

# Kenilworth Public Schools

## Curriculum Guide

Content Area: Science

Grade: 1

BOE Approved: 7/11/2016

Revision Date: 12/13/21

Submitted by: Leslie Bedford

BOE Revision Approved: N/A

# Science- First Grade Scope and Sequence

Unit 1- Earth Science Air and Weather	Unit 2- Physical Science Sound and Light	Unit 3- Life Science Insects and Plants
Weeks 1-8	Weeks 9-17	Weeks 18-26
<p><i>Unit Description:</i> Students will understand the effects of air and seasonal patterns.</p>	<p><i>Unit Description:</i> Students will use simple tools and musical instruments to observe and manipulate sound and light.</p>	<p><i>Unit Description:</i> Students will observe the different life cycles of plants and insects.</p>
<p><i>Unit Targets:</i></p> <ul style="list-style-type: none"> <li>• Air is a gas and is all around us.</li> <li>• Air is matter and takes up space.</li> <li>• Air makes objects move.</li> <li>• Air moves from place to place. Moving air is wind.</li> <li>• Air resistance affects how things move.</li> <li>• Air can be compressed.</li> <li>• The pressure from compressed air can move things, including water.</li> <li>• Weather describes conditions in the air outside.</li> </ul>	<p><i>Unit Targets:</i></p> <ul style="list-style-type: none"> <li>• Sounds always come from objects that are vibrating, and that vibrating objects always make sound.</li> <li>• Objects have an effect on sound.</li> <li>• Sounds derive from human and natural sources</li> <li>• There is a relationship between the amount of energy used to produce a sound and the volume of the sound.</li> <li>• There is a relationship between pitch and length for sound.</li> <li>• Sound can be used for communication.</li> </ul>	<p><i>Unit Targets:</i></p> <ul style="list-style-type: none"> <li>• Insects need food, space, water, and air.</li> <li>• Insects have the following body parts; 6 legs, head, abdomen, antennae, eyes, and thorax</li> <li>• Insects go through the following life stages- egg, larva, pupa, and adult</li> <li>• Plants need soil, water, and light.</li> <li>• Plants change over time.</li> <li>• Specific environmental conditions are advantageous for pollination of plants.</li> <li>• Insects and birds are crucial to the survival of plants.</li> </ul>

- Temperature describes how hot or cold the air is. Temperature is measured with a thermometer.
- Clouds are made of liquid water drops that fall to Earth as rain. Wind moves clouds in the sky.
- The Sun and Moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night.
- Wind is moving air.
- Meteorologists use wind scales (models) to describe the strength of the wind
- Meteorologists use anemometers to measure the speed of the wind.
- A wind vane points in the direction the wind is coming from.
- Wind lifts kites up into the sky.
- Daily changes in temperature and weather type can be observed, compared, and predicted over a month.
- The Sun and Moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night.
- Each season has a typical weather pattern that can be observed, compared, and predicted. The number of hours of daylight changes predictably through the seasons.
- The Sun produces energy and its heat has an effect on daily activities. \*Climate Change

- Shadows change shape due to the relation of an object to light.
- The Sun is a natural source of light that can create shadows.
- Opaque materials block the light.
- Transparent materials allow light to travel through the materials.
- Translucent objects allow some of the light to travel through.
- The darkest shadows are made by objects that are opaque, whereas translucent objects create lighter shadows.
- Mirrors can be used to direct light to different locations.
- Mirrors can be used to see objects in different locations.
- Animal eyes have varying degrees of seeing in the dark.

activity.		
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# Science- First Grade Earth Science- Air and Weather

