we can use arrows to show light.



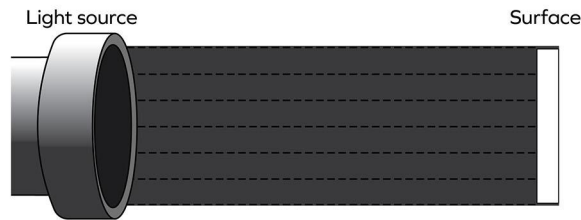
Does this **arrow** show light starting at the source and getting all the way to the surface?

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Diagramming Light on a Surface**

Directions:

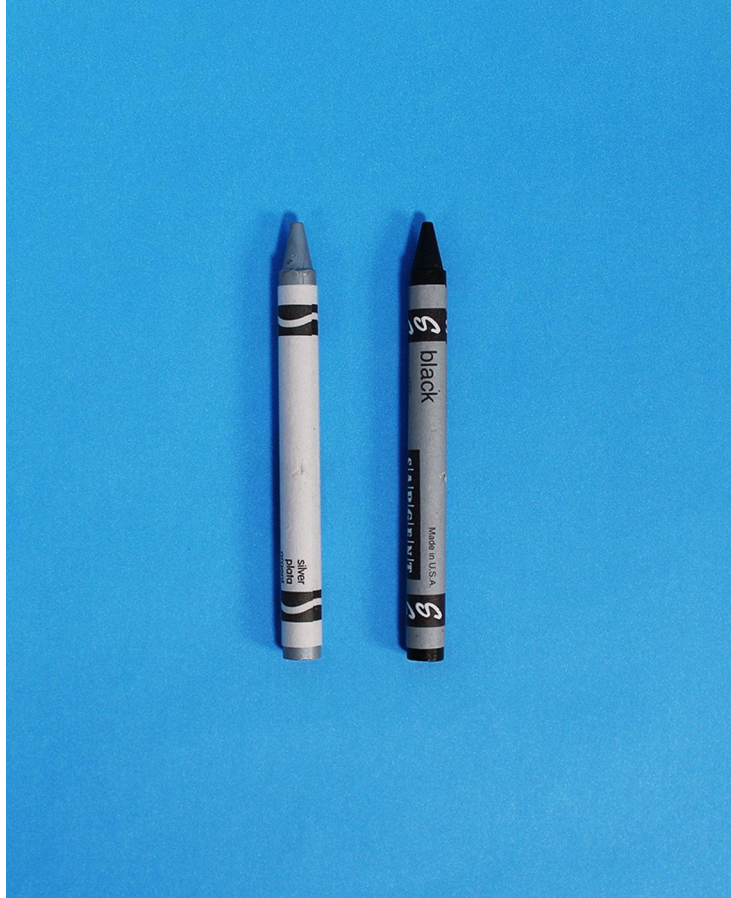
1. Complete the first diagram to show a bright surface.
2. Complete the second diagram to show a dark surface.



The light starts at the **source**, and the light goes all the way over to the **surface**.

**Long arrows** show what makes the surface look bright.





You will use a **silver and black crayon** to draw on this notebook page.

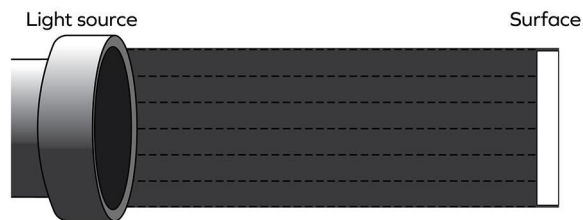
I will tell you when to use them.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Diagramming Light on a Surface**

Directions:

1. Complete the first diagram to show a bright surface.
2. Complete the second diagram to show a dark surface.



Turn to page 6 in your notebooks.

