Science Curriculum Committee	
Name	**Position**
Christine Moran	*Director of Curriculum & Instruction*
Brooke Geller	*Supervisor of Innovation, Assessment, and Special Projects*
Adrianna Tavarez	*Grade 1 Teacher*

Introduction

The River Edge School District is committed to providing a rich and rigorous curriculum so that all students can achieve at the highest levels, while developing as responsible citizens, who respect individuality. Our curriculum is designed to help students develop skills and learn core content through active, meaningful experiences that will lead to lasting understanding and the ability to apply and use knowledge in new contexts.

Our curriculum is aligned to the New Jersey Student Learning Standards. Each area of the curriculum contains identified standards for learning. These standards help to guide classroom instruction and assessment. The standards articulate the skills and knowledge we believe all students need in order to become educated, responsible, and productive citizens.

The River Edge curriculum is revised regularly to ensure that the curriculum is aligned with identified New Jersey academic standards. In addition, we seek to integrate college and career readiness standards. Practical and relevant real-life experiences are integrated into our curriculum and learning environment. We use New Jersey's Social Emotional Competencies to ensure our students are healthy and well, and we give our students opportunities to use cutting edge technology in order to prepare them for the future. Our students leave our schools well prepared for Middle School, High School, and beyond.

Born On Date: June 2026
Revised & Readopted Date: August 2026

Grade Level Science PACING	
Unit	**Pacing**
Unit 1: Waves: Light	September - October
Unit 2: Waves: Sound	November - December
Unit 3: Space: Sky Patterns	January - March
Unit 4: Animal and Plant Traits	April - June

Unit 1: Waves: Light	
1-PS4-2: Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Constructing Explanations and Designing Solutions** ● Constructing explanations and designing solutions includes the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. ● Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.
Disciplinary Core Ideas	**PS4.B: Electromagnetic Radiation** ● Objects can be seen if light is available to illuminate them or if they give off their own light.
Crosscutting Concepts	**Cause and Effect** ● Simple tests can be designed to gather evidence to support or refute student ideas about causes.
1-PS4-3: Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Planning and Carrying Out Investigations** ● Planning and carrying out investigations to answer questions or test solutions to problems includes simple investigations, based on fair tests, which provide data to support explanations or design solutions. ● Plan and conduct investigations collaboratively to produce evidence to answer a question.
Disciplinary Core Ideas	**PS4.B: Electromagnetic Radiation** ● Some materials allow light to pass through them, others allow only some light through, and others block all the light and create a dark shadow on any surface beyond them (i.e., on the other side from the light source), where the light cannot reach. Mirrors and prisms can be used to redirect a light beam. (Boundary: The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to discuss the speed of light.)
Crosscutting	**Cause and Effect**

Concepts	● Simple tests can be designed to gather evidence to support or refute student ideas about causes.

Unit Summary (Enduring Understandings)

In this unit, students explore the relationship between light and sight through hands-on observations and investigations. They discover that objects can only be seen when light is present by making observations in both light and dark environments and using evidence to explain their thinking. Students investigate different sources of light and develop an understanding that light must illuminate an object before it can be seen.

Students plan and conduct investigations to determine how different materials affect the path of a beam of light. By testing objects made of a variety of materials, they compare how light passes through, is blocked by, or is changed by each material. Throughout the unit, students ask questions, make predictions, collect evidence, and communicate their findings while developing skills in scientific inquiry, observation, and collaboration through engaging, hands-on learning experiences.

Essential Questions

- How can we read under covers when it is dark?
- How does light help us understand the world around us?
- What happens when light shines on different materials?
- How can we investigate the properties of light?
- How do scientists use observations and evidence to answer questions?
- How can we share what we discover through scientific investigations?

Lessons and Objectives

Lesson Title	Objective(s)
Reading Under Covers (OpenSciEd)	● Observe that some cover materials make it easier to see than others. ● Ask questions about why some materials let in more light than others.
Light (Exploring Science)	● Identify that light makes it possible to see objects.

	• Classify the sun as an object that gives off its own light.
Where Does Light Come From? (OpenSciEd)	• Identify objects that are sources of light. • Observe that light comes from natural and human-made sources.
Light to See (Exploring Science)	• Recognize that objects that give off light can be used to help us see.
Investigate: Light and Dark (Exploring Science)	• Observe evidence that objects can be seen only where there is light. • Use their observations to construct an evidence-based account that objects can be seen only when illuminated.
Can We See Without Light? (OpenSciEd)	• Observe that objects in darkness can only be seen when illuminated. • Use evidence to explain why light is needed to see objects.
Part 1: Shining Through (Exploring Science) Part 2: Blocking Some Light (Exploring Science) Part 3: Blocking All Light (Exploring Science)	• Define *clear* as the ability of a material to allow light to pass through it. • Classify some materials as clear. • Describe materials that allow only some light to pass through them. • Describe materials that block all light. • Define shadow.
Testing Materials (OpenSciEd)	• Classify materials as transparent, translucent, or opaque. • Compare how different materials affect the amount of light that passes through them.
Reflecting Light (Exploring Science)	• Describe how some materials redirect a beam of light.
Reflecting Light with Mirrors (OpenSciEd)	• Observe that mirrors and other reflective materials change the direction of light. • Describe how reflected light can brighten dark spaces.

Plan and Investigate (Exploring Science)	● Work with a group to plan and conduct an investigation to determine the effect of pacing objects made with different materials in the path of a beam of light. ● Explain their results and conclusions to others.
Science Careers: Photographer (Exploring Science)	● Relate a photographer's job to the science of light.
Think Like an Engineer: Design a Device (Exploring Science)	● Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. ● Test and revise the prototype device based on results and feedback. ● Use the device to explain how people can use sound or light to communicate.

Differentiation

Multilingual Learners	● Pre-Unit Checks. ● Small group instruction. ● Hands-on science investigations. ● Teacher modeling and think-alouds. ● Preview science vocabulary using visuals (e.g., light, light source, illuminate, transparent, translucent, opaque, shadow, reflect, beam). ● Use picture vocabulary cards, labeled diagrams, photographs, and real objects to introduce new concepts. ● Ask yes/no and either/or questions to check for understanding. ○ *Can you see objects in a completely dark room?* ○ *Does light help us see objects?* ○ *Does glass let light pass through?* ○ *Does cardboard block light?* ● Provide sentence frames, such as:

	○ "I observed _____." ○ "The light passed through the _____." ○ "The _____ blocked the light." ○ "I predict _____ because _____." ○ "I can see the object because _____." ● Help students complete sentence stems describing observations and investigations. ● Post anchor charts with visuals showing light sources, transparent, translucent, opaque materials, and shadows. ● Use gestures, demonstrations, and repeated modeling throughout investigations. ● Repeat directions and have students restate investigation procedures before beginning. ● Pair students with language buddies or peer partners during investigations. ● Encourage oral discussions before written responses. ● Provide bilingual vocabulary supports or picture dictionaries for families when appropriate. ● Use iPads or translation tools when appropriate. ● Collaborate with the ESL Specialist.
Special Education	● Pre-Unit Checks. ● Small group instruction. ● Teacher modeling and guided practice. ● Hands-on investigations using flashlights and a variety of classroom materials. ● Modification of recording sheets and workbook pages as needed. ● Break investigations into smaller, manageable steps with visual supports. ● Provide visual schedules and picture-supported directions. ● Sort objects into transparent, translucent, and opaque categories using real materials. ● Test a variety of classroom objects to determine whether light passes through, is blocked, or is changed. ● Use graphic organizers to compare observations from different materials. ● Provide science vocabulary word banks during investigations and assessments. ● Allow students to demonstrate understanding through drawings, verbal responses, models, or hands-on activities. ● Provide repeated opportunities to investigate light using different materials. ● Extended time and think time. ● Prompting and reassurance as needed. ● Preferential seating.

