

## Unit 4: Communicating with Sound and Light WEEK 4 At a Glance

Weekly Question: <b>What is light?</b>			
<p><b>Texts</b></p>    <p><b>Mentor Texts</b></p>   	<p><b>Vocabulary and Language</b></p> <p>Day 1: Introduce Weekly Words: beam, shadow, location            Day 2: Introduce Weekly Words: source, block, determine            Day 3: Possessive Nouns            Day 4: Possessive Nouns            Day 5: Carousel Brainstorm</p> <hr/> <p><b>Text Talk</b></p> <p>Days 1-2: <i>Sending Messages with Light and Sound</i>            Day 3: <i>All About Light</i>            Day 4: <i>Oscar and the Moth</i>, Read 1            Day 5: <i>Oscar and the Moth</i>, Read 2</p> <hr/> <p><b>Stations</b></p> <p>Shared Reading: “Golden Sun”            Independent and Partner Reading            Listening &amp; Speaking: Talk, Draw, Talk; Listen &amp; Respond (<i>Sending Messages with Light and Sound</i>, <i>All About Light</i>)            Science Literacy: What is light?            Vocabulary: Draw for Meaning            Word Work: align with phonics program</p> <hr/> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><b>Science and Engineering</b></p> <p>Lesson 1: Light is Energy                Lesson 2: Lights Interactions with Materials</p> </td> <td style="width: 50%; vertical-align: top;"> <p><b>Studios</b></p> <p>Children experiment with light and shadow by making and using shadow puppets. They identify and describe qualities of light and tell and act out new stories.</p> </td> </tr> </table> <hr/> <p><b>Writing: Explanation</b></p> <p>Day 1: Pre-Assessment            Day 2: Deconstruction: Explanation Purpose            Day 3: Deconstruction: Explanation Stages            Day 4: Individual Construction: Explanation Steps            Day 5: Individual Construction: Explanation Steps</p>	<p><b>Science and Engineering</b></p> <p>Lesson 1: Light is Energy                Lesson 2: Lights Interactions with Materials</p>	<p><b>Studios</b></p> <p>Children experiment with light and shadow by making and using shadow puppets. They identify and describe qualities of light and tell and act out new stories.</p>
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Unit 4: Communicating with Sound and Light

WEEK 4 Days 1 & 2

**Vocabulary & Language**  
Weekly Words

<b>Weekly Question</b>	What is light?				
<b>Language Objectives</b>	I can talk with my classmates about words. (SL.1.1) I can connect words to my own real-life experiences. (L.1.5.c)				
<b>Vocabulary</b>	<table border="1"><tr><td><b>Day 1</b></td></tr><tr><td><b>beam:</b> a ray of light <b>shadow:</b> the dark area that is produced when an object comes between a light source and a surface <b>location:</b> place</td></tr><tr><td><b>Day 2</b></td></tr><tr><td><b>source:</b> a place, person, or thing from which light or sound comes <b>block:</b> to get in the way, to prevent something from moving or getting through <b>determine:</b> to discover or confirm something, usually with research</td></tr></table>	<b>Day 1</b>	<b>beam:</b> a ray of light <b>shadow:</b> the dark area that is produced when an object comes between a light source and a surface <b>location:</b> place	<b>Day 2</b>	<b>source:</b> a place, person, or thing from which light or sound comes <b>block:</b> to get in the way, to prevent something from moving or getting through <b>determine:</b> to discover or confirm something, usually with research
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<b>Materials and Preparation</b>	<ul style="list-style-type: none"><li>• Week 4 Weekly Words cards</li><li>• chart paper</li></ul> Create the week's Weekly Words chart by writing out the Weekly Words and their definitions. Add icons, sketches, or images as needed.				
<b>Opening Day 1</b>	<i>Today we'll start a new list of Weekly Words. These words come from the books that we read and the big ideas from our study, Communicating with Sound and Light. Today's words are related to light: <b>beam, shadow, and location.</b></i>				

Day 2	<i>Let's continue learning our words for this week. Today's words are <b>source</b>, <b>block</b>, and <b>determine</b>.</i>
<p><b>Discussion</b> Day 1</p>	<p>Follow the steps of the Weekly Words routine. Refer to the chart and explain each step as needed. Hold up the appropriate word card as each word is taught.</p> <hr/> <p><b>beam</b> Elaboration: <i>At performances on stage, people use stage lights with strong beams to create effects. A flashlight creates a much smaller beam.</i></p> <p>Think, Pair, Share prompt: <i>Where have you seen strong beams of light, either produced in nature or produced by people?</i></p> <hr/> <p><b>shadow</b> Elaboration: <i>At sunset shadows are very long. At other times, like when the sun is directly above us in the middle of the day, shadows are much shorter.</i></p> <p>Think, Pair, Share prompt: <i>Have you played with your shadow? What have you noticed?</i></p> <hr/> <p><b>location</b> Elaboration: <i>When you are trying to get to a certain place, you might look for that location in Google maps to see where it is exactly and for directions for how to get there.</i></p> <p>Think, Pair, Share prompt: <i>Can you describe the location of your favorite park or playground? Where is it? How would you get there?</i></p>
Day 2	<p><b>source</b> Elaboration: <i>Some sources of light are natural, like the sun, fire, and even fireflies—they produce light with a chemical in their abdomens. Other sources of light are made by humans. We call those artificial lights; lamps are one source of artificial light.</i></p> <p>Think, Pair, Share prompt: <i>Tell each other examples of both natural and artificial sources of light.</i></p>

	<p><b>block</b> Elaboration: <i>Some people have a hard time sleeping when light enters their bedrooms. One solution to this problem is to block the light with heavy curtains.</i></p> <p>Think, Pair, Share prompt: <i>Can you think of other situations in which people might block light?</i></p> <hr/> <p><b>determine</b> Elaboration: <i>We can determine where a light or sound comes from—its source—by looking or listening. We can also determine the direction of the wind.</i></p> <p>Think, Pair, Share prompt: <i>Look at the image. Can you determine which direction the wind is coming from? What makes you say so?</i></p>
<b>Closing</b>	<i>The words we’re studying will help us to think and talk about light.</i>
<b>Standards</b>	<p><b>SL.1.1.</b> Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.</p> <p><b>L.5.1.c</b> Identify real-life connections between words and their use (e.g., note places at home that are cozy).</p>
<b>Ongoing assessment</b>	<p>How do children interact with new and familiar words? How do children respond when they discover an error in their understanding or use of a word? How flexible are they when confronted with new definitions? How do children talk with peers about new words—do they use gestures, substitute familiar words, dig for descriptions, tell stories?</p> <p>Make notes about children’s familiarity with various kinds of words and the connections they make to specific words. Use this information to plan for embedded opportunities for teaching and reinforcing words.</p> <p>Use of a strategy such as pulling equity (name) sticks supports the participation of all children. Even with this kind of strategy, some children will benefit from extra turns for verbal participation.</p> <p>Maintaining a class vocabulary list will help track children’s vocabulary growth over time.</p>

**Notes**

A large empty rectangular box with a black border, intended for taking notes.



beam

<http://willowtreedanceandtheatrearts.com/news-2/dancer-spotlight/>

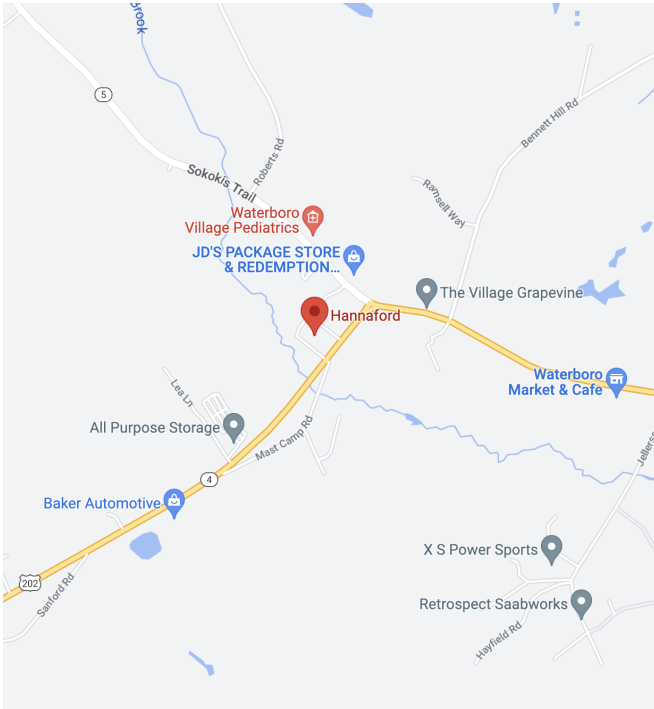


shadow

<https://www.flickr.com/photos/javicalvo/10396384086>

Weekly Words U4 W4

Focus on First/ 1st Grade for ME | Boston Public Schools Department of Early Childhood P-2/  
Maine Department of Education



location

Google maps



source

<https://global.rakuten.com/en/store/dotsnext/item/dn918/>,<https://www.mnn.com/earth-matters/animals/stories/why-do-fireflies-glow>,<https://www.bbc.co.uk/programmes/b048nlfb>,<https://time.com/5373180/fire-challenge/>

Weekly Words U4 W4

Focus on First/ 1st Grade for ME | Boston Public Schools Department of Early Childhood P-2/

Maine Department of Education



block

<https://sleepcavern.com/how-to-block-light-leaking-from-the-top-and-sides-of-your-curtains/>



determine

<https://www.stockfreeimages.com/5477794/Small-flag-flapping-on-wind.html>

Weekly Words U4 W4

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Maine Department of Education



## Unit 4: Communicating with Sound and Light

### WEEK 4 Day 3

## Vocabulary & Language

### Possessive Nouns

<b>Weekly Question</b>	What is light?
<b>Language Objective</b>	I can identify possessive nouns. (L.1.1.a)
<b>Vocabulary</b>	<b>noun:</b> a word that names a person, place, thing, or idea <b>possess:</b> to own or have
<b>Materials and Preparation</b>	<ul style="list-style-type: none"><li>• Possessive Nouns slides</li></ul>
<b>Opening</b>	<i>Last unit we learned about possessive pronouns. Today we are going to learn about possessive nouns.</i>
<b>Discussion</b>	<i>This is a page from Max Found Two Sticks by Brian Pinkney. This page has two possessive nouns. Listen as I read part of the page.</i>
slide 2	Read the large text on the slide.
slide 3	<i>On this page it says “Max’s mother.” Adding an apostrophe plus s to the word “Max” forms a possessive noun. It shows the relationship between Max and his mother—she is his mother.</i>
slide 4	<i>Listen to this part of the page again. See if you can see and hear another possessive noun.</i> Reread the large text on the slide. Harvest the children’s ideas.
slide 5	<i>This phrase says “Grandpa’s cleaning bucket.” “Grandpa’s” is a possessive noun. Adding apostrophe s to Grandpa makes it possessive, to show that the cleaning bucket belongs to him. Possessives show the relationship between people and things.</i>
slide 6	<i>Now I am going to read a page from this week’s book, All About</i>

	<p><i>Light by Lisa Trumbauer. As I read, listen and look for the possessive noun.</i></p> <p>Read the page and harvest children’s ideas.</p>
slide 7	<p><i>This phrase says “The sun’s light.” The author added apostrophe s to the word sun to make it possessive. It shows that the light comes from the sun.</i></p>
<b>Closing</b>	<p><i>Today we learned about forming possessive nouns by adding apostrophe s. Tomorrow you will write your own sentences using possessive nouns.</i></p>
<b>Standards</b>	<p><b>L.1.1.a</b> Use common, proper, and possessive nouns.</p>
<b>Ongoing assessment</b>	<p>Reflect on the lesson.</p> <p>Do children accurately identify the possessive nouns in the sentences?</p> <p>What do children understand about the relationship between the possessive noun and the other person/object?</p> <p>What do children understand about possessive nouns?</p> <p>What is still confusing?</p>

**Notes**

Unit 4: Communicating with Sound and Light

WEEK 4 Day 4

**Vocabulary & Language**  
Possessive Nouns

<b>Weekly Question</b>	What is light?
<b>Language Objective</b>	I can use possessive nouns in sentences. (L.1.1.a)
<b>Vocabulary</b>	<b>noun:</b> a word that names a person, place, thing, or idea <b>possess:</b> to own or have
<b>Materials and Preparation</b>	<ul style="list-style-type: none"><li>• Possessive Nouns slides, from Day 3</li><li>• paper and pencil, one for each child</li></ul>
<b>Opening</b>	<i>Yesterday you learned about possessive nouns. Possessive nouns show a relationship between people and things. They can be formed by adding apostrophes to a word.</i>
<b>Discussion</b>	Review the instructions on the slide. Review slides 2-7 as necessary.
slide 7	Bring the class back together. Invite a child to share one of their sentences. Ask the child to identify the possessive noun and describe the relationship between the possessive noun and the noun it possesses. Repeat the process with another child, as time allows.
<b>Closing</b>	<i>Today you wrote sentences using possessive nouns.</i>
<b>Standards</b>	<b>L.1.1.a</b> Use common, proper, and possessive nouns.
<b>Ongoing assessment</b>	Review children’s sentences.