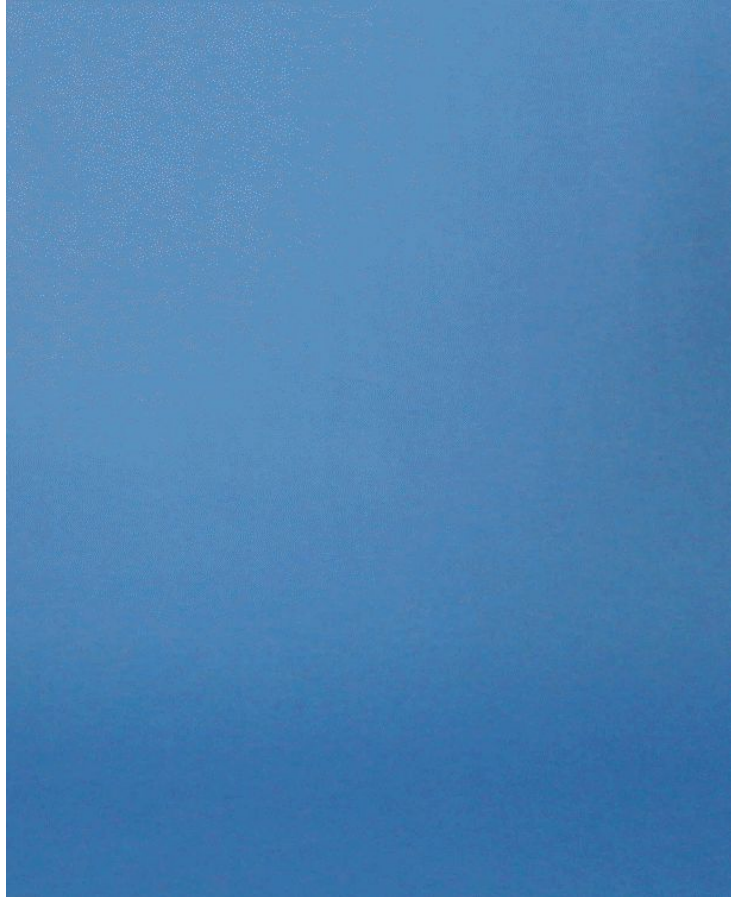


Use the silver crayon to  
complete the top  
diagram.

We didn't just observe bright surfaces. We also observed dark surfaces.



How did we make a surface look **dark**?



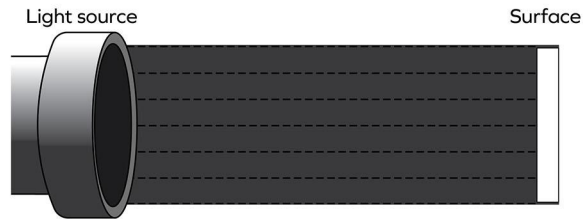
Just as we can make a surface look bright, we can also make a surface look dark.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Diagramming Light on a Surface**

Directions:

1. Complete the first diagram to show a bright surface.
2. Complete the second diagram to show a dark surface.



We can use the bottom diagram to show what makes a surface look **dark**.

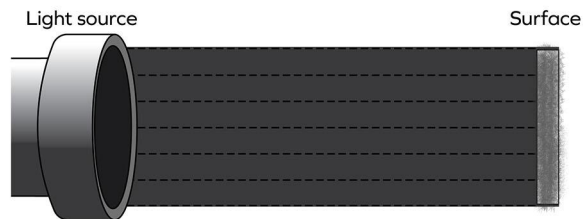
I will show you how. Let's start by thinking about the surface.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Diagramming Light on a Surface**

Directions:

1. Complete the first diagram to show a bright surface.
2. Complete the second diagram to show a dark surface.



Coloring the surface black shows it is dark. The flashlight is dark, so it's off.



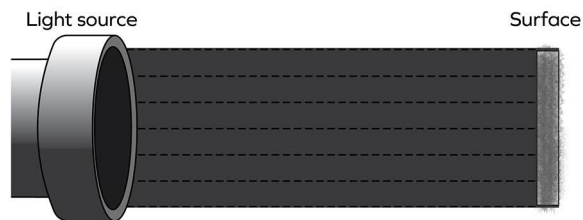
Should we create the diagram **with arrows** or **without arrows**?

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Diagramming Light on a Surface

Directions:

1. Complete the first diagram to show a bright surface.
2. Complete the second diagram to show a dark surface.



Use the black crayon to  
complete the bottom  
diagram.

### What We Know About Light

Light source



Surface



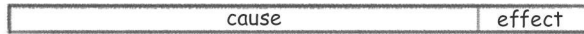
bright



dark



completely  
dark

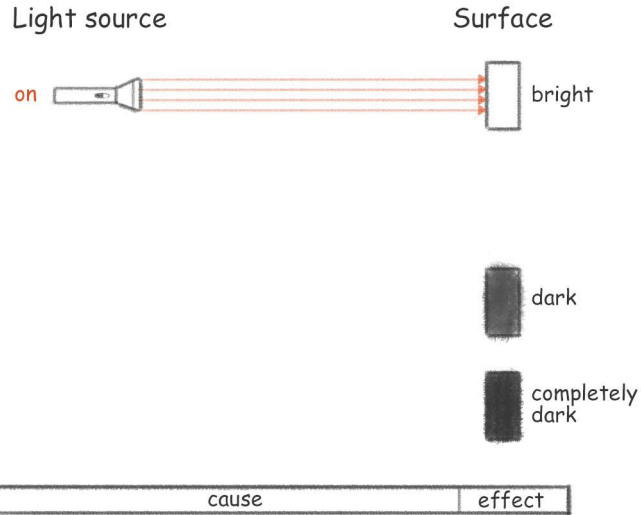


Let's **add to our chart** to show our new ideas.