	● Check frequently for understanding. ● Peer models and partner support. ● Sensory or movement breaks with timers as needed.
At-Risk	● Pre-Unit Checks. ● Small group instruction. ● Hands-on science investigations. ● Modification of recording sheets as needed. ● Preview science vocabulary before each lesson. ● Connect concepts to familiar experiences such as flashlights, windows, sunglasses, mirrors, and shadows. ● Use teacher think-alouds to model observations and predictions. ● Sort classroom objects by whether they allow light to pass through or block light. ● Investigate how different materials affect a beam of light using flashlights and classroom objects. ● Use graphic organizers to record predictions and observations. ● Reinforce concepts through repeated investigations using different materials. ● Provide partially completed recording sheets and observation journals. ● Use anchor charts illustrating transparent, translucent, opaque materials, and light sources. ● Ask guiding questions throughout investigations to support scientific thinking. ● Pair students with supportive peers during investigations. ● Preferential seating. ● Frequent teacher check-ins. ● Positive reinforcement for participation and perseverance. ● Targeted intervention or additional practice as needed.
Gifted and Talented	● Pre-Unit Checks. ● Independent and small-group enrichment opportunities. ● Design and carry out additional investigations using different light sources and materials. ● Compare how transparent, translucent, and opaque materials affect light and explain observations using evidence. ● Investigate how shadows change when the position of the light source changes. ● Design a simple object that blocks, redirects, or allows light to pass through for a specific purpose. ● Predict investigation outcomes and justify predictions using prior knowledge and evidence. ● Create detailed scientific diagrams with labels and written explanations.

	● Research real-world uses of transparent, translucent, and opaque materials. ● Compare natural and artificial light sources. ● Develop and investigate their own scientific questions about light. ● Present investigation findings using diagrams, models, or presentations. ● Challenge classmates with higher-level questions about light and materials.
504	● Pre-Unit Checks. ● Small group instruction as appropriate. ● Hands-on science investigations. ● Modification of recording sheets when appropriate. ● Provide visual vocabulary cards and picture supports. ● Provide clear, concise, and repeated directions verbally and visually. ● Break investigations into smaller, manageable steps. ● Sort and test classroom materials using flashlights and visual recording charts. ● Allow extended time for investigations, recording observations, and written responses. ● Offer frequent teacher check-ins throughout investigations. ● Provide preferential seating to maximize participation in demonstrations and discussions. ● Reduce distractions during independent work. ● Allow flexible methods to demonstrate understanding (oral responses, drawings, models, written work, or demonstrations). ● Prompt students during investigations as needed. ● Use positive reinforcement and individualized encouragement. ● Provide sensory or movement breaks as needed. ● Allow the use of assistive technology, Chromebook accessibility features, or adaptive tools when specified in student accommodations. ● Check frequently for understanding.

Evidence of Learning - Assessment

Formative	Summative	Benchmark	Alternative

● Wrap It Up! Questions ● OpenSciEd Handouts ● Teacher observation during investigations with light and different materials. ● Class discussions/Partner Talk explaining why objects can or cannot be seen when light is present. ● Science Notebook activities to record predictions, observations, and evidence from light investigations. ● Performance Expectation Activities: Students investigate how different materials affect a beam of light and communicate findings using drawings, labels, or oral explanations. ● Exit tickets (draw and label one object that allows light to pass through and one object that blocks light). ● Teacher-created rubrics to assess investigation skills, scientific	● Unit 1 Assessment ● OpenSciEd Assessments ● Performance task in which students identify whether materials are transparent, translucent, opaque, or reflective and explain how each affects light using evidence from investigations. ● Teacher rubric assessing students' ability to explain that objects can only be seen when illuminated and describe how different materials affect a beam of light.	● Grade 1 Science Benchmark	● Students investigate classroom materials using a flashlight, sort them into transparent, translucent, opaque, and reflective categories, and explain their reasoning through drawings, labels, or oral responses. ● Students predict which objects will cast a shadow and which will let light through. They do this by testing their predictions with a flashlight and sketching and labeling the shadow shape next to a right/wrong mark on a predictions chart. ● Students create a model or investigation booklet demonstrating how light interacts with different materials, including labeled diagrams and evidence-based conclusions.

reasoning, and evidence-based explanations.			

Core Instructional Materials

Print and Digital Resources	Miscellaneous Resources

• National Geographic: Exploring Science
• National Geographic Leveled Readers
• Open SciEd
  ○ Unit 1 Storyline
  ○ Unit 1 Teacher Edition
  ○ Unit 1 Student Bundle
  ○ Waves: Light Unit Webinar
  ○ Unit 1
  ■ Lesson 1
  ■ Lesson 2
  ■ Lesson 3
  ■ Lesson 4
  ■ Lesson 5
  ■ Lesson 6
  ● Can We See in Total Darkness? Video
  ■ Lesson 7
  ■ Lesson 8
  ■ Lesson 9
  ■ Lesson 10
• BrainPop
  ○ Light
  ○ Making Observations
	• Unit 1 Resource Folder

○ Making and Testing Predictions	

Interdisciplinary Connections

English Language Arts - Reading
- **RI.CI.1.2** Determine main topic and retell a series of key details in informational texts (e.g., who, what, where, when, why, how).
- **RI.CR.1.1** Ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).
- **RI.CT.1.8** Identify similarities in and differences between two informational texts on the same topic (e.g., characters, experiences, illustrations, descriptions, or procedures).

English Language Arts - Writing
- **W.WR.1.5** With prompting and support, generate questions through shared research about a topic and determine possible sources to obtain information on that topic.

English Language Arts - Speaking and Listening
- **SL.II.1.2** Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

Math
- **1.DL.A.1** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another
- **MP 5** Use appropriate tools strategically.

Career Readiness, Life Literacies, and Key Skills

NJSLS	Practices
● **9.2.2.CAP.1.** Make a list of different types of jobs and describe the skills associated with each job. ● **9.2.2.CAP.2.** Explain why employers are willing to pay individuals to work. ● **9.4.2.CI.1.** Demonstrate openness to new ideas and	● **CLKSP4** Demonstrates creativity and innovation. ● **CLKSP5** Utilize critical thinking to make sense of problems and persevere in solving them. ● **CLKSP6** Model integrity, ethical leadership and effective management.

perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2). ● **9.4.2.CI.2** Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a). ● **9.4.2.CT.1** Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2). ● **9.4.2.CT.2** Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3). ● **9.4.2.CT.3** Use a variety of types of thinking to solve problems (e.g., inductive, deductive). ● **9.4.2.DC.7** Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).	

Social Emotional Learning Competencies

Self-Awareness: ability to recognize one's emotions and know one's strengths and limitations	Connections ● Writing a journal entry to reflect on thoughts and ideas ● Regular check-ins to share feelings (Oral, Thumbs Up, Thumbs Down, Emojis, etc.) ● Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
Self-Management: ability to regulate and control one's emotions and behaviors, particularly in stressful situations	Connections ● Using zones of regulation chart to monitor emotions ● Take a break with deep breathing to focus
Social Awareness: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one's actions influence and	Connections ● Writing a journal entry to reflect on understanding of key concepts

are influenced by others	● Regular check-ins to share feelings (Oral, Thumbs Up, Thumbs Down, Emojis, etc.) ● Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
Relationship Skills: refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts	Connections ● Engaging in collaborative discussions ● Incentives for individual students and small groups
Responsible Decision-Making: refers to the ability to use multiple pieces of information to make ethical and responsible decisions	Connections ● Class rules and routines ● Engaging in collaborative discussions ● Following directions

Computer Science and Design Thinking

Domain	Core Idea	Performance Expectation
Data & Analysis	Data can be used to make predictions about the world	8.1.2.DA.3: Identify and describe patterns in data visualizations 8.1.2.DA.4: Make predictions based on data using charts or graphs.
Algorithms & Programming	Complex tasks can be broken down into simpler instructions, some of which can be broken down even further.	8.1.2.AP.4: Break down a task into a sequence of steps.
Engineering Design	Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.	8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.

Interaction of Technology and Humans	Technology has changed the way people live and work. Various tools can improve daily tasks and quality of life.	8.2.2.ITH.5: Design a solution to a problem affecting the community in a collaborative team and explain the intended impact of the solution.