	<p>Do children accurately use possessive nouns to indicate a relationship between the possessive noun and another person or object? Do they add 's to a noun to form the possessive?</p>
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**Notes**

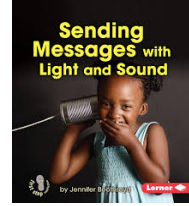
WEEK 4 Day 5

**Vocabulary & Language**  
Carousel Brainstorm

<b>Weekly Question</b>	What is light?
<b>Language Objective</b>	I can talk with my classmates about important vocabulary from our unit texts and big ideas. (SL.1.1)
<b>Vocabulary</b>	<b>beam:</b> a ray of light <b>shadow:</b> the dark area behind an object that blocks light <b>location:</b> a place <b>source:</b> a place, person, or thing from which light or sound comes <b>block:</b> to place something in front of a light source so that light cannot get through <b>determine:</b> to discover or confirm something after doing research
<b>Materials and Preparation</b>	<ul style="list-style-type: none"><li>● chart paper, 4 pieces, with one of the Weekly Words in the center of each, set out around the classroom</li><li>● markers, one for each child</li><li>● timer or stopwatch</li></ul>
<b>Opening</b>	<i>This week as we move through the Carousel Brainstorm, we'll think about our Weekly Words and how they are related to light.</i>
<b>Key Activity</b>	Show the vocabulary cards and review definitions for all of the Weekly Words, highlighting those selected for the Carousel Brainstorm.  Talk briefly about some possibilities for recording understanding about one of the words.  Direct each group to a particular paper and then begin the timer.  Circulate as children work, noting their use and representation of each word.

<b>Closing</b>	In the whole group, share the work from the papers, highlighting different ways of demonstrating word knowledge.
<b>Standards</b>	<b>SL.1.1.</b> Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
<b>Ongoing assessment</b>	<p>As children work, circulate and take notes on the Carousel Brainstorm Assessment Tool to record children’s understanding, misconception, and use of vocabulary words. Use these to plan for reteaching and reinforcement.</p> <p>Listen to children’s conversations as they circulate.  How do children participate?</p> <p>Review each sheet of chart paper.  Do children’s drawings and writing reflect an understanding of the vocabulary words?</p>

**Notes**



WEEK 4 Days 1-2

**Text Talk**  
***Sending Messages with Light and Sound***  
 \*Spread this lesson out over the course of two days.

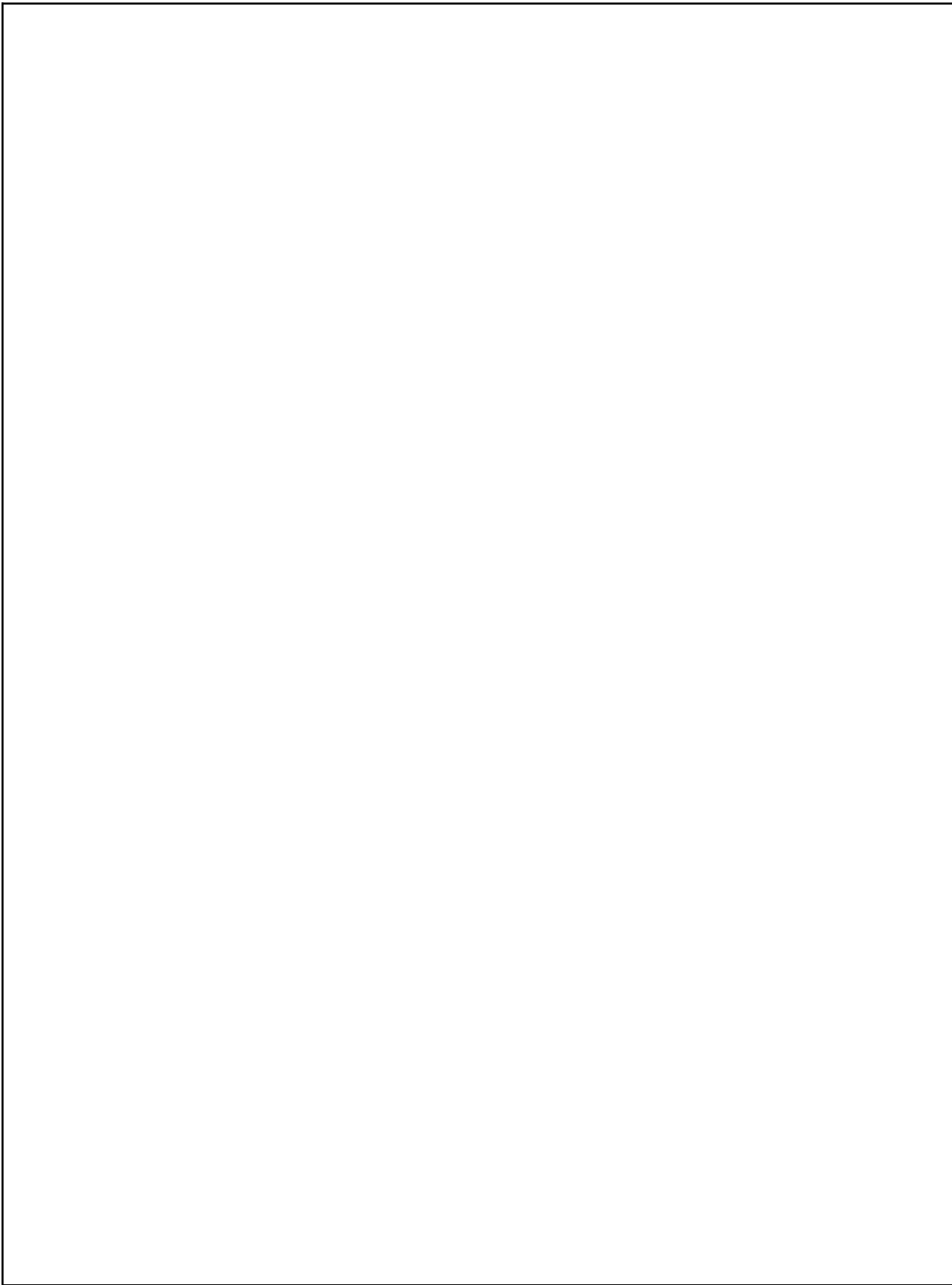
<b>Big Ideas</b>	<p>Light and sound travel.</p> <p>Humans and other animals communicate with light and sound.</p>
<b>Weekly Question</b>	What is light?
<b>Content Objectives</b>	<p>I can distinguish between information provided by photographs and by words in an informational text. (RI.1.6)</p> <p>With the support of a group, I can fluently read a text to gather information about light and sound. (R.12)</p>
<b>Language Objective</b>	With a group, I can discuss examples of and create a visual display about ways I use light. (SL.3.1.b, L.5.1.c)
<b>Vocabulary</b>	<p><b>message:</b> information sent from place to place</p> <p><b>distance:</b> an amount of space between two things or people</p> <p><b>warn:</b> to let someone know about possible danger</p>
<b>Materials and Preparation</b>	<p>Ahead of the lesson, group children into heterogeneous reading triads for the Triad Reading routine.</p> <ul style="list-style-type: none"> <li>● <i>Sending Messages with Light and Sound</i>, Jennifer Boothroyd</li> <li>● <i>Sending Messages with Light and Sound</i> copies, one for each group of three children</li> <li>● chart paper</li> <li>● markers, one for each child, different colors for each child in a triad</li> </ul> <p>On the whiteboard write:                  How are light and sound used to communicate messages?</p>

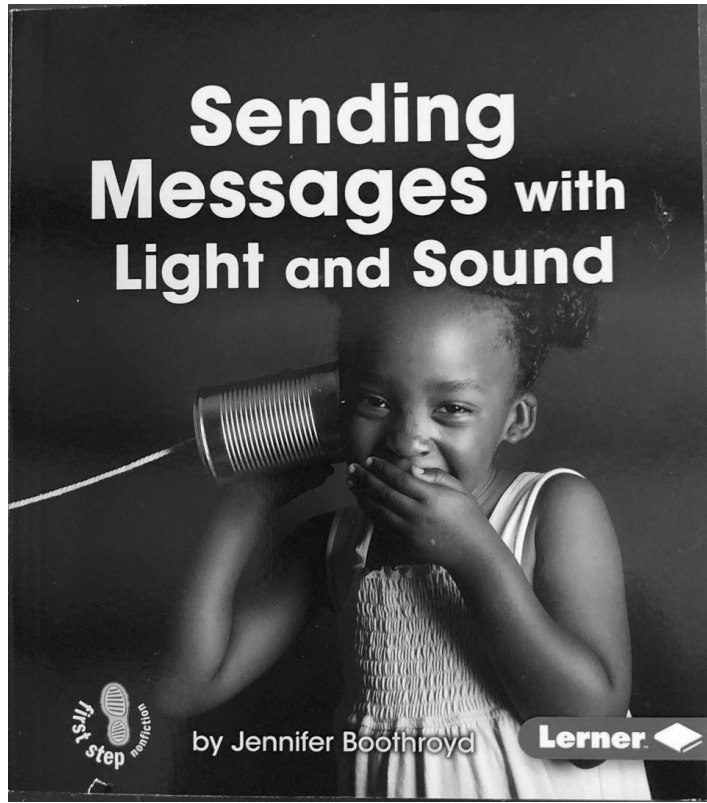
<p><b>Opening</b> 1 minute</p>	<p><i>This week we will learn about light!</i></p> <p>Set a purpose for reading.</p> <p><i>Last week we thought about how people and other animals communicate with sound. Today we'll read Sending Messages with Light and Sound by Jennifer Boothroyd to continue thinking about messages using sound and to begin learning about messages we send with light.</i></p> <p><i>The first time we read, you'll read the text yourselves, in your groups. The second time we'll read together and use the photographs to find even more information about light and sound.</i></p>
<p><b>Text and Discussion</b> 13 minutes</p> <p>Read 1</p>	<p>Move children to assigned small groups, and invite them to read the entire text together. As children read, circulate to support them.</p> <p>After children have time to read, refer them to the question on the whiteboard to discuss in their small groups.</p> <p><i>How are light and sound used to communicate messages?</i></p> <p>Listen to children's conversations. Consider understandings and misconceptions that have surfaced to inform the discussion during the whole group reading.</p>
<p>Read 2 page 4</p>	<p>Bring the children back to the whole group. Reread the text chorally, pausing as indicated.</p> <p><i>The photograph on page 4 gives us additional information. Where do you think this photograph was taken?</i></p> <p><i>How is light used to communicate a message in this photograph?</i></p>
<p>page 5</p>	<p><i>Look at the photograph. How does this tool change the sound of someone's voice?</i></p>
<p>page 8</p>	<p><i>This is called a lighthouse. A lighthouse guides ships.</i></p> <p>Read the rest of the text with minimal stopping.</p>
<p><b>Key Activity</b> 10 minutes</p>	<p><i>Over the last few weeks we learned about how humans and other animals use sound. To launch our study of light, you can work together to make a poster about the ways you use light!</i></p> <p>Describe the task. Each child will use a single color marker to contribute to a poster about how people use light. Send children to work in their same small groups. Children should write their names with their same color so that their individual contributions can be identified.</p>
<p><b>Closing</b></p>	<p>Invite groups to share their posters with the large group.</p>