<b>Unit title:</b> Earth Science	
<b>Unit summary:</b> Students will understand the effects of air and seasonal patterns.	
<b>Primary interdisciplinary connections:</b> ELA- RL.1.1; RL.1.2.1; RL.1.10; W.1.7; W.1.8; W.2.6; W.2.8; SL.2.5 Mathematics- MP.2; MP.4; MP.5; 1.OA.A.1; 1.MD.C.4;	
<b>Career Readiness, Life Literacies, and Key Skills:</b> 9.1.2.CR.1-2; 9.1.2. FI.1; 9.1.2.FP.1-3; 9.1.2.PB.1-2; 9.1.2.RM.1; 9.1.2.CAP.1-4; 9.4.2.CI.1-2; 9.4.2.CT.1-3; 9.4.2.DC.1-7; 9.4.2.GCA:1; 9.4.2.IML.1-4; 9.4.2.TL.1-7	
<b>Learning Targets</b>	
<b>NJSLS Standards:</b> 1-ESS1-1; 1-ESS1.A-B; 1-ESS1-2; K-2-ETS1-1; K-2-ETS1-2; K-2-ETS1-3	
<b>Computer Science and Design Thinking Standards:</b> 8.1.2.CS.1-3; 8.1.5.NI.1-4; 8.1.2.IC.1; 8.1.2.DA.1-4; 8.1.2.AP.1-6; 8.2.2.ED.1-4; 8.2.2.ITH.1-5; 8.2.2.NT.1-2; 8.2.2.ETW.1-4; 8.2.2.EC.1;	
<b>Content Statements:</b>	
1	Defining and Delineating Engineering Problems
2	Developing Possible Solutions for Environmental Problems
3	Optimizing Design Solution
4	The Universe and its Stars
5	Earth and the Solar System
<b>Big Idea:</b> Air has properties that effect seasonal changes and patterns.	
<b>Unit Essential Questions:</b> <ul style="list-style-type: none"> <li>• What can air do?</li> <li>• How can we monitor and predict the weather to identify patterns?</li> <li>• How can we find evidence of moving air?</li> <li>• How does the Moon change over time?</li> </ul>	<b>Unit Enduring Understandings:</b> <ul style="list-style-type: none"> <li>• Air takes up space, can be compressed and push objects around with pressure.</li> <li>• Through various instruments, temperature, sunrise, sunset, and cloud types can be tracked and used to predict future weather patterns.</li> <li>• Wind vanes, bubbles, and kites can demonstrate the strength, direction, and speed of wind.</li> <li>• Using a calendar, the phases and patterns of the moon will be studied.</li> </ul>

## Unit Learning Targets

*Students will develop an understanding that...*

- Air is a gas and is all around us.
- Air is matter and takes up space.
- Air makes objects move.
- Air moves from place to place. Moving air is wind.
- Air resistance affects how things move.
- Air can be compressed.
- The pressure from compressed air can move things, including water.
- Weather describes conditions in the air outside.
- Temperature describes how hot or cold the air is. Temperature is measured with a thermometer.
- Clouds are made of liquid water drops that fall to Earth as rain. Wind moves clouds in the sky.
- The Sun and Moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night.
- Wind is moving air.
- Meteorologists use wind scales (models) to describe the strength of the wind
- Meteorologists use anemometers to measure the speed of the wind.
- A wind vane points in the direction the wind is coming from.
- Wind lifts kites up into the sky.
- Daily changes in temperature and weather type can be observed, compared, and predicted over a month.
- The Sun and Moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night.
- Each season has a typical weather pattern that can be observed, compared, and predicted. The number of hours of daylight changes predictably through the seasons.

## Evidence of Learning

**Summative Assessment:** Investigation Checks

### **Formative Assessments:**

- Air and weather journal- the recordings are differentiated for various levels based on the responses.
- Benchmark- Students present a meteorologist report that explains what air can do with examples. Students investigate what meteorologists do as a career. Rubric will be used for assessment.

## Lesson Plans

### *Activities*

### *Timeframe*

- Students work with a set of objects to see how objects can be moved by and through air.
- Students construct and observe parachutes dropping through air. They think about how air slows the descent of the parachute. They design and test a parachute to land a cargo container gently without spilling the contents.
- Students use syringes to investigate air. They discover that air can be compressed and that air under pressure can push objects around.
- Students put together tubes, a bottle, water, a rubber stopper, and two syringes to create a system. They add water and use air pressure to push the water around the system
- Students set up a balloon-rocket system and find out how far the air in the balloon will propel the system along a flight line.
- Students share what they know about weather and how it relates to air. Rotating class meteorologists begin recording daily weather observations on a class calendar. Students use symbols to indicate five basic types of weather.
- Students learn to use a thermometer and take turns measuring and recording the temperature. They construct a model thermometer and practice reading various temperatures. They monitor sunrise and sunset and record the total number of daylight hours each day. They collect data on temperature changes during the day.
- Students observe and compare several types of clouds and discuss how they move across the sky. The class discusses the kinds of clouds that bring rain or snow. Students can use a rain gauge to measure rain or snowfall.
- Students discuss their observations of the day and night sky, and begin to make systematic observations of the Moon. The observations will continue during the daytime and nighttime for 4 weeks.
- Students use bubble wands to blow bubbles outdoors. They investigate how the air moves bubbles in a variety