Unit 2: Waves: Sounds	
1-PS4-1: Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Planning and Carrying Out Investigations** ● Planning and carrying out investigations to answer questions or test solutions to problems includes simple investigations, based on fair tests, which provide data to support explanations or design solutions. ● Plan and conduct investigations collaboratively to produce evidence to answer a question. ***Connections to the Nature of Science*** **Scientific Investigations Use a Variety of Methods** ● Science investigations begin with a question. ● Scientists use different ways to study the world.
Disciplinary Core Ideas	**PS4.A: Wave Properties** ● Sound can make matter vibrate, and vibrating matter can make sound.
Crosscutting Concepts	**Cause and Effect** ● Simple tests can be designed to gather evidence to support or refute student ideas about causes.
1-PS4-4: Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**

Science and Engineering Practices	**Constructing Explanations and Designing Solutions** ● Constructing explanations and designing solutions includes the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. ● Use tools and materials provided to design a device that solves a specific problem.
Disciplinary Core Ideas	**PS4.C: Information Technologies and Instrumentation** ● People use their senses to learn about the world around them. Their eyes detect light, their ears detect sound, and they can feel vibrations by touch. People also use a variety of devices to communicate (send and receive information) over long distances. **ETS2.A. Interdependence of Science Engineering and Technology** ● Observations and measurements are used in engineering to help test and refine design ideas.
Crosscutting Concepts	***Connections to Engineering, Technology, and Applications of Science*** **Influence of Engineering, Technology, and Science, on Society and the Natural World** ● People depend on various technologies in their lives; human life would be very different without technology.
K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Asking Questions and Defining Problems** ● Asking questions and defining problems includes simple descriptive questions. ● Ask questions based on observations to find more information about the natural and/or designed world(s). ● Define a simple problem that can be solved through the development of a new or improved object or tool.
Disciplinary Core Ideas	**ETS1.A: Defining and Delimiting Engineering Problems** ● A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem.
Crosscutting Concepts	Intentionally left blank

K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Developing and Using Models** ● Modeling includes using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions. ● Develop a simple model based on evidence to represent a proposed object or tool.
Disciplinary Core Ideas	**ETS1.B: Developing Possible Solutions** ● Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. To design something complicated, one may need to break the problem into parts and attend to each part separately but must then bring the parts together to test the overall plan.
Crosscutting Concepts	**Structure and Function** ● The shape and stability of structures of natural and designed objects are related to their function(s).
K-2-ETS1-3: Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Analyzing and Interpreting Data** ● Analyzing data includes collecting, recording, and sharing observations. ● Analyze data from tests of an object or tool to determine if it works as intended.
Disciplinary Core Ideas	**ETS1.C: Optimizing the Design Solution** ● Because there is always more than one possible solution to a problem, it is useful to compare designs, test them, and discuss their strengths and weaknesses.
Crosscutting Concepts	Intentionally left blank

Unit Summary (Enduring Understandings)

In this unit, students investigate how sound is made and how it travels through hands-on observations and investigations. They explore how vibrating materials produce sound and gather evidence that sound can also cause other materials to vibrate. Through questioning, observing, and experimenting with a variety of objects and materials, students develop an understanding of the relationship between vibrations and sound while practicing scientific inquiry skills.

Students apply the engineering design process to solve a communication problem using light or sound. They ask questions, gather information about a real-world need, and design a simple device to communicate over a distance. Using sketches, drawings, or physical models, students explain how the shape of their design helps it function, then build, test, and compare different solutions. By analyzing the strengths and weaknesses of multiple designs, students refine their ideas while developing problem-solving, collaboration, and critical thinking skills.

Essential Questions

- What is sound, and how is it made?
- How can we communicate using objects that make sound?
- How can we investigate the properties of sound?
- How do scientists use observations and evidence to answer questions?
- How can engineers use science to solve problems?
- How can we design, test, and improve a solution?

Lessons and Objectives

Lesson Title	Objective(s)
How Do Sounds Help Us Communicate? (OpenSciEd)	• Recognize that people use sound to communicate messages. • Ask questions about how objects make and send sound signals.
Part 1: Vibrate and Make Sound (Exploring Science) Part 2: Sound (Exploring Science)	• Explain that vibrating matter can make sound. • Demonstrate that vibrating matter can make sound.

How Do Objects Make Sound? (OpenSciEd)	● Plan and conduct an investigation to observe that vibrating objects make sound. ● Use observations as evidence that vibrations produce sound.
Plan and Investigate (Exploring Science)	● Work with a partner to plan and conduct an investigation to provide evidence that vibrating materials make sound. ● Use evidence from their investigation to explain results to others.
Part 1: Sound Makes Things Vibrate (Exploring Science) Part 2: Vibration (Exploring Science)	● Explain that sound can make matter vibrate. ● Demonstrate that sound can make matter vibrate.
How Can We Know Sounds Travel and Are Received? (OpenSciEd)	● Observe that sound travels from one place to another. ● Gather evidence that sound can cause materials to vibrate.
Plan and Investigate (Exploring Science)	● Work with a partner to plan and conduct an investigation to provide evidence that sound can make materials vibrate. ● Use evidence from their investigation to explain results to others.
What Messages Do People Communicate Using Sound Signals? (OpenSciEd)	● Ask questions and gather information about a communication problem that can be solved with a sound device. ● Identify criteria for a successful design.
How Can We Plan Our Sound Signal Device? (OpenSciEd)	● Develop a sketch or drawing of a sound communication device. ● Explain how the design will solve the communication problem.
How Can We Build Our Sound Signal Device? (OpenSciEd)	● Build a sound communication device using selected materials. ● Follow a design plan to create a prototype.

How Well Does Our Sound Signal Device Work? (OpenSciEd)	● Test and compare sound communication devices. ● Analyze results and improve the design based on evidence.

Differentiation

Multilingual Learners	● Pre-Unit Checks. ● Small group instruction. ● Hands-on science and engineering investigations. ● Teacher modeling and think-alouds. ● Preview science vocabulary using visuals (e.g., sound, vibration, volume, communicate, engineer, design, test, improve, device, observe). ● Use picture vocabulary cards, labeled diagrams, photographs, and real objects to introduce new concepts. ● Ask yes/no and either/or questions to check for understanding. ○ *Can vibrations make sound?* ○ *Can sound make objects vibrate?* ○ *Does a drum vibrate when you hit it?* ○ *Can people use sound to communicate?* ● Provide sentence frames, such as: ○ "I observed _____." ○ "The _____ vibrated." ○ "The sound made the _____ move." ○ "My design works because _____." ○ "I would improve my design by _____." ● Help students complete sentence stems describing observations and engineering designs. ● Post anchor charts with visuals showing vibrations, sound sources, communication devices, and the engineering design process. ● Use gestures, demonstrations, and repeated modeling throughout investigations. ● Repeat directions and have students restate investigation procedures before beginning. ● Pair students with language buddies or peer partners during investigations.

	● Encourage oral discussions before written responses. ● Provide bilingual vocabulary supports or picture dictionaries for families when appropriate. ● Use iPads or translation tools when appropriate. ● Collaborate with the ESL Specialist.
Special Education	● Pre-Unit Checks. ● Small group instruction. ● Teacher modeling and guided practice. ● Hands-on investigations using classroom objects that produce vibrations and sound. ● Modification of recording sheets and workbook pages as needed. ● Break investigations and engineering activities into smaller, manageable steps with visual supports. ● Provide visual schedules and picture-supported directions. ● Explore vibrations by plucking rubber bands, striking drums, tapping tuning forks (or similar materials), and observing movement. ● Compare objects that produce different sounds using sorting and observation activities. ● Build and test simple communication devices (e.g., cup-and-string telephones) with teacher guidance. ● Use graphic organizers to compare observations, test results, and design improvements. ● Provide science vocabulary word banks during investigations and assessments. ● Allow students to demonstrate understanding through drawings, verbal responses, models, or hands-on activities. ● Extended time and think time. ● Prompting and reassurance as needed. ● Preferential seating. ● Check frequently for understanding. ● Peer models and partner support. ● Sensory or movement breaks with timers as needed.
At-Risk	● Pre-Unit Checks. ● Small group instruction. ● Hands-on science and engineering investigations. ● Modification of recording sheets as needed. ● Preview science vocabulary before each lesson. ● Connect concepts to familiar experiences such as musical instruments, clapping, doorbells, alarms, and voices.