We learned the **surface** is the outside part of something and that a surface can look **bright** or **dark**.



### What We Know About Light



We learned that **light** from a light source has to **get to the surface** to make the surface look **bright**.

### What We Know About Light

Light source

Surface

on



off



dark



completely  
dark

cause

effect

We know that if there is **not a light source** shining on a surface, the surface looks **dark**.

Now the chart shows the same ideas as the diagrams we made.

## Activity 3

# Explaining Bright and Dark Surfaces



### What Engineers Do

Find out about a problem.



We have been working as light and sound engineers. We have **learned** a lot about light!

Let's add that idea to our What Engineers Do **chart**.

### What Engineers Do

Find out about a problem.

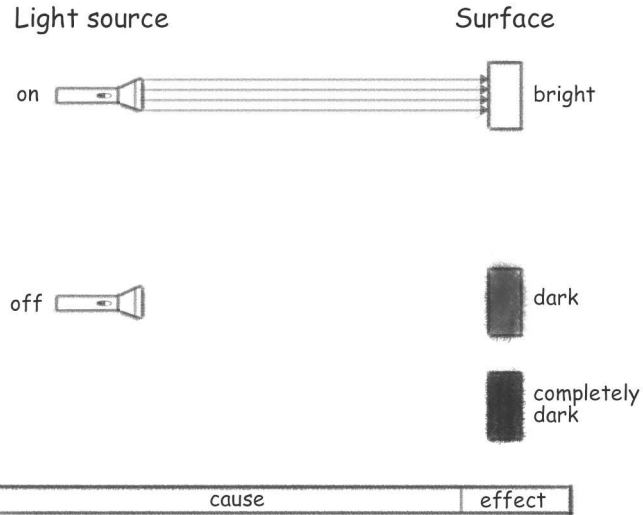


Share to communicate and explain your ideas.

Engineers explain their observations and ideas by making **diagrams**.

They also talk and write about why things happen to explain and **communicate** their ideas.

### What We Know About Light



We will work together to **write an explanation** about the diagrams we drew on the **What We Know About Light** chart.

Light from the \_\_\_\_\_ gets to the \_\_\_\_\_,

so it looks \_\_\_\_\_.

Let's start by explaining  
the **bright surface**.

We'll use these words to  
**explain** why the surface  
in the diagram is bright.



### Shared Writing

Why does the wall look bright?



Now, I will write our ideas  
on the chart.

Remember, we can  
**connect** what happens  
using the word **so**.



Light from the \_\_\_\_\_ gets to the \_\_\_\_\_,

so it looks \_\_\_\_\_.

Light from the \_\_\_\_\_ does not get to

the \_\_\_\_\_, so it looks \_\_\_\_\_.

Now, let's explain the  
**dark surface.**

We can use these words  
to **explain** why the  
surface in the diagram  
looks dark.



### Shared Writing

Why does the wall look bright?

Why does the wall look dark?



First, we explained why the wall looks **bright**.

Now, let's work together to explain why the wall looks **dark** when the **flashlight is off**.

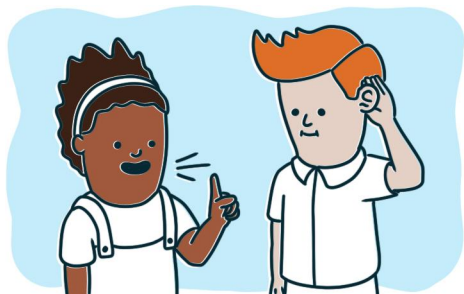
We have been using the word **so** to show how two things—a **cause** and an **effect**—are **connected**. The cause is what makes the other thing happen, and the effect is what happens.

Let's think about **cause and effect** in the **explanations** we wrote.

We have **learned** many new things. We learned that when scientists learn something new, their **science knowledge changes**.

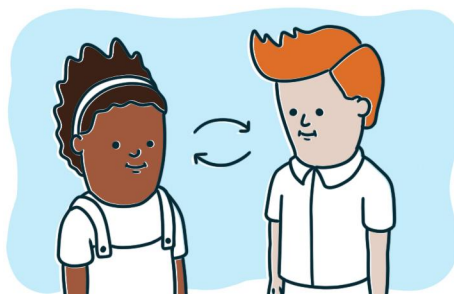
We have figured out **new ideas about light**—where it comes from and what it does.

## Self-Assessment: Share a new idea you learned.



1.

