

**Science Pacing Guide Timeline
Kindergarten**

Month	Unit #	Theme/Content
September – June (Ongoing and Integrated)	All Year (Ongoing and Integrated)	Earth and Space Science – Weather
October - November	1,2	Engineering/Energy from the Sun
December - February	3	Physical Science (Forces and Interactions: Pushes & Pulls)
March – June	4	Life Science (Interdependent Relationships in Ecosystems: Animals, Plants, & their Environments)

**Science Pacing Guide
Kindergarten**

**Time Frame: September (Year Long Standards)
Unit 1 (Yearlong): Earth’s Systems – Weather**

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p>Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-ESS2-1) 	<p>Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (K-ESS2-1)</p>	<p><u>CCSS.ELA-LITERACY.W.K.6</u> With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.</p> <p><u>CCSS.ELA-LITERACY.W.K.8</u> With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.</p> <p><u>CCSS.ELA-LITERACY.SL.K.5</u> Add drawings or other visual displays to descriptions as desired to provide additional detail.</p>	<p>MP.2 Reason abstractly and quantitatively. <i>(K-2-ETS1-1), (K-2-ETS1-3)</i></p> <p>MP.4 Model with mathematics. <i>(K-2-ETS1-1), (K-2-ETS1-3)</i></p> <p>MP.5 Use appropriate tools strategically. <i>(K-2-ETS1-1), (K-2-ETS1-3)</i></p> <p>2. MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <i>(K-2-ETS1-1), (K-2-ETS1-3)</i></p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Question	Assessments	Vocabulary	Resources
<p>Students who demonstrate understanding can:</p> <p>K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the</p>	<p>ESS2.D: Weather and Climate Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a</p>	<p>-What is the weather today and how is it different from yesterday?</p>	<p>Before: KWL Chart about weather (teacher introduces pictures to represent daily weather).</p> <p>During: Throughout the school year daily weather</p>	<p>Bar graph Cloudy Cold Collect Cooler Create Data Describe Model Observe</p>	<p>Chart paper to create graphs and KWL Chart.</p> <p>A weather chart for recording weather.</p> <p>Visual aids (Bulletin Board Resources) for weather vocabulary (rainy, sunny, windy, snowy).</p> <p>One inch Graph paper to create monthly graphs of weather patterns.</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Question	Assessments	Vocabulary	Resources
<p>weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.]</p>	<p>particular time.</p> <p>People measure these conditions to describe and record the weather and to notice patterns over time. (K-ESS2-1)</p>		<p>chart (students mark on a monthly calendar using cut out pictures to represent words).</p> <p>Monthly the teacher leads them in making a graph of weather patterns using their monthly calendars.</p> <p>After: The student will be evaluated using a rubric based on the essential questions on their collection of weather charts and graphs. Students should show improvement from their first to last chart.</p>	<p>Patterns Picture graph Rainy Recall Record Region Snowy Sunlight Sunny Temperature Warm Warmer Weather Wind</p>	<p>Monthly Calendars to keep weather records on: https://www.education.com/download-pdf/activity/13815/</p> <p>Weekly Calendars to keep weather records on: https://prekinders-wpengine.netdna-ssl.com/wp-content/uploads/2011/03/weather-chart2.pdf</p> <p>Cutouts for students to cut out and glue to their monthly weather calendars for record keeping: https://www.prekinders.com/weatherunit/WeatherCards.pdf</p> <p>Kindergarten Weather Songs on You-tube will help kindergarteners with learning by putting weather put to music and rhyme.</p> <p>Incorporate Literacy Trade Books with seasons, and weather, include an art activity with the book.</p> <p>Books:</p> <ul style="list-style-type: none"> • Maisy’s Wonderful Weather • What Will the Weather Be Like Today? • Weather • Weather • All Around the Seasons • Spring is Here • Watching the Seasons • Changing Seasons