	● Use teacher think-alouds to model observations and predictions. ● Investigate how different classroom objects produce sound through vibrations. ● Observe how sound can cause other materials to vibrate. ● Build and test a simple communication device using teacher guidance. ● Use graphic organizers to record predictions, observations, and design improvements. ● Reinforce concepts through repeated investigations using a variety of sound-producing materials. ● Provide partially completed recording sheets and observation journals. ● Use anchor charts illustrating vibrations, sound sources, and the engineering design process. ● Ask guiding questions throughout investigations to support scientific thinking. ● Pair students with supportive peers during investigations. ● Preferential seating. ● Frequent teacher check-ins. ● Positive reinforcement for participation and perseverance. ● Targeted intervention or additional practice as needed.
Gifted and Talented	● Pre-Unit Checks. ● Independent and small-group enrichment opportunities. ● Design and carry out additional investigations using a variety of materials to explore sound and vibrations. ● Compare how different materials produce different sounds and explain observations using evidence. ● Investigate how changing the size, length, or tension of an object changes the sound it produces. ● Design, build, test, and improve a communication device using sound or light. ● Develop multiple design solutions and compare their effectiveness. ● Predict investigation outcomes and justify predictions using prior knowledge and evidence. ● Create detailed scientific diagrams with labels and written explanations. ● Research real-world communication devices that use sound or light. ● Develop and investigate their own scientific questions about sound and vibrations. ● Present investigation findings and engineering designs using diagrams, models, or presentations. ● Challenge classmates with higher-level questions about sound, vibrations, and engineering design.
504	● Pre-Unit Checks. ● Small group instruction as appropriate. ● Hands-on science and engineering investigations. ● Modification of recording sheets when appropriate.

	● Provide visual vocabulary cards and picture supports. ● Provide clear, concise, and repeated directions verbally and visually. ● Break investigations and engineering activities into smaller, manageable steps. ● Build and test communication devices using visual directions and teacher support. ● Allow extended time for investigations, recording observations, engineering activities, and written responses. ● Offer frequent teacher check-ins throughout investigations. ● Provide preferential seating to maximize participation in demonstrations and discussions. ● Reduce distractions during independent work. ● Allow flexible methods to demonstrate understanding (oral responses, drawings, models, written work, or demonstrations). ● Prompt students during investigations and engineering activities as needed. ● Use positive reinforcement and individualized encouragement. ● Provide sensory or movement breaks as needed. ● Allow the use of assistive technology, Chromebook accessibility features, or adaptive tools when specified in student accommodations. ● Check frequently for understanding.

Evidence of Learning - Assessment

Formative	Summative	Benchmark	Alternative
● Wrap It Up! Questions ● OpenSciEd Handouts ● Teacher observation during investigations exploring how vibrations produce sound and how sound causes objects to vibrate. ● Class	● Unit 2 Assessment ● OpenSciEd Assessments ● Performance task in which students investigate how vibrations create sound or how sound causes objects to vibrate and	● Grade 1 Science Benchmark	● Students investigate a variety of classroom objects to determine which produce sound through vibrations and record their observations using drawings, labels, or oral explanations. ● Students observe how

Discussions/Partner Talk explaining the relationship between sound and vibrations using evidence from investigations. ● Science Notebook activities to record predictions, observations, and conclusions during sound investigations. ● Performance Expectation Activities: Investigate, Think Like a Scientist, Think Like an Engineer, and STEAM Projects focused on sound, vibrations, and designing communication devices. ● Exit tickets in which students draw and label an object that produces sound through vibrations or explain how sound caused another object to move. ● Teacher-created rubrics to assess scientific investigations, engineering design, collaboration, and evidence-based	explain their observations using evidence collected throughout the unit. ● Engineering design challenge in which students design, build, test, and explain a simple communication device that uses sound or light to communicate over a distance. ● Teacher rubric assessing students' understanding of sound, vibrations, scientific investigation, and the engineering design process.		sound causes another material to vibrate (e.g., paper, rice, water, or another classroom demonstration) and communicate their findings through a model, drawing, or verbal explanation. ● Students design and build a simple communication device (e.g., paper cup telephone, pattern of drumbeats, or light signal), test its effectiveness, and explain how it solves the communication problem using drawings, labels, or an oral presentation. ● Students create a science notebook or engineering portfolio documenting predictions, observations, design sketches, test results, and improvements made throughout the unit.

explanations.			

Core Instructional Materials

Print and Digital Resources	Miscellaneous Resources

• National Geographic: Exploring Science
• National Geographic Leveled Readers
• Open SciEd
  ○ Unit 2 Storyline
  ○ Unit 2 Teacher Edition
  ○ Unit 2 Student Bundle
  ○ Waves: Sound Unit Webinar
  ○ Unit 2
  ■ Lesson 1
  ● 1.2 Lesson 1 Mystery Sound
  ● 1.2 Lesson 1 The Clocktower Rings Again
  ■ Lesson 2
  ■ Lesson 3
  ■ Lesson 4
  ■ Lesson 5
  ■ Lesson 6
  ■ Lesson 7
  ■ Lesson 8
  ■ Lesson 9
  ■ Lesson 10
• BrainPop
  ○ Sound
  ○ Making Observations
  ○ Making and Testing Predictions
	• Unit 2 Resource Folder

Interdisciplinary Connections

English Language Arts - Reading

- **RI.CI.1.2** Determine main topic and retell a series of key details in informational texts (e.g., who, what, where, when, why, how).
- **RI.CR.1.1** Ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).
- **RI.CT.1.8** Identify similarities in and differences between two informational texts on the same topic (e.g., characters, experiences, illustrations, descriptions, or procedures).

English Language Arts - Writing

- **W.WR.1.5** With prompting and support, generate questions through shared research about a topic and determine possible sources to obtain information on that topic.

English Language Arts - Speaking and Listening

- **SL.II.1.2** Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

Math

- **1.DL.A.1** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another
- **MP 5** Use appropriate tools strategically.

Career Readiness, Life Literacies, and Key Skills

NJSLS	Practices
• **9.2.2.CAP.1.** Make a list of different types of jobs and describe the skills associated with each job. • **9.2.2.CAP.2.** Explain why employers are willing to pay individuals to work. • **9.4.2.CI.1.** Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).	• **CLKSP4** Demonstrates creativity and innovation. • **CLKSP5** Utilize critical thinking to make sense of problems and persevere in solving them. • **CLKSP6** Model integrity, ethical leadership and effective management.

• **9.4.2.CI.2** Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a). • **9.4.2.CT.1** Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2). • **9.4.2.CT.2** Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3). • **9.4.2.CT.3** Use a variety of types of thinking to solve problems (e.g., inductive, deductive). • **9.4.2.DC.7** Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).	

Social Emotional Learning Competencies

Self-Awareness: ability to recognize one's emotions and know one's strengths and limitations	Connections • Writing a journal entry to reflect on thoughts and ideas • Regular check-ins to share feelings (Oral, Thumbs Up, Thumbs Down, Emojis, etc.) • Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
Self-Management: ability to regulate and control one's emotions and behaviors, particularly in stressful situations	Connections • Using zones of regulation chart to monitor emotions • Take a break with deep breathing to focus
Social Awareness: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one's actions influence and are influenced by others	Connections • Writing a journal entry to reflect on understanding of key concepts • Regular check-ins to share feelings (Oral, Thumbs Up,

	Thumbs Down, Emojis, etc.) ● Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
Relationship Skills: refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts	Connections ● Engaging in collaborative discussions ● Incentives for individual students and small groups
Responsible Decision-Making: refers to the ability to use multiple pieces of information to make ethical and responsible decisions	Connections ● Class rules and routines ● Engaging in collaborative discussions ● Following directions

Computer Science and Design Thinking

Domain	Core Idea	Performance Expectation
Data & Analysis	Data can be used to make predictions about the world	8.1.2.DA.3: Identify and describe patterns in data visualizations 8.1.2.DA.4: Make predictions based on data using charts or graphs.
Algorithms & Programming	Complex tasks can be broken down into simpler instructions, some of which can be broken down even further.	8.1.2.AP.4: Break down a task into a sequence of steps.
Engineering Design	Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.	8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.
Interaction of Technology and Humans	Technology has changed the way people live	8.2.2.ITH.5: Design a solution to a problem

	and work. Various tools can improve daily tasks and quality of life.	affecting the community in a collaborative team and explain the intended impact of the solution.

Unit 3: Space: Sky Patterns	
1-ESS1-1: Use observations of the sun, moon, and stars to describe patterns that can be predicted.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Analyzing and Interpreting Data** ● Analyzing data includes collecting, recording, and sharing observations. ● Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
Disciplinary Core Ideas	**ESS1.A: The Universe and its Stars** ● Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. At night one can see the light coming from many stars with the naked eye, but telescopes make it possible to see many more and to observe them and the moon and planets in greater detail.
Crosscutting Concepts	**Patterns** ● Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. ***Connections to Nature of Science*** **Scientific Knowledge Assumes an Order and Consistency in Natural Systems** ● Science assumes natural events happen today as they happened in the past. ● Many events are repeated.
1-ESS1-2: Make observations at different times of year to relate the amount of daylight to the time of year.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**

Science and Engineering Practices	**Planning and Carrying Out Investigations** ● Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. ● Make observations (firsthand or from media) to collect data that can be used to make comparisons.
Disciplinary Core Ideas	**ESS1.B: Earth and the Solar System** ● Seasonal patterns of sunrise and sunset can be observed, described, and predicted.
Crosscutting Concepts	**Patterns** ● Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.