**Partner A** shares.  
**Partner B** listens.



2.

**Partners** switch.



3.

**Partner B** shares.  
**Partner A** listens.

## Key Concept

When light from a source gets to a surface,  
the surface looks bright.

### Puppet Scene Design Goals

- The scene should have a bright area.



- The scene should have a dark area.



- The scene should have a medium bright area, between bright and dark.



We have learned what we need to do in order to make a surface look bright.



What **questions** do we need to ask and try to answer next?

# End of Lesson



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HALL OF SCIENCE  
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# Light and Sound

## Classroom Wall (After Lesson 1.5)

### 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?"

**Investigation Question:** "Where does the light come from that makes surfaces look bright or dark?"

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

### Key Concepts

*"Light makes things look bright."*

*"You need some light to see."*

*"All light comes from a source."*

*"When light from a source gets to a surface, the surface looks bright."*

### What Engineers Do (1.2)

Find out about a problem. (1.2)



Share to communicate and explain your ideas. (1.5)

### What We Know About Light

Light source (1.4)



Surface (1.5)



off (1.5)



dark (1.2)



completely dark (1.2)



cause (1.4)

effect (1.4)

### Vocabulary

engineer

source

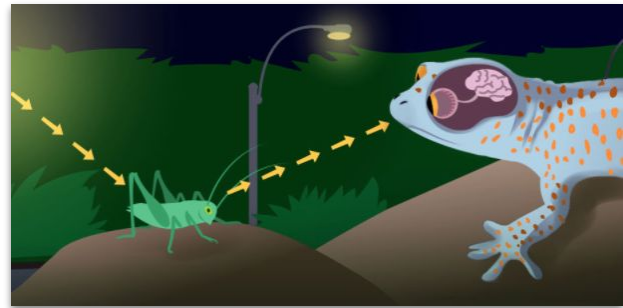
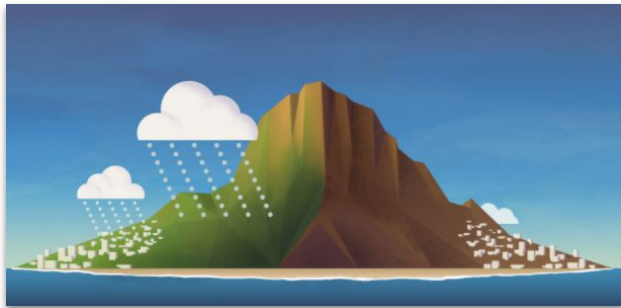
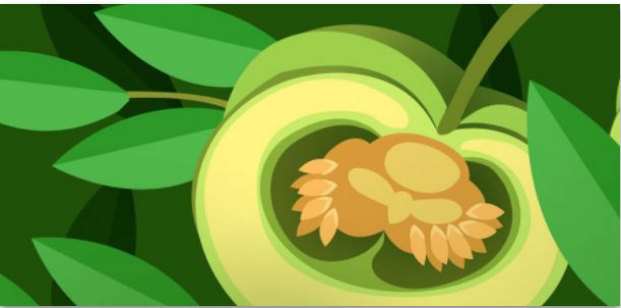
observe

surface

# Questions?



# Break



# Plan for the day

- Introduction & Framing
- Assessment System
- Progress Build
- Assessments
- Model Lesson
- **Planning**
- Closing

# Work Time - Planning (Assessments)

- Navigate to a lesson that you'll be teaching in the upcoming week that has a formative assessment opportunity (you might want to refer to the **Embedded Formative Assessment or Assessment System** documents on the Unit Landing Page)

**What do your assessment types look like? What preparations do they require?**

The screenshot shows the interface for Lesson 1.5, titled "Light Makes Surfaces Look Bright". At the top, there is a "Printable Lesson Guide" button. Below the title, a progress bar indicates the current position, with a large number "3" in the center. The interface is divided into three main sections: Overview, Materials & Preparation, and Standards. The Overview section contains a detailed description of the lesson, stating that students work in pairs with flashlights to explore how to make surfaces around the classroom look brighter. It mentions that students complete a series of diagrams in their notebooks to model what makes a surface look bright or dark. The teacher introduces students to two new Explanation Language Frames to help explain what makes surfaces look bright or dark. These language frames form the basis of a class Shared Writing activity. Included in this lesson is the first Critical Juncture Assessment of the unit, which is an opportunity to assess students' understanding of light making surfaces look bright. The purpose of this lesson is to help students explain what causes a surface to look bright or dark.