8 weeks

<p>of locations around the school building.</p> <ul style="list-style-type: none"> <li>• Students go outdoors to feel and observe the wind. They are introduced to a descriptive wind scale (an adaptation of the Beaufort scale) and an anemometer, an instrument used to measure wind speed.</li> <li>• Students construct a pinwheel and observe how it operates when they blow on it, move it through air, and take it outdoors in the wind. They compare the action of the pinwheels to the class anemometer.</li> <li>• Students learn about wind vanes, instruments used to indicate wind direction. Students compare the movement of the wind vanes to that of bubbles and clouds.</li> <li>• Students construct kites. They use the anemometer and wind vane to determine the best location and direction for flying kites.</li> <li>• Students organize and graph the class weather data recorded over a period of 4 weeks. The class can continue recording the weather on the calendar and then graph the following month. Students also revisit the Moon calendar and look for patterns over the month.</li> <li>• The class looks at the amount of daylight on the same day of each month over the year. Students describe the pattern they observe and predict the number of hours of daylight on their birthday that year. They compare the actual hours to their predicted number of hours.</li> <li>• The class moves from recording weather data on a calendar to creating seasonal graphs of the weather and temperature. Each season, the class creates new graphs and compares them with graphs from the preceding seasons.</li> <li>• Climate change activity to see the effects of the Sun.  <a href="https://climatekids.nasa.gov/smores/">https://climatekids.nasa.gov/smores/</a></li> </ul>	
<i>Teacher Resources</i>	<i>Teacher Note</i>
<ul style="list-style-type: none"> <li>• FOSS kit materials <ul style="list-style-type: none"> <li>•Technology Tools</li> <li>-Google Classroom</li> <li>-Seesaw</li> <li>-BrainPOP</li> <li>-Mystery Science</li> <li>-Flip Grid</li> </ul> </li> </ul>	

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## **Differentiating Instruction: Students with Disabilities, English Language Learners, and Gifted & Talented Students**

Examples of Strategies and Practices that Support Students with Disabilities:

- Use of visual and multisensory formats
- Use of assisted technology
- Use of prompts
- Modification of content and student products
- Testing accommodations
- Authentic assessments

Examples of Strategies and Practices that Support Gifted & Talented Students:

- Adjusting the pace of lessons
- Curriculum compacting
- Inquiry-based instruction
- Independent study
- Higher-order thinking skills
- Interest-based content
- Student-driven instruction
- Real-world problems and scenarios

Examples of Strategies and Practices that Support English Language Learners:

- Pre-teaching of vocabulary and concepts
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Teacher modeling
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding
- Word walls
- Sentence frames
- Think-pair-share
- Cooperative learning groups

# Science- First Grade Life Science- Insects and Plants

<b>Unit title:</b> Insects and Plants	
<b>Unit summary:</b> Students will observe the different life cycles of plants and insects.	
<b>Primary interdisciplinary connections:</b> ELA- RL.1.1; RL.1.2.1; RL.1.10; W.1.7; W.1.8; W.2.6; W.2.8; SL.2.5 Mathematics- 1.NBT.B.3; 1.NBT.C.4; 1.NBT.C.5; 1.NBT.C.6; MP.2; MP.5; 1.MD.A.1-2; 2.MD.D.10	
<b>Career Readiness, Life Literacies, and Key Skills:</b> 9.1.2.CR.1-2; 9.1.2. FI.1; 9.1.2.FP.1-3; 9.1.2.PB.1-2; 9.1.2.RM.1; 9.1.2.CAP.1-4; 9.4.2.CI.1-2; 9.4.2.CT.1-3; 9.4.2.DC.1-7; 9.4.2.GCA:1; 9.4.2.IML.1-4; 9.4.2.TL.1-7	
<b>Learning Targets</b>	
<b>NJSLS Standards:</b> 1-LS1-1; 1-LS1.A-B; 1-LS1.D; 1-LS1-2; 1-LS3-1; 1-LS3.A-B; K-2-ETS1-3; K-2-ETS1.A-C	
<b>Computer Science and Design Thinking Standards:</b> 8.1.2.CS.1-3; 8.1.5.NI.1-4; 8.1.2.IC.1; 8.1.2.DA.1-4; 8.1.2.AP.1-6; 8.2.2.ED.1-4; 8.2.2.ITH.1-5; 8.2.2.NT.1-2; 8.2.2.ETW.1-4; 8.2.2.EC.1;	
<b>Content Statements:</b>	
1	Structure and Function
2	Growth and Development of Organisms
3	Inheritance of Traits
4	Variation of Traits
5	Interdependent Relationships to Ecosystems
6	Biodiversity and Humans
7	Defining and Delineating Engineering Problems
8	Developing Possible Solutions
9	Optimizing Design Solution
<b>Big Idea: Insects and plants go through life cycles.</b>	
<b>Unit Essential Questions:</b> <ul style="list-style-type: none"> <li>• What do insects need to live?</li> <li>• What body parts do insects have?</li> <li>• What are the stages of an insect’s life?</li> <li>• What do plants need to live?</li> </ul>	<b>Unit Enduring Understandings:</b> <ul style="list-style-type: none"> <li>• Insects need food, space, water, and air to survive.</li> <li>• Insects have a head, abdomen, and thorax.</li> <li>• The life stages of an insect are egg, larva, pupa, and adult.</li> <li>• Plants need water, light, and soil to survive</li> </ul>