Unit Summary (Enduring Understandings)
In this unit, students observe the sky to identify predictable patterns of the sun, moon, and stars. Through daily observations, discussions, and recording their findings, students recognize that the sun appears to move across the sky during the day, the moon can be seen in different phases, and stars are visible at night. They use evidence from their observations to describe patterns that can be predicted over time. Students also investigate how the amount of daylight changes throughout the year by making observations during different seasons. They compare the length of day and night, identify seasonal patterns, and use their observations to explain how daylight varies over the course of a year. Throughout the unit, students develop scientific inquiry, observation, and communication skills as they collect data, recognize patterns, and make evidence-based claims about the world around them.
Essential Questions
● What patterns of the Sun, Moon, and stars can we observe, describe, and predict? ● What can we learn by observing the sky? ● How can we use observations to make predictions? ● How do scientists use evidence to explain patterns in nature? ● How can we share what we discover through scientific investigations?
Lessons and Objectives

Lesson Title	Objective(s)
Where is the Sun in the Sky Today? (OpenSciEd)	● Observe and record the Sun's location in the sky. ● Ask questions about patterns in the Sun's location.
The Sun (Exploring Science)	● Describe the sun.
Where is the Sun Throughout the Day? (OpenSciEd)	● Observe that the Sun appears in different locations throughout the day. ● Record observations using a common reference point.
Do the Sun's Different Locations Repeat? (OpenSciEd)	● Identify the repeating daily pattern of the Sun's location. ● Use evidence from observations to support claims about the Sun's pattern.
Part 1: What Happens to the Sun Between Morning and Afternoon? (OpenSciEd) Part 2: How Can We Use the Sun's Pattern to Know Where It Will Be? (OpenSciEd)	● Describe the Sun's apparent path across the sky. ● Recognize that the Sun's pattern repeats each day. ● Use patterns of the Sun's movement to predict where it will appear. ● Support predictions with evidence from observations.
The Moon (Exploring Science)	● Describe when the moon is visible.
Does the Moon Appear to Change Locations? (OpenSciEd)	● Observe that the Moon appears to move across the sky in a predictable pattern. ● Compare the Moon's pattern to the Sun's.
Stars (Exploring Science)	● Describe when you can observe stars. ● Explain why you can see stars only at night.
What Makes it Daytime or Nighttime? (OpenSciEd)	● Use observations to distinguish daytime and nighttime skies. ● Explain that the Sun is evidence of daytime and stars are

	evidence of nighttime.
Light and the Seasons (Exploring Science)	● Explain how daylight changes with the seasons. ● Predict how sunrise and sunset will change from one day to the next.
Think Like a Scientist: Make Observations (Exploring Science)	● Observe and record when sunrise and sunset occur at different times of year. ● Compare data to relate the amount of daylight to the time of year.
Part 1: How Long Are Daytime and Nighttime? (OpenSciEd) Part 2: When Are Daytimes Shorter and Longer? (OpenSciEd)	● Compare the number of daylight hours on different days. ● Observe that some days have longer periods of daylight than others. ● Relate changes in daylight length to the seasons. ● Identify seasonal patterns in sunrise and sunset.
How Can Seasonal Patterns Help Us? (OpenSciEd)	● Use evidence about seasonal daylight patterns to make predictions about daytime and nighttime events.
Science Career: Astronomer (Exploring Science)	● Connect the concept of patterns of motion of the sun, moon, stars, and planets with the career of an astronomer.

Differentiation

Multilingual Learners	● Pre-Unit Checks ● Small group instruction ● Hands-on science investigations ● Teacher modeling and think-alouds ● Preview earth science vocabulary using visuals (e.g., sun, moon, stars, sky, day, night, season, sunrise, sunset, pattern, observe, predict). ● Use picture vocabulary cards, labeled diagrams, photographs, and videos to introduce new concepts.

	● Ask yes/no questions, such as: ○ *Can you sometimes see the moon during the day?* ○ *Can you sometimes see the moon at night?* ○ *Can you see stars during the day?* ○ *Does the amount of daylight stay the same all year?* ● Provide sentence frames, such as: ○ "Sometimes you can see the moon during the _____." ○ "You can see stars in the _____ sky." ○ "There is more daylight in _____ than in _____." ○ "I observed _____." ○ "I predict _____ because _____." ● Help students complete sentence stems describing observations and patterns. ● Post anchor charts with visuals of the sun, moon, stars, seasons, day/night, and seasonal daylight patterns. ● Use gestures, demonstrations, and repeated modeling throughout investigations. ● Repeat directions and have students restate investigation procedures before beginning. ● Pair students with language buddies or peer partners during investigations. ● Encourage oral discussions before written responses. ● Provide bilingual vocabulary supports or picture dictionaries for families when appropriate. ● Use iPads or translation tools when appropriate. ● Collaborate with the ESL Specialist.
Special Education	● Pre-Unit Checks ● Small group instruction ● Teacher modeling and guided practice. ● Hands-on observations using photographs, videos, classroom models, and outdoor observations. ● Modification of recording sheets and workbook pages as needed. ● Break investigations into smaller, manageable steps with visual supports. ● Provide visual schedules and picture-supported directions. ● Have students draw the path of the sun during the morning, noon, and afternoon to demonstrate observed patterns. ● Use season cards and different lengths of paper to compare the relative amount of daylight during each season. ● Help students complete sentence stems describing when the moon and stars can be observed.

	● Provide earth science word banks during investigations and assessments. ● Use graphic organizers to compare observations made at different times of day and throughout the year. ● Allow students to demonstrate understanding through drawings, verbal responses, models, or hands-on activities. ● Repeated opportunities to observe and discuss sky patterns. ● Extended time and think time. ● Prompting and reassurance as needed. ● Preferential seating. ● Check frequently for understanding. ● Peer models and partner support. ● Sensory or movement breaks with timers as needed.
At-Risk	● Pre-Unit Checks ● Small group instruction. ● Hands-on science investigations. ● Modification of recording sheets as needed. ● Preview earth science vocabulary before each lesson. ● Use teacher think-alouds to model observations and predictions. ● Have students draw the sun's path across the sky during different times of the day. ● Use manipulatives (season cards and daylight strips) to compare seasonal daylight patterns. ● Build a simple model of the Little Dipper to demonstrate apparent movement across the night sky. ● Use graphic organizers to record observations over time. ● Reinforce concepts through repeated observations of the sky using photographs, videos, or classroom observations. ● Provide partially completed observation journals and recording sheets. ● Use anchor charts illustrating day/night, sunrise/sunset, and seasonal daylight. ● Ask guiding questions throughout investigations to support scientific thinking. ● Pair students with supportive peers during investigations. ● Preferential seating. ● Frequent teacher check-ins. ● Positive reinforcement for participation and perseverance. ● Targeted intervention or additional practice as needed.

Gifted and Talented	● Pre-Unit Checks ● Independent and small-group enrichment opportunities. ● Design and carry out additional observations to identify patterns over several weeks. ● Compare actual movement and apparent movement using classroom demonstrations and models. ● Create multiple representations of seasonal daylight (graphs, drawings, models, timelines, or digital presentations). ● Research why seasonal daylight changes throughout the year using age-appropriate informational resources. ● Compare observations from different geographic locations or seasons. ● Create detailed sky journals using labeled diagrams, charts, and written explanations. ● Develop and investigate their own scientific questions related to observable sky patterns. ● Use observation data as evidence to make predictions about future sky patterns. ● Explain how repeated observations help scientists make predictions. ● Design a model demonstrating predictable sky patterns. ● Present observations and conclusions using diagrams, models, or presentations. ● Challenge classmates with higher-level questions about observable patterns in the sky.
504	● Pre-Unit Checks ● Small group instruction as appropriate. ● Hands-on science investigations. ● Modification of recording sheets when appropriate. ● Provide visual vocabulary cards and picture supports. ● Provide clear, concise, and repeated directions verbally and visually. ● Break investigations into smaller, manageable steps. ● Have students draw the sun's path across the sky to reinforce observations. ● Use season cards and daylight models to support comparisons. ● Allow extended time for observations, recording data, and written responses. ● Offer frequent teacher check-ins throughout investigations. ● Provide preferential seating to maximize participation in demonstrations and discussions. ● Reduce distractions during independent work. ● Allow flexible methods to demonstrate understanding (oral responses, drawings, models, written work, or demonstrations). ● Prompt students during investigations as needed. ● Use positive reinforcement and individualized encouragement.