The Materials & Preparation section lists the following resources:

- Classroom Slides 1.5 | PowerPoint
- Classroom Slides 1.5 | Google Slides
- What We Know About Light Chart: Completed
- Explanation Language Frames: Lesson 1.5
- Shared Writing
- What Engineers Do chart: Completed
- Chapter 1: Clipboard Assessment Tool
- Light and Sound Investigation Notebook, page 6
- Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds

The Standards section is currently empty.

# Work Time - Planning (Assessments)

- Download and review the classroom slides
- Read the unit overview
- Read the Materials and Prep
- Read the differentiation
- Prepare any data collectors or assessment materials needed.

The screenshot shows a digital planning interface for Lesson 1.5. At the top, the title "Lesson 1.5: Light Makes Surfaces Look Bright" is displayed next to a "Printable Lesson Guide" button. Below the title is a progress bar with three segments: "Writing: Programming Light on a Puppet" (1), "3" (2), and "Writing: Explaining Bright and Dark Surfaces" (3). The main content area is divided into three columns. The left column contains a sidebar with links: "Overview", "Differentiation", "Materials & Preparation", "Standards", and "Vocabulary". The middle column, titled "Overview", contains a paragraph about students working in pairs with flashlights to explore light and dark surfaces, followed by a "Unit Design Problem" and two "Phenomenon" statements. The right column, titled "Digital Resources", lists various resources including classroom slides, language frames, shared writing, and assessment tools.

**Lesson 1.5:**  
Light Makes Surfaces Look Bright

[Printable Lesson Guide](#)

Writing: Programming Light on a Puppet 3 Writing: Explaining Bright and Dark Surfaces

[RESET LESSON](#)

**Overview**

Students work in pairs with flashlights to explore how to make surfaces around the classroom look brighter. Students complete a series of diagrams in their notebooks to model what makes a surface look bright or dark. The teacher introduces students to two new Explanation Language Frames to help explain what makes surfaces look bright or dark. These language frames form the basis of a class Shared Writing activity. Included in this lesson is the first Critical Juncture Assessment of the unit, which is an opportunity to assess students' understanding of light making surfaces look bright. The purpose of this lesson is to help students explain what causes a surface to look bright or dark.

**Unit Design Problem:** We want to make light and dark scenery for a puppet theater.

**Chapter-level Anchor Phenomenon:** Puppet show scenes have brighter and darker areas.

**Investigative Phenomenon:** Students point illuminated flashlights at surfaces.

**Digital Resources**

- [Classroom Slides 1.5 | PowerPoint](#)
- [Classroom Slides 1.5 | Google Slides](#)
- [What We Know About Light Chart: Completed](#)
- [Explanation Language Frames: Lesson 1.5](#)
- [Shared Writing](#)
- [What Engineers Do chart: Completed](#)
- [Chapter 1: Clipboard Assessment Tool](#)
- [Light and Sound Investigation Notebook, page 6](#)
- [Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds](#)

# Work Time - Planning (Assessments)

Be prepared to share out the:

- Lesson you're planning for and the type of assessment
- "Look Fors" or "Assess for Understanding"
- "Now What" or "Tailor Instruction"
- Personal observations, reflections, or practices that you plan to use

## Amplify Science sample assessment data collection tool

Grade : \_\_\_\_\_  
Lesson \_\_\_\_\_

Look for 1:

Look for 2:

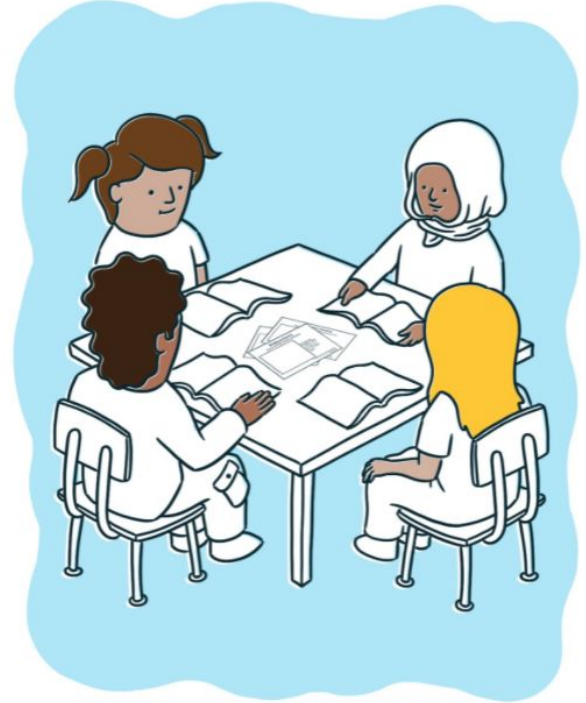
[illegible]