Unit 1 (continued): Earth and Space Science – Weather

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p>Asking Questions and Defining Problems Asking questions and defining problems in grades K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.</p> <ul style="list-style-type: none"> Ask questions based on observations to find more information about the designed world. (K- ESS3-2) <p>Scientific Investigations Use a Variety of Methods Scientists use different ways to study the world. (K-PS3-1)</p> <p>Science Knowledge is Based on Empirical Evidence Scientists look for patterns and order when making observations about the world. (K-ESS2-1)</p>	<p>Cause and Effect Events have causes that generate observable patterns. (K-PS3-1),(K-PS3-2),(K-ESS3-2)</p>	<p><u>CCSS.ELA-LITERACY.RI.K.1</u> With prompting and support, ask and answer questions about key details in a text.</p> <p><u>CCSS.ELA-LITERACY.W.K.6</u> With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.</p> <p><u>CCSS.ELA-LITERACY.W.K.8</u> With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.</p>	<p>MP.2 Reason abstractly and quantitatively. (K-2-ETS1-1),(K-2-ETS13)</p> <p>MP.4 Model with mathematics. (K-2-ETS1-1),(K-2-ETS1-3)</p> <p>MP.5 Use appropriate tools strategically. (K-2-ETS1-1),(K-2-ETS1-3)</p> <p>2. MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. (K-2-ETS1-1),(K-2-ETS1-3)</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Question	Assessments	Vocabulary	Resources	Project Based Learning
<p>Students who demonstrate understanding can:</p> <p>K-ESS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.* [Clarification Statement: Emphasis is on local forms of severe weather.]</p>	<p>ESS3.B: Natural Hazards Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (K-ESS3-2)</p>	<p>-What local severe weather do we have to prepare for and how do we prepare?</p>	<p>Before: Create a class list of weather, define severe.</p> <p>During: Students will create pictures after the teacher models the weather.</p> <p>After: Project- the class will</p>	<p>Bar graph Emergency Forms Gather information Key details Local Model Observation Pattern Picture graph Preparedness Region Severe weather Weather</p>	<p>Science Journals. KWL Chart. Tornado in a Bottle Experiment: http://www.sciencekids.co.nz/experiments/makeatornado.html Books: Branley, Franklyn M. <i>Tornado Alert</i>. Fowler, Allan. <i>When A</i></p>	<p>Task: Create an emergency preparedness book with pictures and dictated sentences. (p. 231-The class will create an emergency preparedness backpack where they will draw the materials</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Question	Assessments	Vocabulary	Resources	Project Based Learning
	<p>ETS1.A: Defining and Delimiting an Engineering Problem Asking questions, making observations, and gathering information are helpful in thinking about problems. <i>(secondary to K-ESS3-2)</i></p>		create an emergency preparedness book with pictures and dictated sentences from students to teacher or teacher helpers, using a rubric which addresses the essential questions.	forecasting	<i>Storm Comes Up.</i>	they would need)

Unit 1: Weather (Earth and Space Science)	
Task: Create an emergency preparedness book with pictures and dictated sentences.	
Project Based Learning Scoring Rubric	
3	States a claim supported with evidence that food, water, batteries, a radio, and other objects are needed in a severe weather safety kit
2	States a claim somewhat supported with evidence that food, water, batteries, a radio and other objects are needed in a severe weather safety kit
1	States a claim that is not supported by evidence
0	Does not state a claim and does not provide evidence.