	● Provide sensory or movement breaks as needed. ● Allow the use of assistive technology, Chromebook accessibility features, or adaptive tools when specified in student accommodations. ● Check frequently for understanding.

Evidence of Learning - Assessment

Formative	Summative	Benchmark	Alternative
● Wrap It Up! Questions ● OpenSciEd Handouts ● Teacher observation during investigations and discussions about patterns in the sun, moon, stars, and seasonal daylight. ● Class Discussions/Partner Talk explaining observable sky patterns using evidence from classroom observations, photographs, videos, or models. ● Science Notebook activities to record daily observations, predictions, and conclusions about sky patterns.	● End-of-Unit Earth Science Assessment ● OpenSciEd Assessments ● Performance task in which students observe photographs, diagrams, or classroom models of the sky and identify predictable patterns involving the sun, moon, stars, or seasonal daylight. ● Students use observation data to make and justify a prediction about a future sky pattern (e.g., day/night observations or seasonal daylight changes). ● Teacher rubric	● Grade 1 Science Benchmark	● Students create a sky journal documenting observations of the sun, moon, stars, or daylight over several days using drawings, labels, and simple written or oral explanations. ● Students sequence picture cards showing day and night or seasonal daylight patterns and explain their reasoning through discussion, drawings, or oral responses. ● Students develop a model, poster, or visual timeline illustrating predictable patterns in the sky and present their observations to the

• Performance Expectation Activities: Investigate, Think Like a Scientist, and STEAM Projects focused on observing, recording, and predicting patterns in the sky. • Exit tickets in which students draw or label observations of the sun, moon, or stars, or explain one observable pattern they noticed. • Teacher-created rubrics to assess students' observation skills, scientific reasoning, use of evidence, and ability to identify patterns.	assessing students' ability to identify observable patterns, use evidence from observations, and make evidence-based predictions.		class. • Students complete a teacher-guided investigation using photographs, classroom models, or digital media to identify patterns in the sky and communicate their findings through drawings, labeled diagrams, or oral presentations.

Core Instructional Materials

Print and Digital Resources	Miscellaneous Resources

• National Geographic: Exploring Science
• National Geographic Leveled Readers
• Open SciEd
  ○ Unit 3 Storyline
  ○ Unit 3 Teacher Edition
  ○ Unit 3 Student Bundle
	• Unit 3 Resource Folder

○ Space: Sky Patterns Unit Webinar ○ Unit 3 ■ Lesson 1 ■ Lesson 2 ■ Lesson 3 ■ Lesson 4 ● 1.3 Lesson 4 Shadows Timelapse Video ● 1.3 Lesson 4 Sun Timelapse Video ■ Lesson 5 ■ Lesson 6 ● 1.3 Lesson 6 Moon Timelapse Video ■ Lesson 7 ■ Lesson 8 ■ Lesson 9 ■ Lesson 10 ● BrainPop ○ Constellations ○ Day and Night ○ Earth ○ Moon ○ Solar System ○ Spring ○ Summer ○ Winter ○ Fall ○ Seasons	

Interdisciplinary Connections

English Language Arts - Reading

- **RI.AA.1.7** Identify the reasons an author gives to support points in a text and explain how that information is applied, with prompting as needed.

- **RI.CI.1.2** Determine main topic and retell a series of key details in informational texts (e.g., who, what, where, when, why, how).

English Language Arts - Writing

- **W.SE.1.6** With guidance and support from adults, gather and select information from multiple sources to answer a question or write about a topic.
- **W.WR.1.5** With prompting and support, generate questions through shared research about a topic and determine possible sources to obtain information on that topic.

English Language Arts - Speaking and Listening

- **SL.II.1.2** Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

Math

- **1.DL.A.1** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
- **1.B.3** Tell and write time in hours and half hours using analog and digital clocks.
- **1.OA.A.1** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- **1.DL.A.1** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Career Readiness, Life Literacies, and Key Skills

NJSLS	Practices
• **9.2.2.CAP.1.** Make a list of different types of jobs and describe the skills associated with each job. • **9.2.2.CAP.2.** Explain why employers are willing to pay individuals to work. • **9.4.2.CI.1** Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2). • **9.4.2.CI.2** Demonstrate originality and inventiveness in work	• **CLKSP4** Demonstrates creativity and innovation. • **CLKSP5** Utilize critical thinking to make sense of problems and persevere in solving them. • **CLKSP6** Model integrity, ethical leadership and effective management.

(e.g., 1.3A.2CR1a). ● **9.4.2.CT.1** Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2). ● **9.4.2.CT.2** Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3). ● **9.4.2.CT.3** Use a variety of types of thinking to solve problems (e.g., inductive, deductive). ● **9.4.2.DC.7** Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).	

Social Emotional Learning Competencies

Self-Awareness: ability to recognize one's emotions and know one's strengths and limitations	Connections ● Writing a journal entry to reflect on thoughts and ideas ● Regular check-ins to share feelings (Oral, Thumbs Up, Thumbs Down, Emojis, etc.) ● Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
Self-Management: ability to regulate and control one's emotions and behaviors, particularly in stressful situations	Connections ● Using zones of regulation chart to monitor emotions ● Take a break with deep breathing to focus
Social Awareness: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one's actions influence and are influenced by others	Connections ● Writing a journal entry to reflect on understanding of key concepts ● Regular check-ins to share feelings (Oral, Thumbs Up,

	Thumbs Down, Emojis, etc.) ● Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
Relationship Skills: refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts	Connections ● Engaging in collaborative discussions ● Incentives for individual students and small groups
Responsible Decision-Making: refers to the ability to use multiple pieces of information to make ethical and responsible decisions	Connections ● Class rules and routines ● Engaging in collaborative discussions ● Following directions

Computer Science and Design Thinking

Domain	Core Idea	Performance Expectation
Data & Analysis	Data can be used to make predictions about the world	8.1.2.DA.3: Identify and describe patterns in data visualizations 8.1.2.DA.4: Make predictions based on data using charts or graphs.
Algorithms & Programming	Complex tasks can be broken down into simpler instructions, some of which can be broken down even further.	8.1.2.AP.4: Break down a task into a sequence of steps.
Effects of Technology on the Natural World	The use of technology developed for the human designed world can affect the environment, including land, water, air, plants, and animals. Technologies that use	8.2.2.ETW.1: Classify products as resulting from nature or produced as a result of technology.

	natural sources can have negative effects on the environment, its quality, and inhabitants. Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment.	

Unit 4: Animal and Plant Traits	
1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Constructing Explanations and Designing Solutions** ● Constructing explanations and designing solutions includes the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. ● Use materials to design a device that solves a specific problem or a solution to a specific problem.
Disciplinary Core Ideas	**LS1.A: Structure and Function** ● All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. **LS1.D: Information Processing** ● Animals have body parts that capture and convey different kinds of information needed for growth and survival—for example, eyes for light, ears for sounds, and skin for temperature or touch. Animals respond to these inputs with behaviors that help them survive (e.g., find food, run from a predator). Plants also respond to some external inputs (e.g., leaves turn toward the sun).
Crosscutting Concepts	**Structure and Function** ● The shape and stability of structures of natural and designed objects are related to their function(s).