# Share Out

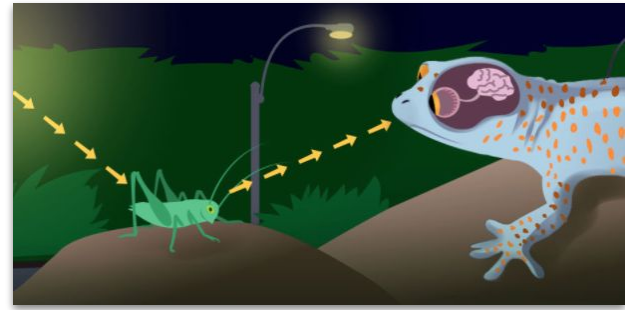
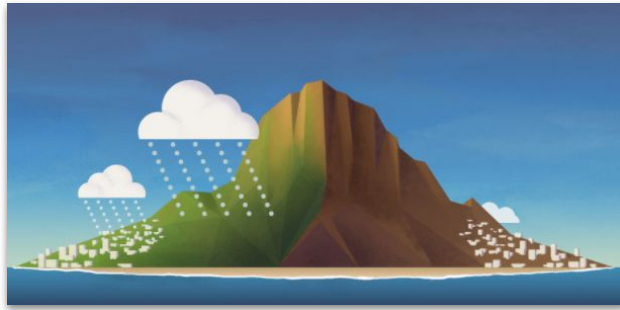
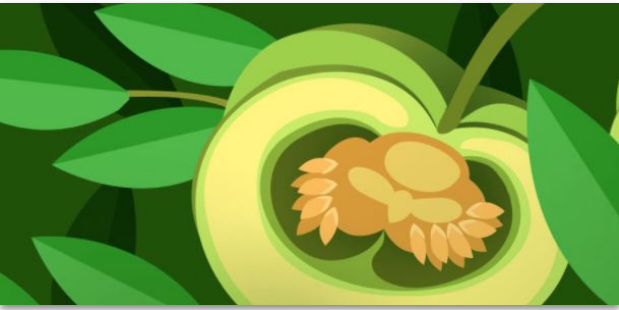
## Work Time - Planning (Assessments)

Be prepared to share out the:

- Lesson you're planning for and the type of assessment
- "Look Fors" or "Assess for Understanding"
- "Now What" or "Tailor Instruction"
- Personal observations, reflections, or practices that you plan to use





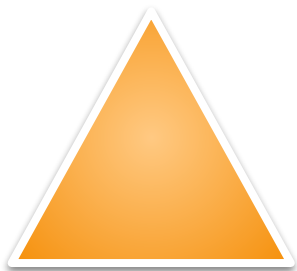


# Plan for the day

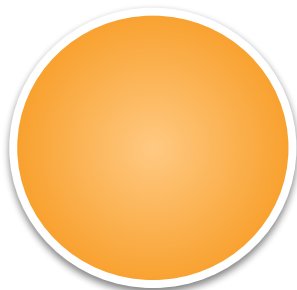
- Introduction & Framing
- Assessment System
- Progress Build
- Assessments
- Model Lesson
- Planning
- Closing

# Closing reflection

Based on our work today, share:



1-3 big points you're taking away from this session



A question or topic that's still circling in your mind



Something that's "squaring" (resonating) with you from this session

# Overarching goals

- ☑ Describe the structure and purpose of the Amplify Science Assessment System
- ☑ Plan for the strategic use of assessment resources to analyze and respond to student work

Let's connect  
this goal to  
our students



# Navigating to the Student Apps page

Amplify. CURRICULUM CLASSWORK REPORTING

Science California > **Light and Sound**

22 Lessons

## Light and Sound

Printable Teacher Guide

Unit Overview

Chapters

Printable Resources

Planning for the Unit

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

Teacher References

- Lesson Overview
- Compilation
- Standards and Goals
- 3-D Statements
- Assessment System
- Embedded Formative Assessments
- Books in This Unit
- Opportunities for Unit Extensions

### Unit Overview

#### What's in This Unit?

The creation of special effects in theater produces the illusion of buildings, trees, the ocean, or other weather. Sound is also used to make a scene feel sound of crickets singing to indicate a warm sun. Sound is also used to make a scene feel sound of crickets singing to indicate a warm sun. Sound is also used to make a scene feel sound of crickets singing to indicate a warm sun.

[Read more](#)

### Chapters

#### Chapter 1: How do we make bright light?

LESSON 1.1 Pre-Unit Assessment

LESSON 1.2 Can You See It?