6 minutes	<i>Tomorrow we will read another informational text that will teach us about what light is.</i>
<b>Weekly Question Chart</b> 1 minute	<p>Introduce the Weekly Question chart. <i>Our question this week is: What is light?</i></p> <p><i>You have identified that people use light to communicate messages. You also said that light helps people see. Let's write these ideas on the chart.</i></p> <p><i>We can add more to our chart during the week.</i></p>
<b>Standards</b>	<p><b>R.9.1.b</b> Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.</p> <p><b>R.12</b> Read with sufficient accuracy and fluency to support comprehension</p> <p><b>L.5.1.c</b> Identify real-life connections between words and their use (e.g., note places at home that are cozy).</p> <p><b>SL.3.1.b</b> Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.</p>
<b>Ongoing assessment</b>	<p>Listen to children's responses during the whole and small group conversations.</p> <p>What information do children gather from illustrations? What information do they gather from the text?</p> <p>Do children distinguish between information learned from text and from illustrations?</p> <p>Listen to children's choral reading.</p> <p>Do children read with sufficient accuracy and fluency to make sense of the text?</p> <p>Review the posters.</p> <p>What uses of light do children identify?</p> <p>What contributions does each child make?</p>

**Notes**





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## What Are Messages?



**Messages** give us **information**.

4



We send messages over a distance.

5



We learn from messages.

There are many ways to send messages.

6



Light and sound help us send messages.

7

Text Talk U4 W4 D1

**Sending Messages with Light**



Big lights can send messages.

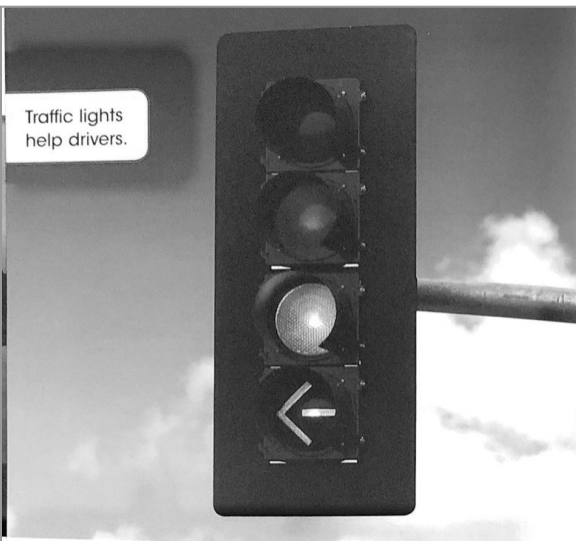
8



The elevator is going up.

So can small lights.

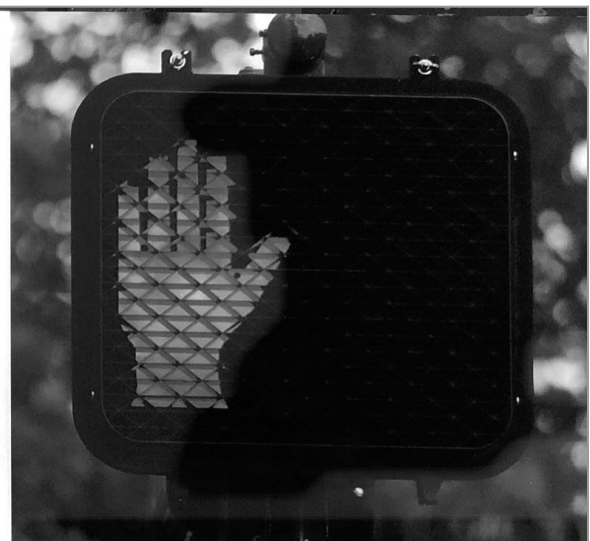
9



Traffic lights help drivers.

Lights can tell people where to go.

10



Lights can warn of danger.

11

Text Talk U4 W4 D1

**Sending Messages  
with Sound**



Loud sounds can send messages.

12



Quiet sounds send messages too.

13



A clock's ring is a message.

An **alarm clock** rings.  
It's time to get up!

14



Your words make a message.

We share news by talking.

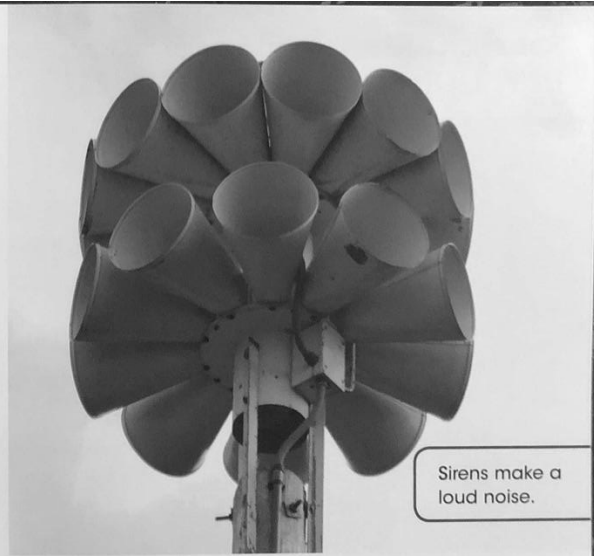
15

Text Talk U4 W4 D1



We listen to the radio. We hear voices from far away.

16



Sirens make a loud noise.

**Sirens** warn people of danger.

17



### Sending Messages with Light and Sound

Some messages use both light and sound.

18



These lights and sounds mean a train is coming.

A train crossing has ringing bells and flashing lights.

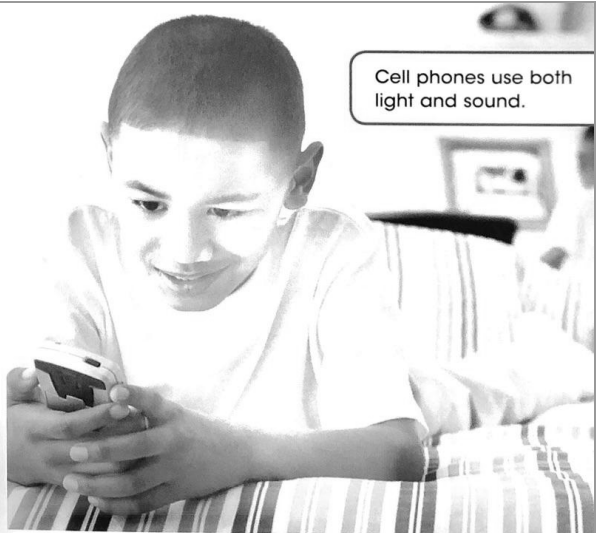
19

Text Talk U4 W4 D1



The lights and sounds on this fire truck tell people to move away.

Fire trucks have flashing lights. They have loud sirens too.



Cell phones use both light and sound.

People can hear and see messages on cell phones.



What messages can you send with light and sound?

## Glossary

**alarm clock** - a clock that can make noise at a set time

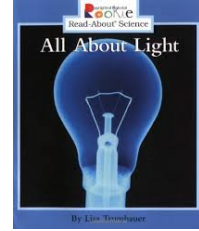
**information** - details about a person, place, thing, or event

**messages** - information sent from place to place

**sirens** - machines that make a very loud and often high-pitched sound



Unit 4: Communicating with Sound and Light



WEEK 4 Day 3

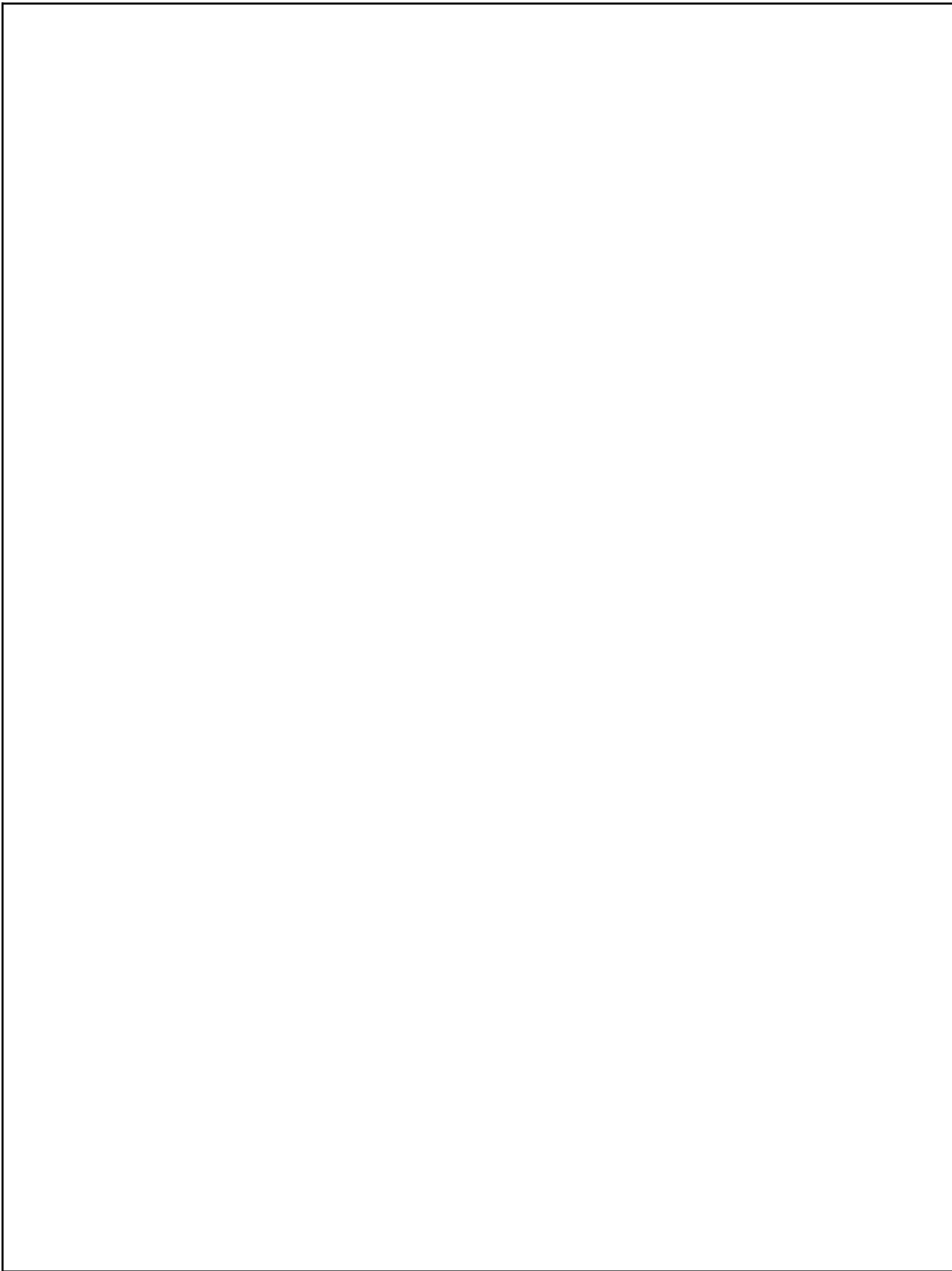
**Text Talk**  
***All About Light***

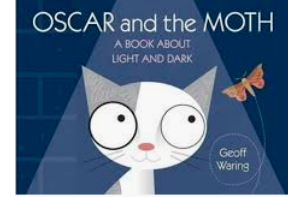
<b>Big Ideas</b>	<p>Light and sound travel.</p> <p>Humans and other animals communicate with light and sound.</p>
<b>Weekly Question</b>	What is light?
<b>Content Objectives</b>	<p>I can ask questions about key details in an informational text. (R.4.1.a)</p> <p>I retell key ideas about light from an informational text. (R.5.1.b)</p>
<b>Language Objective</b>	I can ask questions about light. (SL.1.1.c, L.1.1.i)
<b>Vocabulary</b>	<p><b>energy:</b> power</p> <p><b>electricity:</b> a type of energy caused by the flow of tiny particles called electrons</p> <p><b>beam:</b> a ray of light</p> <p><b>shadow:</b> the dark area that is produced when an object comes between a light source and a surface</p> <p><b>block:</b> to get in the way, to prevent something from moving or getting through</p>
<b>Materials and Preparation</b>	<ul style="list-style-type: none"> <li>● <i>All About Light</i>, Lisa Trumbauer</li> <li>● <i>All About Light</i> slides</li> <li>● chart paper</li> </ul> <p>At the top of the chart paper write the title, Questions about Light.</p> <p>On the whiteboard write:</p> <p>What did you learn about light?</p> <p>What are you wondering about light?</p>