<ul style="list-style-type: none"> <li>• What are the developmental stages of plants?</li> <li>• How do animals interact with plants?</li> </ul>	<ul style="list-style-type: none"> <li>• The stages of a plant’s life cycle are germination, growth, and flowering.</li> <li>• Insects and birds are responsible for pollinating plants.</li> </ul>
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**Unit Learning Targets**

*Students will develop an understanding that...*

- Insects need food, space, water, and air.
- Insects have the following body parts; 6 legs, head, abdomen, antennae, eyes, and thorax
- Insects go through the following life stages- egg, larva, pupa, and adult
- Plants need soil, water, and light.
- Plants change over time.
- Specific environmental conditions are advantageous for pollination of plants.
- Insects and birds are crucial to the survival of plants.

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<b>Evidence of Learning</b>
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**Summative Assessment:** Investigate Check-Ins

**Formative Assessments:**

- Insect journal -students can respond in a variety of ways to accommodate varying abilities. Can be made on a digital platform.
- Plant journal- students can respond in a variety of ways to accommodate varying abilities. Can be made on a digital platform.
- Students create their own insect. Students need to include all body parts and a “how-to” for taking care of the insect. Can be made on a digital platform.
- Students identify what entomologists do and evaluate if that is a career to pursue.

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<b>Lesson Plans</b>
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<i>Activities</i>	<i>Timeframe</i>
<ul style="list-style-type: none"> <li>• Students begin their study of insects. They are introduced to mealworms and observe their structures and behaviors. Each pair of students monitors several mealworms over time and attends to the insects’ needs—food, water, space, and air.</li> <li>• Mini-sessions are conducted whenever students observe</li> </ul>	8-10 weeks

a change in their mealworms. They discuss molting, pupation, adults, and mating. They learn the three parts of an insect body: head, thorax, and abdomen. Students observe, compare, and draw the mealworms as they progress through their stages.

- Students discover tiny larvae in the class mealworm habitat several weeks after adults appear.
- Students plant rapid-cycling brassica seeds in soil, water the seeds, and place them under a lamp where they will receive continuous light.
- Students observe germination, growth, and flowering of the brassica plants. They monitor and record changes in the plants over time. They discuss environmental conditions that promote germination and gain awareness of flower pollination. Students view videos showing what plants need to grow, the different stages of development of plants, and the importance of insects in plant pollination.
- Students observe brassica flowers change and become seedpods. They harvest the seeds, getting an introduction to the concept of life cycle in plants. Students read about the importance of fruit, seeds, and flowers for a plant's life cycle.
- Students find outdoor locations where young plants can grow and thrive. Students plant marigold seeds and seedlings outdoors and observe them over time. They look for flowers, seeds, and seedpods in the schoolyard.
- Students are introduced to a painted lady caterpillar (larval stage) and observe it closely to determine its structures. They monitor its behaviors—eating, moving, molting—until it pupates into a chrysalis.
- The painted lady pupae are transferred to a net cage to prepare for the emergence of adult painted ladies.
- Students observe butterflies feeding at a sugar water fountain, watch for mating, and search for eggs. With luck, some eggs will hatch, and tiny larvae will emerge to start the cycle again. Students read an article about the life cycles of a fish, frog, duck, and mouse.
- Students review a video describing the important role that insects and hummingbirds play in pollinating flowers. Students search the schoolyard for plants with pollen-rich flowers. While outdoors, students may observe butterflies and other insects engaged in pollination. Students design model pollinators to test the shape and materials that will collect pollen. Creation is

done through a digital platform.	
<i>Teacher Resources</i>	<i>Teacher Note</i>
<ul style="list-style-type: none"> <li>• FOSS kit</li> <li>• Technology Tools <ul style="list-style-type: none"> <li>-Google Classroom</li> <li>-Seesaw</li> <li>-BrainPOP</li> <li>-Mystery Science</li> <li>-Flip Grid</li> </ul> </li> </ul>	