Rock Transformations Sim

Scale Tool

Sound Waves Sim

Thermal Energy Sim

Traits and Reproduction Sim

Vision and Light Sim

Weather Patterns Sim

### Tools

Admin Portal

Classwork

**Elementary Student Apps**

Library

My Account

Science Reporting

### Other Resources

Benchmark Assessments

CA Science Program Guide

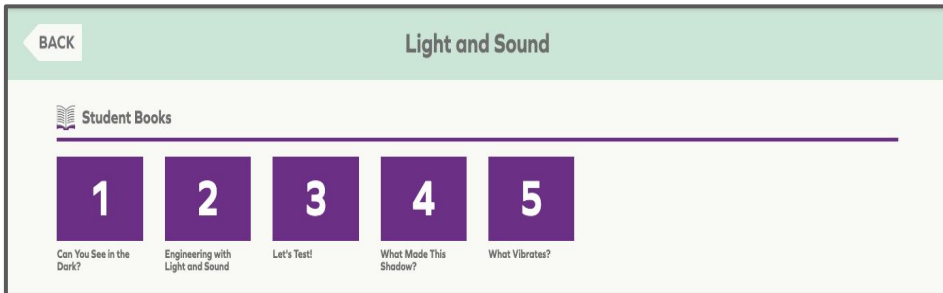
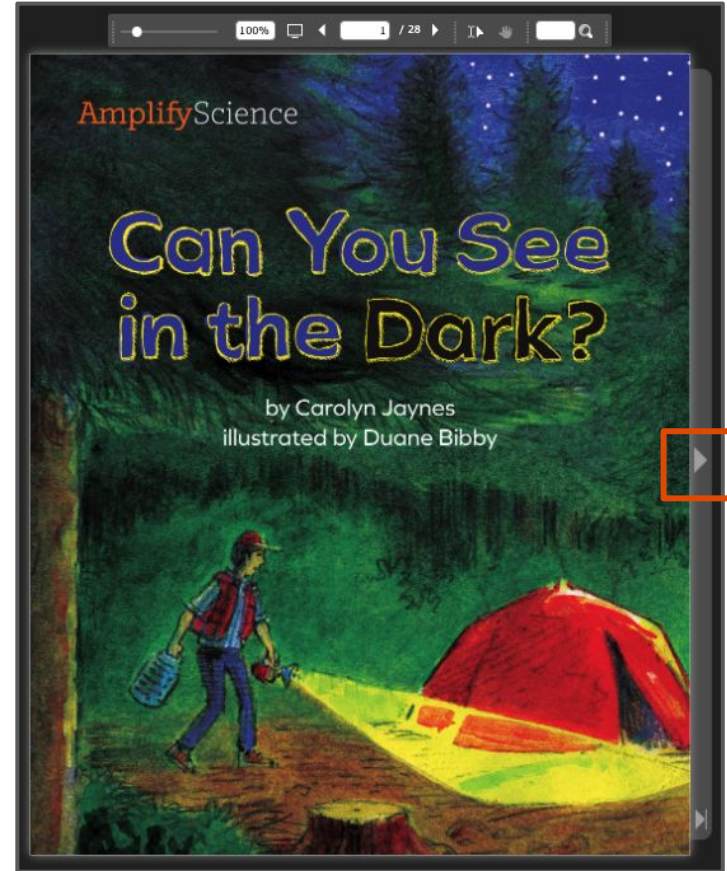
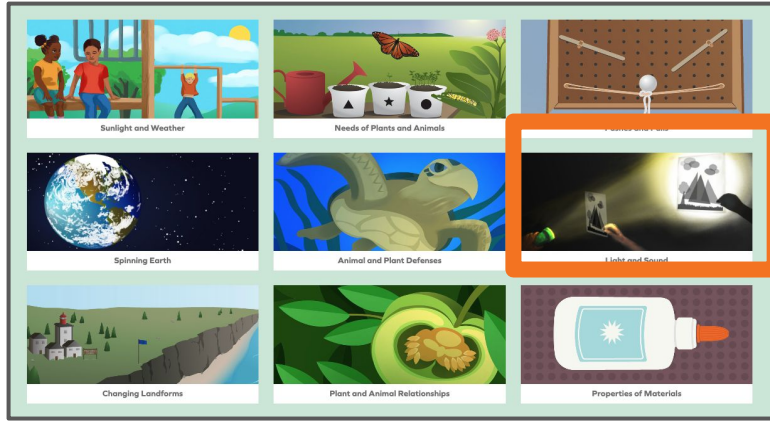
CA Science Program Guide