<p><b>Opening</b> 1 minutes</p>	<p><i>Yesterday we began thinking about sending messages with light. Today we'll continue our study of light with an informational text titled All About Light by Lisa Trumbauer.</i></p> <p>Set a purpose for reading. <i>Today we'll read and then retell key ideas. We'll also record our questions about light. Remember, our weekly question is, What is light?</i></p>
<p><b>Text and Discussion</b> 16 minutes</p> <p>Slide 6, page 13</p>	<p>Project <i>All About Light</i> in slides so that all children can see the images and text.</p> <p><i>A <b>beam</b> is the light that radiates, or shines, from a light source.</i></p>
<p>Slide 7, pages 14 and 15</p>	<p><i>Turn and talk to your partner: What have we learned so far about how light moves?</i></p> <p>Encourage children to refer to the illustration on page 15.</p> <p><i>What are you wondering?</i> Record a few questions on the chart.</p>
<p>Page 19</p>	<p><i>How does the earth get light? What do we learn here?</i></p>
<p>page 25</p>	<p><i>What are you wondering about rainbows?</i> Record a few questions.</p>
<p>page 27</p>	<p><i>What does it mean that the light is blocked?</i></p> <p><i>Turn and talk: According to the text, how are shadows formed?</i> Encourage children to make connections between this text and the science investigation about shadows. Children will articulate still-evolving understandings; the exploration of shadows will continue.</p> <p><i>What questions do you have about shadows?</i> Record a few questions.</p>
<p><b>Key Discussion</b> 7 minutes</p>	<p>Think, Pair, Share.</p> <p>Prompt 1: <i>What did you learn from this text about light?</i></p> <p>Prompt 2: <i>What are you wondering about light?</i></p> <p>As children share their questions in the whole group, record them on the chart. Encourage children to ask questions that are relevant to or inspired by the key ideas of the text.</p>

<b>Closing</b> 1 minute	<i>These are interesting questions. Tomorrow we'll go back to our FOSS text, Sound and Light, to continue learning about light and shadows.</i>
<b>Standards</b>	<p><b>R.4.1.a</b> Ask and answer questions about who, what, when, where, and how.</p> <p><b>R.5.1.b</b> Retell key details of texts, including the main topic.</p> <p><b>SL.1.1.c</b> Ask questions to clear up any confusion about the topics and texts under discussion.</p> <p><b>L.1.1.i</b> Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to prompts.</p>
<b>Ongoing assessment</b>	<p>Listen to children's responses during whole group conversation and Think, Pair, Share.</p> <p>What key understandings about light do children express?</p> <p>Do children refer to the text to describe how light moves?</p> <p>Do children ask questions that are relevant to or inspired by the key ideas of the text?</p> <p>Do children use question words to produce simple and compound sentences?</p>

**Notes**





WEEK 4 Day 4

**Text Talk**  
***Oscar and the Moth***  
 Read 1 of 2

<b>Big Ideas</b>	<p>Light and sound travel.</p> <p>Materials interact with light in different ways.</p> <p>Humans and other animals communicate with light and sound.</p>
<b>Weekly Question</b>	What is light?
<b>Content Objectives</b>	I can use words and illustrations to retell the key ideas in an informational text. (R.5.1.a, R.11.1.c, R.11.1.d)
<b>Language Objective</b>	I can ask clarifying questions to my peers in a group discussion. (SL.2.1.b)
<b>Vocabulary</b>	<p><b>star:</b> a body of glowing light in the night sky</p> <p><b>firefly:</b> a type of flying beetle that glows</p> <p><b>dusk:</b> the time of evening when the sky grows dark</p> <p><b>signal:</b> a gesture, action, or sound that communicates information; a message</p> <p><b>dazzle:</b> to sparkle</p> <p><b>rim:</b> the upper or outer edge of an object, usually a circular object</p> <p><b>disturb:</b> to interrupt</p> <p><b>bait:</b> food used to entice fish or other animals</p> <p><b>lure:</b> to tempt a person or animal to do something or go somewhere</p> <p><b>shadow:</b> the dark area that is produced when an object comes between a light source and a surface</p>
<b>Materials and Preparation</b>	<ul style="list-style-type: none"> <li>● <i>Oscar and the Moth</i>, Geoff Waring</li> <li>● Questions about Light chart, from previous days</li> </ul>

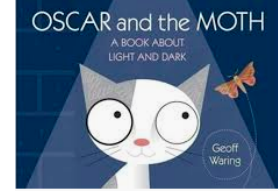
	<ul style="list-style-type: none"> <li>● Sentence Frames for Discussion</li> </ul> <p>On the whiteboard write: What do you think are the most important facts about light that Oscar learned?</p>
<p><b>Opening</b> 1 minutes</p>	<p>Refer to the Questions about Light chart.</p> <p><i>You've asked lots of questions this week about light. Today we'll read a narrative nonfiction text, Oscar and the Moth. Oscar also has lots of questions, and Moth provides him with lots of information.</i></p> <p><i>Have you ever seen a moth fly around a lamp at night? Moths are attracted to light—that must be why the author chose to use a moth to teach us about light!</i></p> <p>Set a purpose for reading.</p> <p><i>As we read, we'll gather information from both illustrations and words. After we read, we'll discuss what we think are the most important facts Oscar learns about light. You'll talk with each other using our Sentence Frames for Discussion about which facts you think are most important.</i></p>
<p><b>Text and Discussion</b> 17 minutes</p> <p>Page 8</p>	<p><i>How does the position of the earth in relation to the sun affect whether it is light or dark out? Remember to use the illustration and the words in the text to understand this important idea.</i></p>
<p>page 12</p>	<p><i>This week we've been thinking about the question, What is light? We're learning that light is both natural and made by humans. What natural light are we learning about?</i></p> <p><i>And what light is made by humans?</i></p>
<p>page 19</p>	<p>Turn and Talk.</p> <p><i>Using the words and illustration on this page, identify the kinds of natural and human-made lights Oscar sees.</i></p>
<p>pages 20-21</p>	<p>Read through the pages without stopping.</p> <p><i>There are so many ways that animals produce light naturally! We'll revisit this page tomorrow to read it closely.</i></p>
<p>page 25</p>	<p><i>Where is the light source, if Oscar's shadow is there on the wall? Think about what we learned from the FOSS text.</i></p> <p>Read to the end of the story.</p>

<p><b>Key Discussion and Activity</b> 6 minutes</p>	<p>Facilitate a discussion. Refer to the Sentence Frames to support exchange of ideas.</p> <p><i>Remember, in a group discussion you can add on, agree with, or disagree with your classmate’s ideas. Let’s also practice asking clarifying questions if you want to know more about a classmate’s thinking.</i></p> <p>Suggest a few question stems, such as “Why do you think ...?” and “Can you say more about...?”</p> <p><i>Here is the question we’ll discuss: What do you think are the most important facts about light that Oscar learned?</i></p>
<p><b>Closing</b> 1 minute</p>	<p><i>Tomorrow we’ll zoom in on one page to learn how animals produce their own light.</i></p>
<p><b>Standards</b></p>	<p><b>R.5.1.a</b> Retell texts, including details about who, what, when, where, and how; demonstrate an understanding of the theme.</p> <p><b>R.11.1.c</b> Use the illustrations and details in a text to describe its central idea.</p> <p><b>R.11.1.d</b> Compare and contrast two texts on the same topic.</p> <p><b>SL.2.1.b</b> Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.</p>
<p><b>Ongoing assessment</b></p>	<p>Listen to children’s responses during whole group and partner conversations.</p> <p>Do children identify and explain key ideas from the text?</p> <p>Do children refer to key details from words and illustrations when discussing the text’s main ideas?</p> <p>What phrases do children use to build on each other’s ideas in discussion?</p> <p>Do children ask each other clarifying questions?</p>

**Notes**







WEEK 4 Day 5

**Text Talk**  
***Oscar and the Moth***  
 Read 2 of 2

<b>Big Ideas</b>	<p>Light and sound travel.</p> <p>Materials interact with light in different ways.</p> <p>Humans and other animals communicate with light and sound.</p>
<b>Weekly Question</b>	What is light?
<b>Content Objectives</b>	<p>I can identify the main topic of an informational text. (R.5.1.a)</p> <p>I can answer questions about key details in an informational text. (R.4.1.a)</p>
<b>Language Objective</b>	I can use words and phrases about animal survival and light in a discussion about the text. (L.6.1)
<b>Vocabulary</b>	<p><b>star:</b> a body of glowing light in the night sky</p> <p><b>firefly:</b> a type of flying beetle that glows</p> <p><b>dusk:</b> the time of evening when the sky grows dark</p> <p><b>signal:</b> a gesture, action, or sound that communicates information; a message</p> <p><b>dazzle:</b> to sparkle</p> <p><b>rim:</b> the upper or outer edge of an object, usually a circular object</p> <p><b>disturb:</b> to interrupt</p> <p><b>bait:</b> food used to entice fish or other animals</p> <p><b>lure:</b> to tempt a person or animal to do something or go somewhere</p> <p><b>shadow:</b> the dark area that is produced when an object comes between a light source and a surface</p>
<b>Materials and Preparation</b>	Ahead of the lesson, group children into heterogeneous reading triads for the Triad Reading routine.