**Differentiating Instruction:  
Students with Disabilities, English Language Learners,  
and Gifted & Talented Students**

Examples of Strategies and Practices that Support Students with Disabilities:

- Use of visual and multisensory formats
- Use of assisted technology
- Use of prompts
- Modification of content and student products
- Testing accommodations
- Authentic assessments

Examples of Strategies and Practices that Support Gifted & Talented Students:

- Adjusting the pace of lessons
- Curriculum compacting
- Inquiry-based instruction
- Independent study
- Higher-order thinking skills
- Interest-based content
- Student-driven instruction
- Real-world problems and scenarios

Examples of Strategies and Practices that Support English Language Learners:

- Pre-teaching of vocabulary and concepts
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Teacher modeling
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding
- Word walls
- Sentence frames
- Think-pair-share
- Cooperative learning groups



# Science- First Grade Life Science- Sound and Light

<b>Unit title:</b> Sound and Light	
<b>Unit summary:</b> Students will use simple tools and musical instruments to observe and manipulate sound and light.	
<b>Primary interdisciplinary connections:</b> Mathematics- MP.2; MP.4; MP.5; 1.OA.A.1; 1.MD.C.4; 2.MD.D.10	
<b>Career Readiness, Life Literacies, and Key Skills:</b> 9.1.2.CR.1-2; 9.1.2. FI.1; 9.1.2.FP.1-3; 9.1.2.PB.1-2; 9.1.2.RM.1; 9.1.2.CAP.1-4; 9.4.2.CI.1-2; 9.4.2.CT.1-3; 9.4.2.DC.1-7; 9.4.2.GCA:1; 9.4.2.IML.1-4; 9.4.2.TL.1-7	
<b>Learning Targets</b>	
<b>NJSLS Standards:</b> 1-PS4-1; 1-PS4-2; 1-PS4-3; 1-PS4-4; 1-LS1-1; K-2-ETS1-1; K-2-ETS1-2; K-2-ETS1-3	
<b>Computer Science and Design Thinking Standards:</b> 8.1.2.CS.1-3; 8.1.5.NI.1-4; 8.1.2.IC.1; 8.1.2.DA.1-4; 8.1.2.AP.1-6; 8.2.2.ED.1-4; 8.2.2.ITH.1-5; 8.2.2.NT.1-2; 8.2.2.ETW.1-4; 8.2.2.EC.1;	
<b>Content Statements:</b>	
1	Wave Properties
2	Electromagnetic Radiation
3	Structure and Function
4	Defining and Delineating Engineering Problems
5	Developing Possible Solutions
6	Optimizing Design Solution
<b>Big Idea: Vibrations and sound are interrelated and objects have an effect on light.</b>	
<p><b>Unit Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• Where does sound come from?</li> <li>• How does sound travel?</li> <li>• How does light travel?</li> <li>• How can you change shadows and reflections?</li> <li>• How is sound and light used to communicate?</li> </ul>	<p><b>Unit Enduring Understandings:</b></p> <ul style="list-style-type: none"> <li>• Sound comes from vibrating objects.</li> <li>• Through sources and receivers, sound travels with a changing pitch and volume.</li> <li>• Through the sources and receivers, light travels.</li> <li>• When different materials with different properties are placed in front of a beam of light, shadows and reflections occur.</li> <li>• By using a home-made telephone system and mirrors, we can communicate with others.</li> </ul>

## Unit Learning Targets

*Students will develop an understanding that...*

- Sounds always come from objects that are vibrating, and that vibrating objects always make sound.
- Objects have an effect on sound.
- Sounds derive from human and natural sources
- There is a relationship between the amount of energy used to produce a sound and the volume of the sound.
- There is a relationship between pitch and length for sound.
- Sound can be used for communication.
- Shadows change shape due to the relation of an object to light.
- The Sun is a natural source of light that can create shadows.
- Opaque materials block the light.
- Transparent materials allow light to travel through the materials.
- Translucent objects allow some of the light to travel through.
- The darkest shadows are made by objects that are opaque, whereas translucent objects create lighter shadows.
- Mirrors can be used to direct light to different locations.
- Mirrors can be used to see objects in different locations.
- Animal eyes have varying degrees of seeing in the dark.