	Connections to Engineering, Technology, and Applications of Science **Influence of Science, Engineering and Technology on Society and the Natural World** ● Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.
1-LS1-2: Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Obtaining, Evaluating, and Communicating Information** ● Obtaining, evaluating, and communicating information includes using observations and texts to communicate new information. ● Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. ***Connections to Nature of Science*** **Scientific Knowledge is Based on Empirical Evidence** ● Scientists look for patterns and order when making observations about the world.
Disciplinary Core Ideas	**LS1.B: Growth and Development of Organisms** ● Plants and animals have predictable characteristics at different stages of development. Plants and animals grow and change. Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive.
Crosscutting Concepts	***Patterns*** ● Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.
1-LS3-1: Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and	**Constructing Explanations and Designing Solutions**

Engineering Practices	● Constructing explanations and designing solutions includes the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. ● Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.
Disciplinary Core Ideas	**LS3.A: Inheritance of Traits** ● Organisms have characteristics that can be similar or different. Young animals are very much, but not exactly, like their parents and also resemble other animals of the same kind. Plants also are very much, but not exactly, like their parents and resemble other plants of the same kind. **LS3.B: Variation of Traits** ● Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.
Crosscutting Concepts	**Patterns** ● Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.
K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Asking Questions and Defining Problems** ● Asking questions and defining problems includes simple descriptive questions. ● Ask questions based on observations to find more information about the natural and/or designed world(s). ● Define a simple problem that can be solved through the development of a new or improved object or tool.
Disciplinary Core Ideas	**ETS1.A: Defining and Delimiting Engineering Problems** ● A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem.
Crosscutting Concepts	Intentionally left blank

K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given.	
Dimension	**Descriptions of the Developmentally Appropriate Elements**
Science and Engineering Practices	**Developing and Using Models** ● Modeling includes using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions. ● Develop a simple model based on evidence to represent a proposed object or tool.
Disciplinary Core Ideas	**ETS1.B: Developing Possible Solutions** ● Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. To design something complicated, one may need to break the problem into parts and attend to each part separately but must then bring the parts together to test the overall plan.
Crosscutting Concepts	**Structure and Function** ● The shape and stability of structures of natural and designed objects are related to their function(s).

Unit Summary (Enduring Understandings)
In this unit, students explore the traits of plants and animals and investigate how living things grow, survive, and care for their young. Through observations, informational texts, videos, and other media, students compare young plants and animals to their parents and use evidence to explain how they are similar and different. They also identify patterns in the behaviors of parent plants and animals that help offspring survive and meet their basic needs. Students apply the engineering design process by investigating how the external parts of plants and animals help them survive and using these adaptations as inspiration to solve a human problem. They ask questions, gather information, and design a solution by creating a simple sketch, drawing, or physical model that demonstrates how the shape of an object helps it function. Throughout the unit, students develop scientific inquiry, critical thinking, and problem-solving skills while making connections between the natural world and human-designed solutions.
Essential Questions
● How do animals and plants use their parts to survive?

- How are young plants and animals like their parents?
- What patterns can we observe in living things?
- How can we use observations and evidence to learn about plants and animals?
- How can engineers use ideas from nature to solve problems?
- How can we design and communicate a solution inspired by nature?

Lessons and Objectives

Lesson Title	Objective(s)
What Do We Notice About Plant and Animal Parts? (OpenSciEd)	● Observe that plants and animals have different external parts. ● Ask questions about how those parts help living things survive and grow.
Part 1: Plants (Exploring Science) Part 2: Roots, Stems, and Leaves (Exploring Science)	● Identify plants as living things. ● Know that plants have different parts that help them survive. ● Identify the parts of plants. ● Explain how roots, stems, and leaves help plants survive and grow.
Flowers and Fruits (Exploring Science)	● Identify flowers and fruits as parts of many plants. ● Explain how flowers and fruits help these plants survive and grow.
How Do Roots, Stems, Leaves, Flowers, and Fruit Help a Plant Live and Grow? (OpenSciEd)	● Investigate how plant structures help plants survive and grow. ● Explain the functions of roots, stems, leaves, flowers, and fruit.
Part 1: Young Plants Look Like Their Parents (Exploring Science) Part 2: Plants Can Be Different (Exploring Science)	● Identify that plants are very much, but not exactly, like their parents. ● Observe that plants of the same kind are similar, but can

	also vary in many ways.
How Do Smaller Plants and Animals Compare to Bigger Ones? (OpenSciEd)	● Observe that young plants and animals are like, but not exactly like, their parents. ● Identify similarities and differences between parents and offspring.
Animal Parts (Exploring Science)	● Explain that different animals use their body parts in different ways. ● Identify the different body parts of animals that help them survive and grow.
What Do Animal Parts Help Them Do? (OpenSciEd)	● Explain how different animal body parts help animals survive. ● Describe how body parts help animals move, find food, protect themselves, and respond to their surroundings.
How Do Animal Offspring Survive With Help From Their Parents? (OpenSciEd)	● Identify patterns in parent and offspring behaviors that help offspring survive. ● Explain how parents use body parts and behaviors to care for their young.
Case Study: A Better Train (Exploring Science)	● Describe how engineers design solutions to a human problem by mimicking how animals use their external parts to help them survive, grow, and meet their needs.
How Can We Find Out About Other Plant and Animal Parts to Help Us Design Our Solutions? (OpenSciEd)	● Gather information about plant and animal structures. ● Develop a design that mimics plant or animal parts to solve a human problem.
Think Like an Engineer: Design a Solution (Exploring Science)	● Use materials to design a solution to a human problem by mimicking how animals use their external parts to help them survive.
How Can We Design Solutions That Mimic Plants and Animals?	● Build and communicate a solution inspired by plant or

(OpenSciEd)	animal structures. ● Explain how mimicking nature can solve human problems.
Science Career: Conservationist (Exploring Science)	● Connect concepts about animals and how they survive with the career of a conservationist.

Differentiation

Multilingual Learners	● Pre-Unit Checks. ● Small group instruction. ● Hands-on science investigations. ● Teacher modeling and think-alouds. ● Preview life science vocabulary using visuals (e.g., plant, animal, roots, stem, leaves, flower, offspring, parent, trait, survive, habitat, mimic, engineer, design). ● Use picture vocabulary cards, labeled diagrams, photographs, and real-life examples to introduce new concepts. ● Ask yes/no and either/or questions to check for understanding. ○ *Do all animals have the same body parts?* ○ *Do roots help plants grow?* ○ *Are young animals exactly the same as their parents?* ○ *Can people design tools inspired by nature?* ● Provide sentence frames, such as: ○ *"The _____ helps the _____ survive."* ○ *"The baby _____ is like its parent because _____."* ○ *"I observed _____."* ○ *"The plant needs _____ to grow."* ○ *"Our design was inspired by _____."* ● Help students complete sentence stems describing observations and comparisons. ● Post anchor charts with labeled diagrams of plant parts, animal body parts, life cycles, and the engineering design process. ● Use gestures, demonstrations, and repeated modeling throughout investigations.

	● Repeat directions and have students restate investigation procedures before beginning. ● Pair students with language buddies or peer partners during investigations. ● Encourage oral discussions before written responses. ● Provide bilingual vocabulary supports or picture dictionaries for families when appropriate. ● Use iPads or translation tools when appropriate. ● Collaborate with the ESL Specialist.
Special Education	● Pre-Unit Checks. ● Small group instruction. ● Teacher modeling and guided practice. ● Hands-on observations using real plants, classroom specimens, photographs, models, and videos. ● Modification of recording sheets and workbook pages as needed. ● Break investigations into smaller, manageable steps with visual supports. ● Provide visual schedules and picture-supported directions. ● Use sorting activities to classify plants, animals, and their external parts. ● Compare pictures of parents and offspring using graphic organizers. ● Use real objects (leaves, seeds, flowers, feathers, shells, bark) whenever possible to reinforce vocabulary. ● Provide life science word banks during investigations and assessments. ● Allow students to demonstrate understanding through drawings, verbal responses, models, or hands-on activities. ● Provide repeated opportunities to observe and compare living things. ● Use graphic organizers to compare similarities and differences between parents and offspring. ● Extended time and think time. ● Prompting and reassurance as needed. ● Preferential seating. ● Check frequently for understanding. ● Peer models and partner support. ● Sensory or movement breaks with timers as needed.
At-Risk	● Pre-Unit Checks. ● Small group instruction. ● Hands-on science investigations. ● Modification of recording sheets as needed.