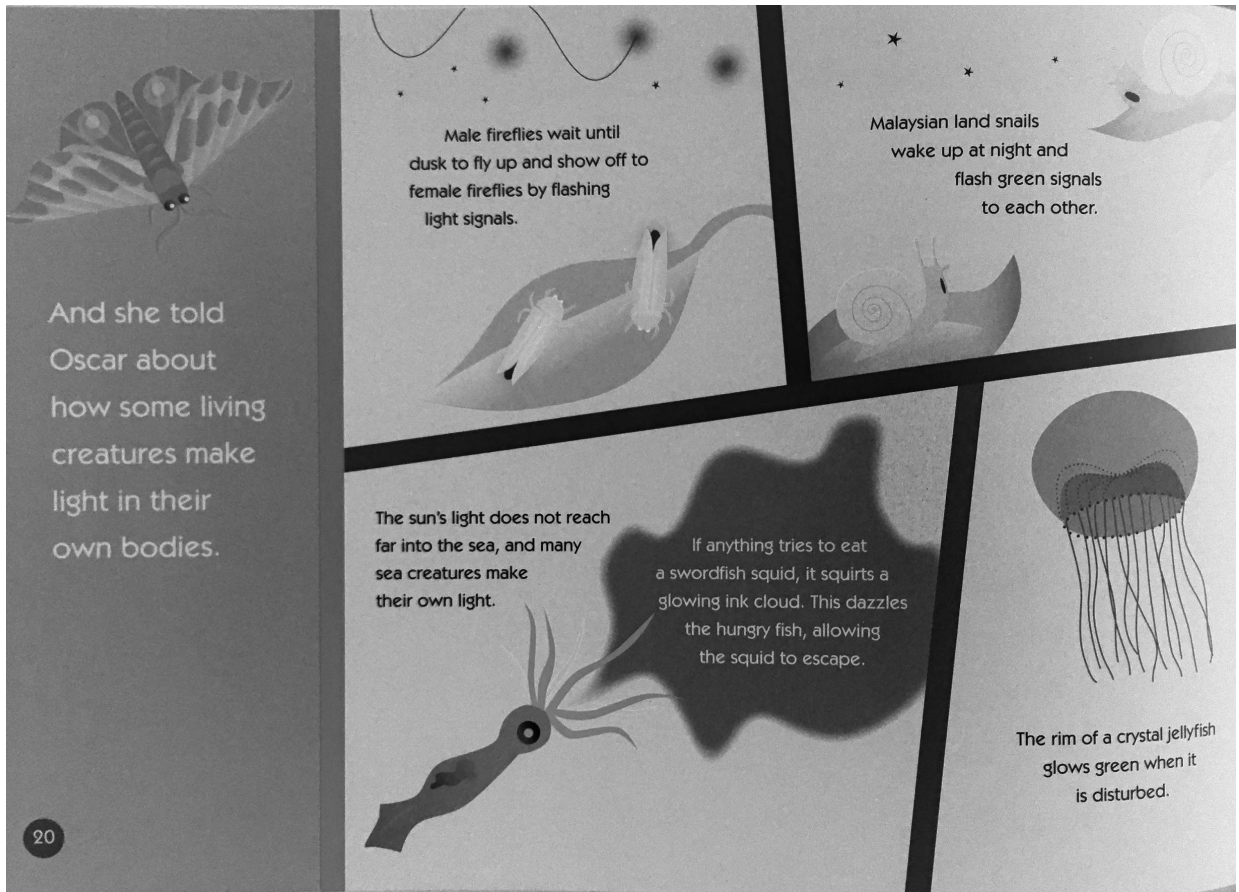
	<ul style="list-style-type: none"> <li>● <i>Oscar and the Moth</i>, Geoff Waring</li> <li>● <i>Oscar and the Moth</i> slides (pages 20-21)</li> <li>● <i>Oscar and the Moth</i> excerpt, copies for each child</li> </ul> <p>On the whiteboard, leaving space underneath for recording children’s ideas, write:  What is the main topic of pages 20 and 21?  Support your idea with two connected details from the text.</p>
<p><b>Opening</b> 1 minutes</p>	<p><i>Yesterday we read Oscar and the Moth and discussed important facts that Oscar learns about light.</i></p> <p>Set a purpose for reading.  <i>Today we’ll go back and closely read two pages. We’ll read through the text on the slides, while you follow along with your own copy. Then we’ll answer questions about key details in small groups. Finally, we’ll answer this question: What is the main topic of pages 20 and 21? You’ll support your idea with two details from the text that are connected to this question.</i></p>
<p><b>Text and Discussion</b> 10 minutes</p> <p>Slide 2 (page 20)</p>	<p>Read the slide while children follow along on their own copies.  <i>Turn to your small group and discuss these questions:  What is similar about how fireflies and MylAsian land snails use light at night?  How do a swordfish and jellyfish use their light to survive?</i></p> <p>Bring children back to the whole group.  <i>Why do many ocean creatures produce their own light?</i></p>
<p>Slide 3 (page 21)</p>	<p>Read the slide. Remain in the whole group to respond to the questions.  <i>The anglerfish and the millipede use their light for different purposes. What’s different about how they use light?  What does it mean that the anglerfish <b>lures</b> other fish with its light?</i></p>
<p><b>Key Discussion and Activity</b> 8 minutes</p>	<p>Think, Triad, Share.  Prompt 1: <i>What is the main topic of these pages?</i>  Record one main topic from each group on the whiteboard. [i.e., Some animals make light in their bodies to survive.]</p> <p>Prompt 2: <i>In your group, select two key details from the text that support the main idea. These two details should be connected. Think about what makes your two details connected, and how they support the main topic.</i></p> <p>As children work, encourage them to support one another in rereading the printed copy of the text.</p>

<p><b>Weekly Question Chart</b> 5 minutes</p>	<p>Refer to the Weekly Question Chart. <i>This week we have been thinking about this question: What is light?</i> Read the chart together. Add any essential ideas that may be missing. Identify and color-code two or three themes that emerge. Some themes might be: Light comes from the sun; light is something that humans and animals use to communicate; light comes from natural sources and human-made sources; animals make light.</p>
<p><b>Closing</b> 1 minute</p>	<p><i>We've learned a lot about light this week! Next week we'll think more about light and how it changes.</i></p>
<p><b>Standards</b></p>	<p><b>R.4.1.a</b> Ask and answer questions about who, what, when, where, and how. <b>R.5.1.a</b> Retell texts, including details about who, what, when, where, and how; demonstrate an understanding of the theme. <b>L.6.1</b> Use words and phrases acquired through conversations, reading, and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., because).</p>
<p><b>Ongoing assessment</b></p>	<p>Listen to children's responses during whole and small group conversations. Do children refer to key details from the text to answer the questions? Do children identify the main topic of the pages and supporting key details? How do children work together to reread the text and gather key details? Do children choose connected details and describe how they are connected?</p>

**Notes**

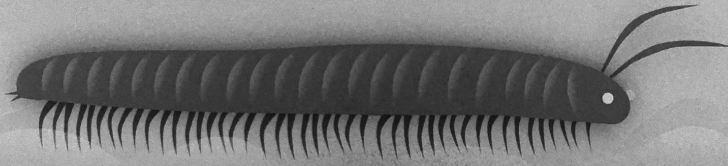


Oscar and the Moth, Geoff Waring, pages 20-21

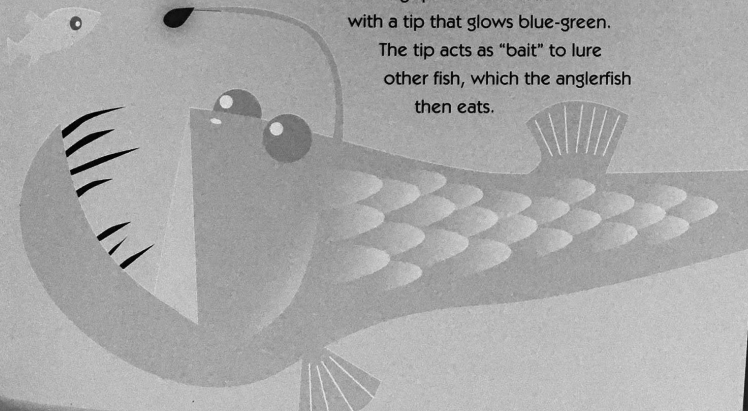


Text Talk U4 W4 D5

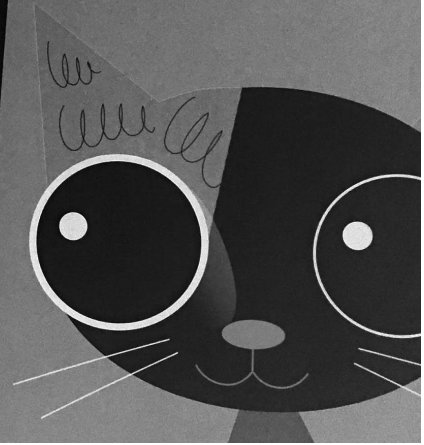
There's a poisonous millipede found in California that lights up at night to warn other animals not to eat it.



The anglerfish lives in the deep sea. It has a big spine on its head with a tip that glows blue-green. The tip acts as "bait" to lure other fish, which the anglerfish then eats.



"I wish I could glow too," Oscar said.



Text Talk U4 W4 D5

Unit 4: Communicating with Sound and Light

WEEK 4

Shared Reading  
“Golden Sun”

<b>Weekly Question</b>	What is light?!
<b>Materials and Preparation</b>	<ul style="list-style-type: none"><li>● chart paper and markers Write out the poem for whole group reading.</li><li>● “Golden Sun” slides</li><li>● pointer</li><li>● highlighter tape (optional)</li></ul>
<b>Opening</b> 1 minute	<p><i>Our Shared Reading text this week is a poem called “Golden Sun” by Elenor Hetrick.</i></p> <p><i>Before we read the poem, we’ll do some work with letters and sounds.</i></p>
<b>Phonological Awareness</b> 6 minutes	<p>Review the Foundations vowel sounds poster and the vowel teams poster.</p> <p>Blend sounds to make a word. <i>We are going to blend sounds together to make a word that we will learn more about.</i></p> <p><i>Listen to these sounds: /s/ /ŭ/ /n/ /r/ /ī/ /z/. Say and tap the sounds. What’s the word? (sunrise)</i> <i>What vowel sounds do you hear? (u) (long i)</i> <i>You noticed that this word has two vowel sounds because it has two syllables. If we break it up we hear the word “sun” and the word “rise”. We practiced words like this last week! Let’s try another.</i></p> <p><i>Listen to these sounds: /ī/ /n/ /v/ /ī/ /t/. Let’s say and tap the sounds. What’s the word? (invite)</i> <i>What vowels do you hear? (short and long i)</i></p>

	<p>Segment sounds and substitute the initial blend.  <i>The word is “plant.”</i>  <i>What sounds do you hear in the word?</i>  <i>How many sounds?</i>  <i>What word do we get if we take out the /pl/ blend and replace it with /gr/?</i></p> <p>Isolate and listen for r-controlled vowels.  <i>I’m going to say a word, then you tell me where you hear the r-controlled vowel.</i></p> <p><i>The first word is “bird.” Say the word.</i>  <i>Where do you hear the r-controlled vowel? (the second sound)</i></p> <p><i>The next word is “flower.” Say the word.</i>  <i>Where do you hear the r-controlled vowel? (the fourth sound)</i>  <i>How many syllables does the word “flower” have?</i></p> <p>Delete and substitute syllables and phonemes.  <i>Now we will delete, or take out, and change sounds in words.</i></p> <p><i>The first word is “golden.” If we delete the second syllable, “en”, what word do we have left? (gold)</i></p> <p><i>The next word is “sunshine.” If we delete the first syllable, “sun,” what do we have left? (shine)</i></p> <p><i>The word is shine. If we change the /sh/ to /m/, what’s the new word? (mine)</i></p> <p><i>The word is mine. If we change the /ɪ/ to /ō̄/, what’s the new word? (moan)</i></p>
<p><b>Shared Reading</b> 8 minutes</p>	<p>Model reading the full poem while tracking the print.  <i>As we read today, think about what you know about compound words to help us understand words with more than one syllable.</i></p> <p>Echo read the poem stanza by stanza while children track the text.</p> <p>Connect the poem to unit content.  <i>Our weekly question this week is “What is light?” The sun is our biggest source of light on Earth! How does the poet feel about light? What makes you think that?</i></p>