## Evidence of Learning

**Summative Assessment:** Investigation Checks

### **Formative Assessments:**

- Sound and Light Journal- students can respond in a variety of ways to accommodate varying abilities.
- Students design and build a device that uses light or sound to communicate over a distance. Present it via a digital platform.

## Lesson Plans

<i>Activities</i>	<i>Timeframe</i>
<ul style="list-style-type: none"><li>• Students discuss common animals, machines, and objects that make sound. They use cups with rubber bands and flat sticks to produce sound. They focus on the source of the sound and find that it is vibrating. Students explore a table fiddle to confirm their</li></ul>	8 weeks



observations. Sound can be stopped by stopping the object's vibration.

- Students practice sound discrimination by listening to the sounds that objects make when dropped. They work with a partner to identify objects by the properties of their sound. They investigate how tuning forks and a tone generator make sounds and observe the effect of those sounds on other objects.
- Students go outside and sit quietly to listen for sounds in the environment. Some sounds are the result of human activities, and some have natural sources. Students attempt to determine the sound source for each environmental sound they identify.
- Students investigate two systems: the one-string guitar and the xylophone. They confirm that sounds come from objects that are vibrating, and that vibrating objects always make sound. Sound can be stopped by stopping the object's vibration. The added concept is that sounds can differ in volume over a range from soft to loud.
- Students observe the volume and pitch of the table fiddle. They use the one-string guitar and xylophone to change the pitch of the sound. Students record their understanding of the relationship between length and pitch. They apply their understanding of pitch and volume to a kalimba.
- Students use a spoon-gong system to review their understanding of how to produce sound and to develop a simple model of how sound travels.
- Students apply their knowledge of how sounds travel to make a device to send whisper messages over a distance. They modify two spoon-gong systems to make a device to send a message from one end of a string to the other. They improve on the device to make a better string telephone.
- Students use a flashlight as a light source to find out what happens when you block light with an object. They determine how to position the light source relative to the object and observe the resulting shape and size of the shadow. They observe what happens to the shadow when the object gets closer to and farther away from the light source.
- Students continue to explore how to make shadows, this time using a natural source of light, the Sun. They go outside to look for shadows and determine what objects are creating those shadows. They work as individuals

<p>and teams to meet shadow challenges.</p> <ul style="list-style-type: none"> <li>• Students use objects made of different materials to see what happens when they place the objects over the lens of a flashlight.</li> <li>• Students are introduced to a mirror as an opaque object with a reflective surface. They use a flashlight and mirror to redirect a beam of light from their desks to the ceiling. Students go outside and use the mirror to redirect sunlight onto a wall.</li> <li>• Students explore how they can use a mirror to see things behind them, to the side of them, and on their face. They use a mirror to study and make a drawing of their own eyes. Students discuss photographs that have images reflected from smooth surfaces such as mirrors, glass, and water.</li> <li>• Students investigate what they can see in the dark, using a small closed box. On the back wall of the box is a card with four images of different shapes and colors. At first, students cannot see anything. As they gradually allow more light into the box, students find that they can first detect shapes and then color. They read about the process of seeing and compare a variety of animal eyes.</li> <li>• Students review how to redirect light using one mirror. They design a way to redirect light with two mirrors. Students explore ways to communicate long distances, using light.</li> </ul>	
<i>Teacher Resources</i>	<i>Teacher Note</i>
<ul style="list-style-type: none"> <li>• FOSS kits</li> <li>• Technology Tools <ul style="list-style-type: none"> <li>-Google Classroom</li> <li>-Seesaw</li> <li>-BrainPOP</li> <li>-Mystery Science</li> <li>-Flip Grid</li> </ul> </li> </ul>	

**Differentiating Instruction:  
Students with Disabilities, English Language Learners,  
and Gifted & Talented Students**

Examples of Strategies and Practices that Support Students with Disabilities:

- Use of visual and multisensory formats
- Use of assisted technology
- Use of prompts
- Modification of content and student products
- Testing accommodations
- Authentic assessments

Examples of Strategies and Practices that Support Gifted & Talented Students:

- Adjusting the pace of lessons
- Curriculum compacting
- Inquiry-based instruction
- Independent study
- Higher-order thinking skills
- Interest-based content
- Student-driven instruction
- Real-world problems and scenarios

Examples of Strategies and Practices that Support English Language Learners:

- Pre-teaching of vocabulary and concepts
- Visual learning, including graphic organizers
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- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding
- Word walls
- Sentence frames
- Think-pair-share
- Cooperative learning groups