Help

Science Program Guide

Science Program Hub

# 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.

This screenshot shows the Amplify Science Program Hub for the 'Light and Sound' unit. The top navigation bar includes 'Amplify', 'CURRICULUM', 'CLASSWORK', 'REPORTING', and 'PROGRAMS & APPS' (highlighted with an orange circle). The main header shows 'Science California' and 'Light and Sound' (highlighted with a red box). Below the header, it indicates '22 Lessons' and 'Light and Sound' with a 'Printable Teacher Guide' button. The left sidebar lists various resources: Unit Overview, Chapters, Printable Resources, Planning for the Unit (with a sub-menu including Unit Map, Progress Build, Getting Ready to Teach, Materials and Preparation, Science Background, and Standards at a Glance), and Teacher References (including Lesson Overview, Compilation, Standards and Goals, 3-D Statements, Assessment System, Embedded Formative Assessments, Books in This Unit, and Opportunities for Unit Extensions). The main content area is titled 'Unit Overview' and 'What's in This Unit?', featuring a paragraph about the unit's focus on special effects in theater and a 'Read more' link. Below this, the 'Chapters' section lists 'Chapter 1: How do we make brighter or darker areas?' with three lesson thumbnails: 'LESSON 1.1 Pre-Unit Assessment', 'LESSON 1.2 Can You See in the Dark?', and 'LESSON 1.3 Light-Source Hunt'. An orange circle highlights the 'PROGRAMS & APPS' link in the top navigation bar.

This screenshot shows the Amplify Science Program Hub for the '4th Grade Science Eng/Esp' program. The top navigation bar includes 'Amplify', 'CURRICULUM', 'CLASSWORK', 'REPORTING', and 'PROGRAMS & APPS' (highlighted with an orange circle). The main header shows 'Science' and 'Units'. Below the header, it indicates 'Program: 4th Grade Science Eng/Esp' and 'AmplifyScience'. The 'Units' section displays four unit cards: 'Energy Conversions' (22 Lessons), 'Vision and Light' (22 Lessons), 'Energy Conversions' (22 Lessons), and 'Vision and Light' (22 Lessons). An orange circle highlights the 'PROGRAMS & APPS' link in the top navigation bar.

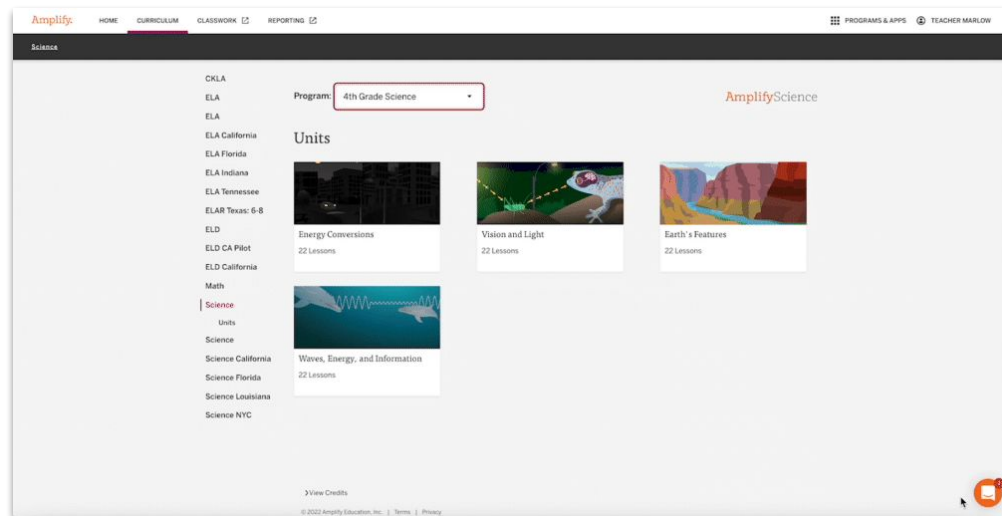
This screenshot shows the Amplify Science Program Hub welcome page. The top navigation bar includes 'Amplify', 'CURRICULUM', 'CLASSWORK', 'REPORTING', and 'PROGRAMS & APPS' (highlighted with an orange circle). The main header shows 'Welcome Science Educators!'. Below the header, it includes a paragraph about the hub's purpose and a 'Click here!' link. The page is divided into four sections: 'On-demand resources' (Learn more about how to use On-demand resources.), 'Professional Learning Resources' (Let's get started!), 'Additional Unit Materials' (Additional resources to complement the units you're teaching.), and 'PD Library' (Video collection to learn about your Amplify program). An orange circle highlights the 'PROGRAMS & APPS' link in the top navigation bar.

# Additional resources and ongoing support

Seek information specific to enrollment and rosters, technical support, materials and kits, and teaching support.



Amplify Chat





# K-2<sup>ND</sup> GRADE AMPLIFY SCIENCE PARTICIPANT FEEDBACK LINK



**<http://bitly.ws/xoMz>**