	<p><i>What does the poet mean by “All must depend on you?”</i></p> <p>Identify multisyllabic words.  <i>Let’s look at the word “golden” in our poem. This word is called a <b>multisyllabic</b> word—that means it has more than one syllable: gol - den. The word is broken here, between the two consonants.</i></p> <p><i>Now you break a word: yellow. (yel - low).</i></p> <p>Continue to chorally read the poem for fluency practice.</p>
<p><b>Closing</b> 5 minute</p>	<p><i>You will continue to practice reading the poem “Golden Sun” in the Reading Station.</i></p>
<p><b>Standards</b></p>	<p><b>R.2.1.a</b> Distinguish long from short vowel sounds in spoken single-syllable words.  <b>R.2.1.b</b> Produce single-syllable words by blending sounds (phonemes), including consonant blends.  <b>R.2.1.c</b> Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.  <b>R.2.1.d</b> Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).  <b>R.3.1.b</b> Decode regularly spelled one-syllable words.  <b>R.3.1.c</b> Know final -e and common vowel team conventions for representing long vowel sounds.  <b>R.3.1.e</b> Decode two-syllable words following basic patterns by breaking the words into syllables.  <b>R.3.1.f</b> Read words with inflectional endings.  <b>R.12.1.a</b> Read various on-level text with purpose and understanding.  <b>R.12.1.c</b> Use context to confirm or self-correct word recognition and understanding, rereading as necessary.</p>
<p><b>Ongoing Assessment</b></p>	<p>Listen to children as they respond to questions and discussion prompts.  Do children blend and segment phonemes?  Do children isolate r-controlled vowel sounds?  Do children break words into syllables?</p> <p>Listen to children chorally read.  Do children read with appropriate phrasing and expression?</p>
<p><b>Daily Practice</b></p>	<p>To reinforce fluency with this text, find five minutes each day for choral or paired reading.</p> <p>Possible extensions in small or whole group:</p> <ul style="list-style-type: none"> <li>● With teacher dictation, children use cubes or chips to break apart</li> </ul>

	<p>multisyllabic words. For example: The word is rainbow; take away “rain,” what is left? (bow). The word is eating, take away “ing”, what is left? (eat)</p> <ul style="list-style-type: none"><li>● With teacher dictation, children use cubes or chips to break apart multisyllabic words. For example: The word is reflect; change the /r/ to /d/, what is the new word? (deflect).</li><li>● With teacher dictation, children use letter tiles or write with markers on whiteboards to build multisyllabic words. (golden, mistake, explode, tadpole, cupcake)</li></ul>
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**Notes**

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

## **Golden Sun**

By Elenor Hetrick

Great, glorious golden sun,  
Shine down on me today!  
You are the life of this magic Earth,  
You and your magic ray!

You are the life of bird and plant,  
All must depend on you.  
Shine down, great sun, the whole day long!  
Shine from the heavens blue.

And I will welcome your golden rays,  
For you mean life to me,  
And you mean happiness and health,  
Strength and energy.

Shine down, great sun, on flower and field,  
And never say goodbye.  
Forever and ever give us your light.  
From out the wide, blue sky.

## Unit 4: Communicating with Sound and Light

### WEEK 4

### Stations

Station	Activities	Materials Writing tools at each station
<b>Shared Reading</b>	“Golden Sun”	<ul style="list-style-type: none"> <li>● Shared Reading text on chart and/or slides</li> <li>● pointer</li> </ul>
<b>Teacher Groups</b>	Strategic small group instruction	<ul style="list-style-type: none"> <li>● as needed</li> </ul>
<b>Reading</b>	Independent and Partner Reading	<ul style="list-style-type: none"> <li>● “Golden Sun” child copies</li> <li>● individual book bags</li> <li>● pencils</li> </ul>
<b>Listening &amp; Speaking</b>	Talk, Draw, Talk	<ul style="list-style-type: none"> <li>● Week 4 image (cat)</li> <li>● Week 4 prompt and recording sheet</li> <li>● sand timers</li> <li>● drawing tools</li> </ul>
	Listen and Respond: <i>Sending Messages with Light and Sound</i> and <i>All About Light</i>	<ul style="list-style-type: none"> <li>● audio recording and technology</li> <li>● <i>Sending Messages with Light and Sound</i> book</li> <li>● <i>All About Light</i> book</li> <li>● conversation prompts</li> </ul>
<b>Vocabulary</b>	Draw for Meaning <i>communicate, produce, effect, amplify, key, pitch</i>	<ul style="list-style-type: none"> <li>● <b>Unit 4, Week 3</b> Weekly Words cards</li> <li>● Draw for Meaning sheets</li> </ul>
<b>Science Literacy</b>	What is light? Filling in weather calendar	<ul style="list-style-type: none"> <li>● Week 4 prompts, printed as stickers or copied and cut apart, with glue sticks</li> <li>● science journals</li> <li>● colored pencils and pencils</li> </ul>
<b>Word Work</b>  (align with phonics program)	Fluent Reader’s Challenge	<ul style="list-style-type: none"> <li>● Week 4 Fluent Reader’s Challenge sheets</li> <li>● sand timers</li> <li>● Fluent Reader’s Challenge directions card</li> </ul>
	Look, Cover, Write, Check	<ul style="list-style-type: none"> <li>● Week 4 Look, Cover, Write, Check sheets</li> <li>● Look, Cover, Write, Check directions card</li> </ul>

Stations U4 W4

	Make Multisyllable Words	<ul style="list-style-type: none"> <li>● Syllable sheets</li> <li>● scissors</li> <li>● Multisyllabic Words recording sheets</li> <li>● Make Multisyllable Words directions card</li> </ul>
	Sentences	<ul style="list-style-type: none"> <li>● Week 4 Sentences sheets</li> <li>● scissors</li> <li>● Sentences directions card</li> </ul>

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

## Fluent Reader's Challenge

**A** little reptile **is** in **the** tub.

Did **you** invent this cupcake?

**He has been** absent **from** class.

I dislike **people who** scare **me**.

That **is** just **a little** mistake.

**I have been** at **the** dentist.

**The** fireman **is** blinking **from too** much smoke.

**I want** that plastic jug.

**Do you own a** backpack?



Minutes:

**Skills:**

Recognize and read grade-appropriate irregularly spelled words.

Read with sufficient accuracy and fluency to support comprehension.

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

Look	Cover	Write	Check ✓
------	-------	-------	---------

little	<hr/> <hr/> <hr/>	
been	<hr/> <hr/> <hr/>	
own	<hr/> <hr/> <hr/>	
want	<hr/> <hr/> <hr/>	
month	<hr/> <hr/> <hr/>	
people	<hr/> <hr/> <hr/>	

Skills: Recognize and read grade-appropriate irregularly spelled words.

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

Making Multisyllable Words

	him	mit
	in	tist
	pub	kin
	bath	zip
	den	sent
	ab	vent
	nap	toe
	tip	self
	un	tub
	sub	lish

Skills: Know and apply grade-level phonics and word analysis skills in decoding words.



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

Write Multisyllable Words

1 _____ ----- _____	2 _____ ----- _____
3 _____ ----- _____	4 _____ ----- _____
5 _____ ----- _____	6 _____ ----- _____
7 _____ ----- _____	8 _____ ----- _____
9 _____ ----- _____	10 _____ ----- _____

Word Bank				
unzip	submit	bathtub	dentist	himself
invent	tiptoe	absent	napkin	publish

## Sentences

sentence 1

girl

this

about

little

owns

this

laptop

sentence 2

been

ever

pigpen

you

to

have

a

sentence 3

of	people	lots	
are	sunset	the	watching

Skills: Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).

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

Sentences

On the lines below, write each sentence you built. Add capital letters and punctuation.

1.

\_\_\_\_\_

-----

\_\_\_\_\_

2.

\_\_\_\_\_

-----

\_\_\_\_\_

3.

\_\_\_\_\_

-----

\_\_\_\_\_

Skills: Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).

Talk, Draw, Talk Week 4



<https://www.pinterest.com/pin/44965696249943059/>



<https://www.pinterest.com/pin/44965696249943059/>

Listening & Speaking U4 W4.1

Focus on First/ 1st Grade for ME | Boston Public Schools Department of Early Childhood P-2/  
Maine Department of Education

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

**Talk Draw Talk**

Look carefully at the image. Talk with your partner about what the cat seems to be noticing. Where is the light coming from? What might be creating the shadows? After you talk, draw an image of your body and a shadow it might make. Talk with your partner about your drawings.



***Sending Messages with Light and Sound*** and ***All About Light*** Conversation Prompts: Cut apart and provide with text and audio recording.

**Question 1**

According to the text, what are three ways we can use light and sound to send messages?

***Sending Messages with Light and Sound***

**Question 2**

According to the text, what are three things we know about light?

***All About Light***

WEEK 4 Lesson 1

**Science and Engineering: Light is Energy**  
Experimenting with Light

<b>S &amp; E Big Ideas</b>	Light is energy that we can see.
<b>S &amp; E Guiding Question</b>	What is light?
<b>Content Objective</b>	I can conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. (1-PS4-3)
<b>Language Objective</b>	I can listen to my peers and engage in conversations about light. (Standard 1)
<b>Vocabulary</b>	<b>opaque:</b> something that is not see through <b>translucent:</b> something that allows some light to pass through but it is not clear <b>transparent:</b> something that is clear and light can pass through
<b>Materials and Preparation</b>	<ul style="list-style-type: none"><li>● <a href="https://www.youtube.com/watch?v=zBosbqByR3c">Where Does Light Come From?</a> video (https://www.youtube.com/watch?v=zBosbqByR3c)</li><li>● black construction paper</li><li>● clear plastic cups, 2 Wrap the outside of one cup with black construction paper.</li><li>● water When ready to conduct the investigation, fill the cups halfway with water.</li><li>● scissors</li><li>● tape</li><li>● thermometer</li><li>● digital timer</li><li>● <a href="#">Light Energy Experiment Data Chart</a>, one ½ sheet per child</li></ul> <p>This activity is best done outside on a warm day, but a sunny window</p>



	will also do. The investigation requires checking on the cups of water every hour, therefore, if possible, start the investigation in the morning.
<b>Opening</b> 10 minutes	<p>Explain to the children that light is a form of energy. <i>What can we use solar energy for? Have you ever seen a solar farm?</i></p> <p>Draw children’s attention to the recent addition of solar farms in Maine. Solar energy, energy that comes from the sun, uses light to create energy for homes and even some cars. <i>The sun is like a big battery that has lots of stored energy in the form of light and heat. Without that energy, we could not live on Earth.</i></p> <p>Show the video.</p>
<b>Investigation</b> 5 minutes  After, check on the water in 1 hour intervals	<p>Share that today children will be testing the sun’s energy. They will be using the light energy to heat up water. Explain that black is a color that absorbs light and heat quickly. <i>Have you ever worn a black shirt on a hot summer day and someone has told you to change into a different colored shirt?</i></p> <p>Explain that this is because black holds the light and heat energy very well.</p> <p>Distribute the Data Charts.</p> <p>Present to the whole group one clear cup of water and a thermometer. Take the temperature of the water and have the children record the measurement on their chart. Then, show the children another cup that has the outside covered with black construction paper. Repeat the measurement reading and have the children record the temperature. Place both cups in the sun. Set a time. Check in on the two cups in 1 hour intervals. Have the children record the temperature readings each time.</p>
<b>Discussion</b> 5 minutes	<i>Why did the cup with the black paper reach a higher temperature? What is light?</i>
<b>Closing</b> 2 minutes	<i>How can we apply this knowledge to our own lives?</i>
<b>Standards</b>	<p><b>1-PS4-3</b> Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.</p> <p><b>Standard 1:</b> Prepare for and participate in conversations across a range of topics, types, and forums, building on others’ ideas and expressing their own.</p>