	● Preview life science vocabulary before each lesson. ● Connect concepts to familiar experiences with pets, gardens, parks, or local wildlife. ● Use teacher think-alouds to model observations and comparisons. ● Use sorting activities to classify plant and animal parts by function. ● Compare photographs of parent plants and animals with their offspring. ● Build simple models showing how plant and animal parts help living things survive. ● Use graphic organizers to compare similarities and differences. ● Reinforce concepts through repeated observations using photographs, videos, and classroom specimens. ● Provide partially completed recording sheets and observation journals. ● Use anchor charts illustrating plant structures, animal body parts, and inherited traits. ● Ask guiding questions throughout investigations to support scientific thinking. ● Pair students with supportive peers during investigations. ● Preferential seating. ● Frequent teacher check-ins. ● Positive reinforcement for participation and perseverance. ● Targeted intervention or additional practice as needed.
Gifted and Talented	● Pre-Unit Checks. ● Independent and small-group enrichment opportunities. ● Design and carry out additional investigations comparing plant and animal structures. ● Research unique plant or animal adaptations using age-appropriate informational resources. ● Compare how different organisms use similar structures to survive. ● Investigate how engineers have used biomimicry to solve real-world problems. ● Design, build, test, and improve a device inspired by a plant or animal structure. ● Develop multiple design solutions and compare their effectiveness. ● Create detailed scientific diagrams with labels and written explanations. ● Develop and investigate their own scientific questions related to plant and animal traits. ● Use evidence from observations to explain similarities and differences between parents and offspring. ● Present investigation findings and engineering designs using models, diagrams, or presentations. ● Challenge classmates with higher-level questions about living organisms and engineering design.
504	● Pre-Unit Checks. ● Small group instruction as appropriate.

	● Hands-on science investigations. ● Modification of recording sheets when appropriate. ● Provide visual vocabulary cards and picture supports. ● Provide clear, concise, and repeated directions verbally and visually. ● Break investigations and engineering activities into smaller, manageable steps. ● Use graphic organizers to compare plant and animal traits. ● Allow extended time for observations, recording data, and written responses. ● Offer frequent teacher check-ins throughout investigations. ● Provide preferential seating to maximize participation in demonstrations and discussions. ● Reduce distractions during independent work. ● Allow flexible methods to demonstrate understanding (oral responses, drawings, models, written work, or demonstrations). ● Prompt students during investigations and engineering activities as needed. ● Use positive reinforcement and individualized encouragement. ● Provide sensory or movement breaks as needed. ● Allow the use of assistive technology, Chromebook accessibility features, or adaptive tools when specified in student accommodations. ● Check frequently for understanding.

Evidence of Learning - Assessment

Formative	Summative	Benchmark	Alternative
● Wrap It Up! Questions ● OpenSciEd Handouts ● Teacher observation during investigations comparing plant and animal structures, parent-offspring similarities, and	● End-of-Unit Life Science Assessment ● OpenSciEd Assessments ● Performance task in which students identify plant or animal structures, explain how	● Grade 1 Science Benchmark	● Students sort photographs or models of plants and animals by their structures and explain how those structures help organisms survive using drawings, labels, or oral

engineering design activities. ● Class Discussions/Partner Talk explaining how plant and animal structures help organisms survive and how young plants and animals are similar to their parents. ● Science Notebook activities to record observations, compare structures, and explain how plants and animals meet their needs. ● Performance Expectation Activities: Investigate, Think Like a Scientist, Think Like an Engineer, and STEAM Projects. ● Exit tickets in which students identify a plant or animal structure and explain how it helps the organism survive or draw one way a young plant or animal is similar to its parent. ● Teacher-created rubrics to assess students' observation skills, scientific reasoning,	those structures help organisms survive, and compare young plants or animals with their parents using evidence from observations. ● Engineering design challenge in which students design, sketch, and explain a simple solution to a human problem inspired by a plant or animal structure. ● Teacher rubric assessing students' understanding of plant and animal structures, inherited traits, scientific investigations, and the engineering design process.		explanations. ● Students compare pictures of parent plants or animals with their offspring and communicate similarities and differences through a graphic organizer, labeled drawing, or verbal explanation. ● Students design and build a simple model inspired by a plant or animal structure (e.g., a tool modeled after a bird's beak or a seed dispersal structure), then explain how the design solves a human problem. ● Students create a science notebook or investigation booklet documenting observations, labeled diagrams, comparisons, engineering sketches, and evidence-based conclusions from throughout the unit.

engineering design process, and evidence-based explanations.			

Core Instructional Materials

Print and Digital Resources	Miscellaneous Resources

• National Geographic: Exploring Science
• National Geographic Leveled Readers
• Open SciEd
  ○ Unit 4 Storyline
  ○ Unit 4 Teacher Edition
  ○ Unit 4 Student Bundle
  ○ Unit 4
  ■ Lesson 1
  ■ Lesson 2
  ■ Lesson 3
  ● 1.4 Lesson 3 Meet the Animal Families!
  ■ Lesson 4
  ■ Lesson 5
  ● 1.4 Lesson 5 Flower to Fruit
  ● 1.4 Lesson 5 Tendril Growth and Support
  ● 1.4 Lesson 5 Colored Dye Plant Investigation
  ● 1.4 Lesson 5 Seed Germination and Early Growth
  ■ Lesson 6
	• Unit 4 Resource Folder

■ Lesson 7 ■ Lesson 8 ● 1.4 Lesson 8 Eagle Caring For Their Young ■ Lesson 9 ■ Lesson 10 ● BrainPop ○ Living and Nonliving Things ○ Parts of a Plant ○ Plant Adaptations ○ Plant Life Cycle ○ Insects ○ Mammals ○ Extinct and Endangered Species	

Interdisciplinary Connections

English Language Arts - Reading
- **RI.CR.1.1** Ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).
- **RI.CT.1.8** Identify similarities in and differences between two informational texts on the same topic (e.g., characters, experiences, illustrations, descriptions, or procedures).
- **RI.MF.1.6** With prompting and support, use text features (e.g., diagrams, tables, animations) to describe key ideas.

English Language Arts - Writing
- **W.IW.1.2** With prompts and support, write informative/explanatory texts to examine a topic and convey ideas and information. (See A through C)
- **W.SE.1.6** With guidance and support from adults, gather and select information from multiple sources to answer a question or write about a topic.

English Language Arts - Speaking and Listening
- **SL.PI.1.4** Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
- **SL.UM.1.5** Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

Math

- **1.DL.A.1** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Career Readiness, Life Literacies, and Key Skills

NJSLS	Practices
● **9.2.2.CAP.1.** Make a list of different types of jobs and describe the skills associated with each job. ● **9.2.2.CAP.2.** Explain why employers are willing to pay individuals to work. ● **9.4.2.CI.1** Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2). ● **9.4.2.CI.2** Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a). ● **9.4.2.CT.1** Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2). ● **9.4.2.CT.2** Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3). ● **9.4.2.CT.3** Use a variety of types of thinking to solve problems (e.g., inductive, deductive). ● **9.4.2.DC.7** Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).	● **CLKSP4** Demonstrates creativity and innovation. ● **CLKSP5** Utilize critical thinking to make sense of problems and persevere in solving them. ● **CLKSP6** Model integrity, ethical leadership and effective management.

Social Emotional Learning Competencies

Self-Awareness: ability to recognize one's emotions and know one's strengths and limitations	Connections

	● Writing a journal entry to reflect on thoughts and ideas ● Regular check-ins to share feelings (Oral, Thumbs Up, Thumbs Down, Emojis, etc.) ● Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
Self-Management: ability to regulate and control one's emotions and behaviors, particularly in stressful situations	Connections ● Using zones of regulation chart to monitor emotions ● Take a break with deep breathing to focus
Social Awareness: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one's actions influence and are influenced by others	Connections ● Writing a journal entry to reflect on understanding of key concepts ● Regular check-ins to share feelings (Oral, Thumbs Up, Thumbs Down, Emojis, etc.) ● Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
Relationship Skills: refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts	Connections ● Engaging in collaborative discussions ● Incentives for individual students and small groups
Responsible Decision-Making: refers to the ability to use multiple pieces of information to make ethical and responsible decisions	Connections ● Class rules and routines ● Engaging in collaborative discussions ● Following directions

Computer Science and Design Thinking

Domain	Core Idea	Performance Expectation
Data & Analysis	Data can be used to make predictions about the world	8.1.2.DA.3: Identify and describe patterns in data visualizations 8.1.2.DA.4: Make predictions based on data using charts or graphs.
Algorithms & Programming	Complex tasks can be broken down into simpler instructions, some of which can be broken down even further.	8.1.2.AP.4: Break down a task into a sequence of steps.
Engineering Design	Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.	8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.
Interaction of Technology and Humans	Human needs and desires determine which new tools are developed.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ITH.2: Explain the purpose of a product and its value.