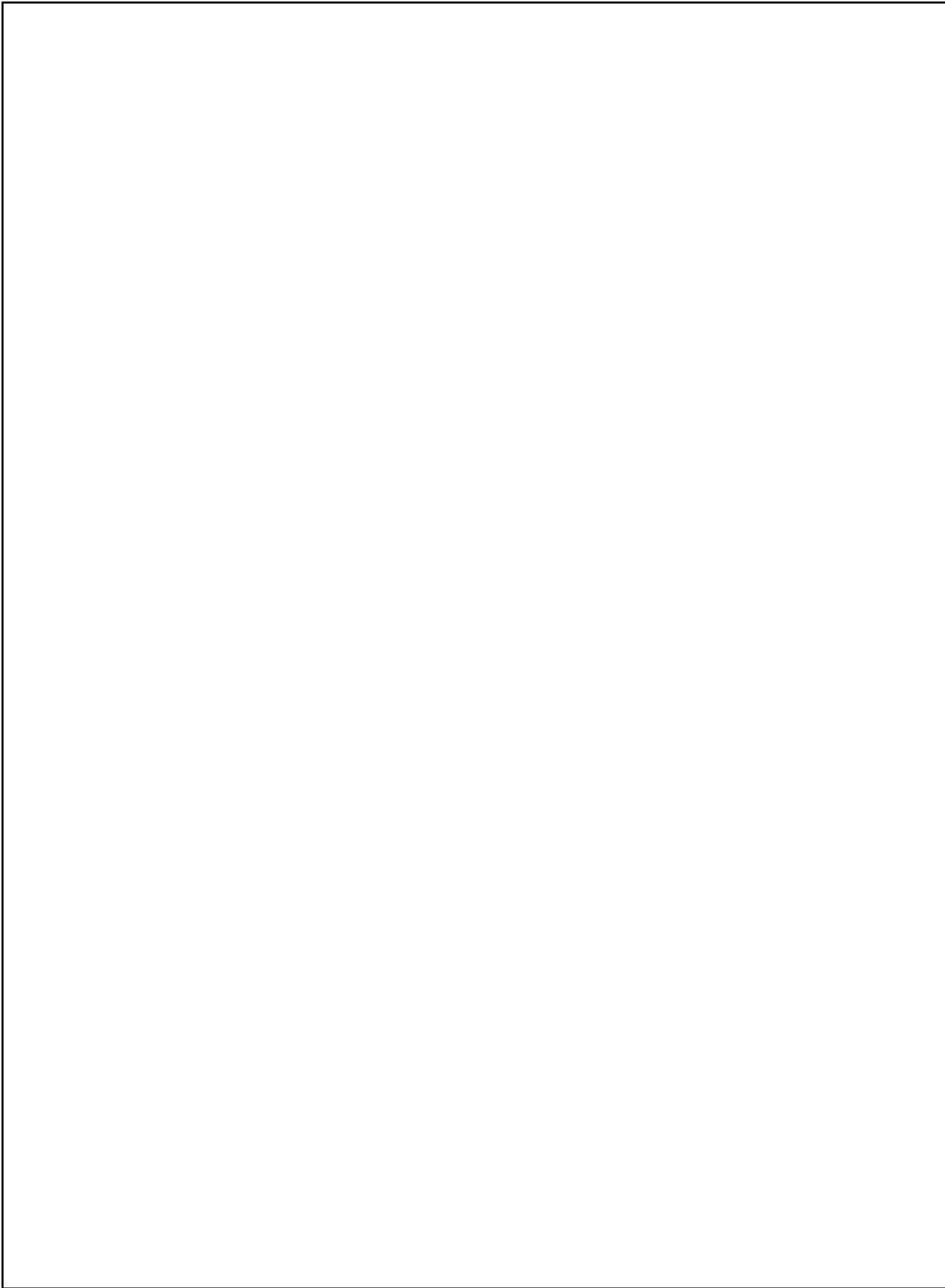
WEEK 4 Lesson 1

**Science and Engineering: Lights Interactions with Materials**  
Exploring Light

<b>S &amp; E Big Ideas</b>	Materials interact with light in different ways.
<b>S &amp; E Guiding Question</b>	Can light pass through any object?
<b>Content Objective</b>	I can conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. (1-PS4-3)
<b>Language Objective</b>	I can listen to my peers and engage in conversations about light. (Standard 1)
<b>Vocabulary</b>	<b>opaque:</b> something that is not see through <b>translucent:</b> something that allows some light to pass through but it is not clear <b>transparent:</b> something that is clear and light can pass through
<b>Materials and Preparation</b>	<ul style="list-style-type: none"><li>● <a href="https://www.youtube.com/watch?v=d7yTlp4gBTI">Light The Dr.Binocs Show</a> video (<a href="https://www.youtube.com/watch?v=d7yTlp4gBTI">https://www.youtube.com/watch?v=d7yTlp4gBTI</a>)</li><li>● chart paper and markers</li><li>● flashlights, one per group</li><li>● clear plastic (or transparency, or ziploc bag), one per group</li><li>● wax paper, one piece per group</li><li>● black felt, one piece per group</li></ul> <p>Children will work in small groups of 3. If necessary, prepare these groups ahead of time.</p>
<b>Opening</b> 10 minutes	Introduce the lesson vocabulary. Explain that like sound, light also travels in rays. Some materials allow the light waves to pass through without disturbing them. Some materials allow some light waves to pass through,

	<p>and other materials don't let any light waves pass through. Collect ideas from the children.</p> <p><i>What materials do you think let light waves through clearly?</i></p> <p><i>What materials do you think stop light waves from passing through?</i></p> <p><i>What materials do you think let some light through?</i></p> <p>Record their responses on the chart.</p>
<b>Investigation</b> 10 minutes	Place the children into small groups. They will take turns being the Flashlight Operator and Material Testers. The children will test each material and determine if it is opaque, transparent, or translucent.
<b>Discussion</b>	<p>Ask the children to share their observations. Encourage them to agree, disagree, and build on each other's ideas. Use these questions to guide the discussion.</p> <ul style="list-style-type: none"> <li>● <i>Which material do you think was transparent?</i></li> <li>● <i>How did you reach that conclusion?</i></li> <li>● <i>Which material do you think was translucent?</i></li> <li>● <i>How did you reach that conclusion?</i></li> <li>● <i>Which material do you think is opaque?</i></li> <li>● <i>How did you reach that conclusion?</i></li> </ul> <p>Show the video.</p>
<b>Closing</b>	<p><i>Light waves can travel, but they cannot pass through all objects.</i></p> <p>Ask the children about new evidence that supports this idea.</p>
<b>Standards</b>	<p><b>1-PS4-3</b> Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.</p> <p><b>Standard 1:</b> Prepare for and participate in conversations across a range of topics, types, and forums, building on others' ideas and expressing their own.</p>
<b>Ongoing assessment</b>	Check for understanding in the children's responses.

<b>Notes</b>
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Science and Engineering U4 W4

Adapted with permission for Maine Public Schools

**Focus on First/ 1st Grade for ME** | Boston Public Schools Department of Early Childhood P-2/

Maine Department of Education

Week 4 Prompt

What is light?	Date: _____ Temperature: _____ Daylight Hours: _____	Phase of the Moon 
What is light?	Date: _____ Temperature: _____ Daylight Hours: _____	Phase of the Moon 
What is light?	Date: _____ Temperature: _____ Daylight Hours: _____	Phase of the Moon 
What is light?	Date: _____ Temperature: _____ Daylight Hours: _____	Phase of the Moon 
What is light?	Date: _____ Temperature: _____ Daylight Hours: _____	Phase of the Moon 
What is light?	Date: _____ Temperature: _____ Daylight Hours: _____	Phase of the Moon 
What is light?	Date: _____ Temperature: _____ Daylight Hours: _____	Phase of the Moon 

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

### Light Energy Experiment Data Chart

Time	Clear Cup Temperature	Covered Cup Temperature
Start		
1 Hour		
2 Hours		
3 Hours		

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

### Light Energy Experiment Data Chart

Time	Clear Cup Temperature	Covered Cup Temperature
Start		
1 Hour		
2 Hours		
3 Hours		

Unit 4: Communicating with Sound and Light

WEEK 4 Studios



**What is light?**

In the Art, Building, and Writing and Drawing Studios, children make shadow puppets and a shadow puppet theatre and use a storyboard technique to plan stories to tell with the puppets. They tell and act out stories in which light impacts the characters and events. Children search for, identify, and describe qualities of light in the Library Studio. They continue investigations from Science and Engineering lessons.

<p><b>Big Ideas</b></p>	<p>Light and sound travel. Materials interact with light in different ways.</p>
<p><b>Materials and Preparation</b></p>	<ul style="list-style-type: none"> <li>● Studios prompts, cut apart and added to each bin</li> <li>● Studios Planner</li> <li>● observation sheets</li> </ul> <p>Bring to the whole group meeting only those bins needed for introductions.</p> <p><u>For the Art Studio:</u></p> <ul style="list-style-type: none"> <li>● Making Shadow Puppets procedure, 2-4 copies in sleeve protectors</li> <li>● black cover stock paper, some cut into halves and some into quarters</li> <li>● scrap paper</li> <li>● white and/or graphite pencils</li> <li>● scissors</li> <li>● glue sticks</li> <li>● wooden coffee stirrers, enough for 1 or 2 per puppet</li> <li>● tape</li> <li>● paper fasteners, optional, for more complicated puppets</li> </ul> <p>Note: Children will make puppets in the Art Studio and a puppet theatre in the Building Studio; plan for movement and experimentation</p>



between these two areas.

For the Building Studio:

Review directions for making a shadow puppet theatre, and plan the most appropriate approach for the classroom. ([Kidspot/YouTube](#), [We Have Kids](#), [Kidspot](#), [Inner Child Fun](#))

- Making a Shadow Puppet Theatre procedure, in a sleeve protector
- one large or several small boxes
- lamp(s)
- lightweight paper or waxed paper (as large as the box)
- pencils
- tape
- scissors (or utility knife for adult use)

For the Drama Studio:

- fabric and clothespins
- flashlights and/or other light sources
- other props used for acting out stories
- Unit and other texts featuring light
- paper or notebooks
- writing and drawing tools

For the Library Studio:

- Unit 4 and other books
- Light Search sheets  
Alternatively, a large chart might be made so all children contribute to a group search.
- clipboards
- writing tools

For the Science and Engineering Studio:

- materials from Science lessons
- additional items from around the classroom that are transparent, opaque, and translucent
- science journals
- colored pencils


For the Writing and Drawing Studio:


- half- or quarter sheets of paper


Review Studios descriptions below. Decide which studios to introduce explicitly. Prepare the Opening basket and materials accordingly.


<p><b>Opening</b></p>	<p><i>There is so much to explore about light! We have lots of new Studio activities this week, as we shift our focus from sound to light.</i></p> <p><i>The Art and Building Studios work together. At the Art Studio, you can make shadow puppets, and at the Building Studio you can create a shadow puppet theatre to try them out. Of course, at the Writing and Drawing Studio you can plan, draw, and write stories for the puppets.</i></p> <p><i>At the Drama Studio, you might also create and act out a story in which light is important. Maybe a certain light—or darkness—has an impact on what happens to the characters.</i></p> <p><i>At the Library Studio, you can do a light search! Look through our books—any of them, not just the ones about light!—and see what different sources and kinds of light you can find. When you record them on this sheet [show the Light Search recording sheet], see what adjectives you can use to describe the lights. Are they bright, flashing, blinking, blinding, soft...?</i></p> <p><i>At the Science and Engineering Studio, you can continue your investigations of different materials and how light interacts with them.</i></p> <p>Describe and model each studio to the extent needed for children to begin their work.</p> <p><i>Turn and tell your partner your plan and your backup plan.</i> Ask a couple of children to share their plans, and dismiss all children to begin working.</p>
<p><b>Facilitation</b></p>	<p>As children work, circulate and engage children in conversation about their endeavors. Exploit opportunities to highlight children’s connections to the Weekly Question and the unit’s Big Ideas. Offer support in the form of material and print resources, strategies, adaptive tools, and consultation with peers.</p> <p>Listen in, observe, and take notes about children’s interests, experiences with, and questions about light. Use these notes to plan for upcoming Studios sessions.</p> <p>While children work, consider which piece of work to bring to a Thinking and Feedback meeting.</p>

<b>Closing Studios</b>	<p>Support smooth clean up of studios materials and organization of works in progress.</p> <p>Facilitate a short, whole group meeting after Studios to discuss children’s activities, discoveries, and questions.</p>
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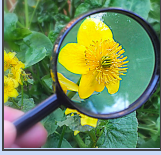
<p style="text-align: center; font-weight: bold; font-size: 1.2em;">Art</p> <div style="text-align: center; margin-top: 20px;">  </div>	<p><b>Making Shadow Puppets</b></p> <p><u>Objective:</u> I can experiment with light to make a shadow puppet.</p> <p><u>Introduction:</u> <i>As we begin to learn about light, one thing we are exploring is shadows. We can make puppets out of light and shadows! In the Art Studio, you can refer to these procedures to try to make different kinds of shadow puppets—with your hands, and with paper. To do this, you’ll need to think about shapes you want to make and about how to get them to appear on the wall, using light.</i></p> <p><u>Process:</u> Children first experiment with making and moving shadows with their hands. They can watch a video for inspiration. After experimenting with their hands as puppets, they begin making paper puppets.</p> <p>Children decide on a character—animal, plant, or person—and follow the Shadow Puppet Procedure to create their puppets with provided materials. They support each other with deciding on what to represent through puppets, drawing, cutting, and assembling puppets. As they work, children may begin to conceptualize the stories these puppets will inhabit.</p> <p><u>Facilitation:</u> Offer material and conceptual help as children work, and refer them to each other for support and collaboration. Encourage children to articulate what they are discovering about how to use the light and their hands and paper to make their puppets.</p> <p>Children may be tempted to draw details onto the paper puppets. Encourage them to experiment with the puppets in front of the light to discover whether these marks are effective.</p> <p style="padding-left: 40px;"><i>What are you noticing about how the light and the shadow are related?</i></p> <p style="padding-left: 40px;"><i>What is challenging about this?</i></p>
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	<p><i>Do you have a story in mind for these puppets to play out?</i></p> <p><b><u>Ongoing Assessment:</u></b> Listen to the vocabulary children are using to describe the parts of their puppets and how they make effective shadows. Take note of any misconceptions or questions children express. Notice how children follow the procedure and use the resources available to them.</p> <p><b><u>Thinking and Feedback Possibilities:</u></b> Invite children to bring their puppets to the whole group. Classmates might respond to and give feedback about the shapes children have made to communicate different characters, how the puppets are moved in the light, and emerging stories.</p>
<p><b>Building</b></p> 	<p><b>Building a Puppet Theatre</b></p> <p><b><u>Objective:</u></b> I can build a puppet theatre to effectively show a shadow puppet story.</p> <p><b><u>Introduction:</u></b> <i>As you make shadow puppets, you will need a puppet theatre to use them!</i></p> <p>Refer to the procedure for building a shadow puppet theatre and show the available materials. Note that children can choose to make small or large puppet theatres (depending in part on available materials), and that they may need adult help for cutting the box(es).</p> <p><b><u>Process:</u></b> Children work together to make a puppet theatre. They may need adult help to walk through the procedure and cut the cardboard.</p> <p>They set up the light and experiment with hand or paper puppets to refine the theatre design.</p> <p><b><u>Facilitation:</u></b> Encourage children to work collaboratively. <i>What is important to consider in making the puppet theatre work effectively?</i> <i>What do you think is the best position for the theatre and the light? Why do you think so?</i></p> <p><b><u>Ongoing Assessment:</u></b> How are children bringing their evolving understandings about light and shadow to the problem of creating the puppet theatre? What materials do they try, and which do they reject or include?</p>

	<p>What strategies do they consider for orienting the light?          How do they articulate their thinking?          What vocabulary do they use?</p> <p><u>Thinking and Feedback Possibilities:</u>          Invite children to bring the puppet theatre to the whole group and to demonstrate how it works. They might share and ask for feedback on their design and strategies, or they might share and ask for help about a dilemma for making it work more effectively.</p>
<p><b>Drama</b></p> 	<p><b>Telling, Writing, and Acting Out Stories</b></p> <p><u>Objective:</u>          I can use what I know and am learning about light to tell, write, and act out stories.</p> <p><u>Introduction:</u>  <i>This week we are learning about light. Can you create and act out a story in which light is important? Maybe a certain kind of light—or maybe darkness—has an impact on the characters and events.</i></p> <p><u>Process:</u>          Children create stories that include light. They might use fabric or furniture to create relative darkness; they might use flashlights as various light sources. They can use paper to cut out a sun or moon to hang in the studio. Children write and draw their stories as a way to record them, as well as record with video as they act out stories.</p> <p><u>Facilitation:</u>          Encourage children to tell stories, to record them in writing and drawing, and to act them out.  <i>How did you decide what story to tell?</i>  <i>How will you show that?</i>  <i>What will happen next?</i></p> <p><u>Ongoing Assessment:</u>          Video record stories as children act them out. Share the recordings back with children and ask them if the story accomplishes what they wish, what they might like to add or change, and whether the story might continue in another part.</p> <p>Collect stories children have written and drawn and review them for writing conventions and language and vocabulary development.          What solid understandings are revealed in these stories? What</p>

	<p>opportunities for further learning about the topic? What interests?</p> <p><u>Thinking and Feedback Possibilities:</u>  Invite children to act out their stories. Generate feedback about the storylines, the ways characters respond to light sources and phenomena, and the actors’ gestures. Classmates might suggest what could happen if the story continues.</p>
<p><b>Library</b></p> 	<p><b>Searching for and Describing Light</b></p> <p><u>Objective:</u>  I can peruse books to find sources of light and use adjectives to describe the different kinds of light I find.</p> <p><u>Introduction:</u>  <i>You have looked through our books to find sources of sound. Now you can look for sources of light.</i>  Show the Light Search sheets and walk through writing a book title, identifying a light source, and recording adjectives to describe it.</p> <p><u>Process:</u>  Independently and with classmates, children read to find, name, and describe light sources and effects. They record their findings on the sheet provided.</p> <p><u>Facilitation:</u>  <i>What light sources are you finding?</i>  <i>How do you know what is producing this light?</i>  <i>How can you describe the quality of this light, differently than other sources?</i>  <i>Can you record your findings with a drawing? With words?</i></p> <p><u>Ongoing Assessment:</u>  Review children’s Light Search sheets (or the class chart). Note how children record book titles, what light sources they identify, and what adjectives they use to describe light.  Do children use words that communicate shades of meaning?</p> <p><u>Thinking and Feedback Possibilities:</u>  Invite a research pair to share what they have found. Invite them to show two or three light sources they have found in texts and to share their adjectives. Would their classmates describe these lights in the same ways? What resources do children use to come up with adjectives?</p>

## Science and Engineering



### Exploring Light and Materials

#### Objective:

I can sort and find materials according to whether they are opaque, translucent, or transparent.

#### Introduction:

Reintroduce materials and processes, as needed, from the week's Science and Engineering lessons.

#### Process:

Children continue their investigations from Science lessons, flexibly and playfully exploring how light interacts with different materials and recording their findings. Children may continue to identify items around the room that are transparent, translucent, and opaque.

#### Facilitation:

*What have you discovered about light and different materials?*

*Which materials have surprised you in some way?*

*What more do you want to find out?*

#### Ongoing Assessment:

Observe as children work and review their science journal entries. Make note of emerging understandings, questions, and misconceptions. Consider what other materials from around the classroom might be useful in helping children build further knowledge.

#### Thinking and Feedback Possibilities:

Children will engage in Science Circles during Science and Engineering lessons to extend their thinking and work.

## Writing and Drawing



### Making Storyboards

#### Objective:

I can use a storyboard to plan a story featuring light.

#### Introduction:

*Plan a story to tell with your shadow puppets. You can use the storyboard technique to plan out your story. By putting one event on each paper and then laying them out, you can think about whether you want to add something in the middle or change the order of the events that happen.*

Show the paper for creating a storyboard; demonstrate drawing or writing one event on each piece of paper, and then rearranging the sequence.

	<p><u>Process:</u> Children use a series of pages to create a storyboard. This format allows children to add elements in the middle of their stories or to reorder the sequence of events.</p> <p>Children might also continue writing procedures, including for making shadow puppets or a puppet theatre.</p> <p><u>Facilitation:</u> <i>What is happening in your story?</i> <i>How is light important in the story?</i> <i>Is this the best order of events?</i> <i>Is there anything you want to add?</i> Invite children to share their storyboards with each other and to solicit feedback about the order of events.</p> <p><u>Ongoing Assessment:</u> Review children’s procedures using the Procedure Observation Tool.</p> <p><u>Thinking and Feedback Possibilities:</u> As in the studio work itself, invite a writer to share a procedure and have other children follow it to see whether it is effective.</p>
<p><b>Standards</b></p>	<p>Standards addressed will depend upon the studios in which children work. Possibilities include those listed in the Studios Introduction (Part 2: Components) and the following studio-specific standards.</p> <p><u>Drama:</u> <b>L.6.1</b> Use words and phrases acquired through conversations, activities in the grade 1 curriculum, reading and being read to, and responding to texts, including using frequently occurring conjunctions (e.g., because) to signal simple relationships.</p> <p><u>Science and Engineering:</u> <b>Practice 1.</b> Asking questions and defining problems <b>Practice 2.</b> Developing and using models</p> <p><u>Writing and Drawing:</u> <b>W.2</b> Develop, strengthen, and produce polished writing by using a collaborative process that includes the age-appropriate use of technology.</p> <p><b>W.2.1.a</b> With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to</p>





## **Art Studio**

What do I notice about how the light and the shadow are related?

What is challenging about this?

What story might these puppets play out?

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## **Building Studio**

How can we make an effective shadow puppet theatre?

What is the best position for the theatre and the light?

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## **Drama Studio**

How will I show the story I want to tell?

What might happen next?

## **Library Studio**

What light sources am I finding?

How can I tell what is producing this light?

What special words describe this light?

---

## **Science and Engineering Studio**

What am I discovering about light and different materials?

Which materials have surprised me?

What more do I want to find out?

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## **Writing and Drawing Studio**

How is light important in this story?

Is this the best order of events?

# Making Shadow Puppets

## Hand Shadow Puppets

Materials:

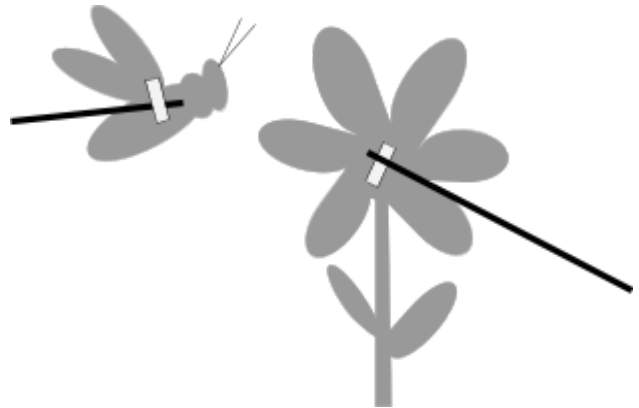
- a light
- a wall
- [How to Make Shadow Puppets With Your Hand](#)

Watch the video, and try it!

## Paper Shadow Puppets

Materials:

- scrap paper
- pencil
- heavy paper or light cardboard
- sticks, pencils, chopsticks, or any other long, thin sticks
- any kind of tape or glue
- paper fastener or paperclip, optional



1. Decide what puppet to make. Sketch it on scrap paper.
2. Using a pencil and the sketch, draw the shape on the heavy paper or light cardboard.
3. Cut it out.
4. To make a complicated shape, cut out separate shapes and glue or tape them together.
5. Using tape, attach a wooden stick to the back.

The puppet will be easiest to hold and move with the stick coming out from the side.

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# Making a Shadow Puppet Theatre

## Materials:

- a large or small cardboard box
- scissors
- tape
- thin white paper or wax paper
- straws, craft sticks, or skewers
- a light, such as a lamp or flashlight

1. Tape the box closed.
2. Trace about 2 inches away from the edges of the large faces of the box on both sides.
3. With help, cut out on the tracing lines.
4. Tape the paper over one cut side of the box.
5. Leave the other side of the box open.

Names \_\_\_\_\_

Look through our books. Find as many examples of light as you can. Record what you find and use adjectives to describe each light.

book title	light source	adjectives