Time Frame: October – November
Unit 2: Engineering and Energy from the Sun

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p>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.</p> <ul style="list-style-type: none"> Make observations (first hand or from media) to collect data that can be used to make comparisons (K-PS3-1) <p>Scientific Investigations Use a Variety of Methods Scientists use different ways to study the world. (K-PS3-1)</p> <p>Science Knowledge is Based on Empirical Evidence Scientists look for patterns and order when making observations about the world. (K-ESS2-1)</p>	<p>Cause and Effect Events have causes that generate observable patterns. (K-PS3-1),(K-PS3-2),(K-ESS3-2)</p>	<p><u>CCSS.ELA-LITERACY.W.K.7</u> Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).</p>	<p>K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/”less of” the attribute, and describe the difference. (K-PS3-1),(K-PS3-2)</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources	Project Based Learning
Students who demonstrate understanding can: Ask questions, make observations, and gather information about a situation that people want to	<p>ETS1.A-Defining and delimiting engineering problems A situation that people want to change can be solved through engineering.</p>	What does an engineer do? How does an engineer ask questions, make observations and gather information to solve a problem?	<p>Before The class will make a chart about what engineers do.</p> <p>During Turn and talk about ways a problem can be fixed through engineering.</p>	Problem Solution Engineer Technology		Task- Create a tool to reach something under the couch.(computer cart- p. 25- Engineer it, A Design Process)

change to define a simple problem that can be solved through the development of a new tool.	Asking questions, making observations and gathering information are helpful in thinking about problems.		After Students will be engineers and identify a problem and in groups draw a way it can be fixed. (p. 9-Engineer it Problem and Solution)			
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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources	Project Based Learning
<p>Students who demonstrate understanding can:</p> <p>K-PS3-1 Make observations to determine the effect of sunlight on Earth’s surface. [Clarification Statement: Examples of Earth’s surface could include sand, soil, rocks, and water]</p> <p>K-PS3-2 Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth’s surface.* [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]</p>	<p>PS3.B: Conservation of Energy and Energy Transfer Sunlight warms Earth’s surface. (K-PS3-1),(K-PS3-2)</p>	<p>-What effect does the sun have on different surfaces of the Earth?</p> <p>-What materials are most effective in lessening the effect on the Earth are many surfaces?</p>	<p>Before: Create a class brainstorm chart on prior knowledge of how the sun affects (changes) things.</p> <p>During: Pose “what if” questions, note students comments before and after practiced experiments.</p> <p>After: Students choose before and after pictures related to the sun’s effects,</p>	<p>Attribute Build Collect Common Compare Data Earth’s surface Effect Less of More of Observe Patterns Reduce Research Rocks Sand Soil Sunlight Warming Water</p>	<p>Science Journals.</p> <p>KWL Chart.</p> <p>Books: Simon, Seymour. <i>The Sun</i>. Mulberry Books. ISBN 9780688092368. 1989.</p> <p>Branley Franklyn M. <i>Sun: Our Nearest Star</i>. Trophy Press. ISBN 9780064452021. 2002.</p> <p>Fowler, Allan. <i>Energy From The Sun</i>. Children’s Press. ISBN 9780516262550. 1998.</p> <p>Kalman, Bobbie. <i>Earth and the Sun</i>. Crabtree Publishing Co. ISBN 9780778732129. 2008.</p> <p>Video: How the Sun Affects life on Earth: http://www.neok12.com/video/Sun/zX5a757b4455546940600145.htm</p>	<p>Task: Create a structure whose function is to provide shade for and protect an ice cube that is out in the sun from melting.</p> <p>https://betterlesson.com/lesson/644795/a-place-in-the-shade-an-engineering-challenge#</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources	Project Based Learning
			using a rubric which addresses the essential questions.		Science activity to help students broaden their understanding of the sun, particularly its critical role in warming the land, air, and water around us. http://sciencenetlinks.com/lessons/the-warmth-of-the-sun/	

Unit 2: Weather (Energy from the Sun)	
Task: Create a structure whose function is to provide shade for and protect an ice cube that is out in the sun from melting.	
Project Based Learning Scoring Rubric	
3	Builds, tests, and if needed redesigns a shelter from the sun, and communicates results
2	Builds and tests a shelter from the sun, but does not communicate results
1	Builds a shelter from the sun, but does not test it, and does not communicate results
0	Does not build or test a shelter from the sun and does not communicate results

Time Frame: December – February
Unit 3: Physical Science (Forces and Interactions: Pushes & Pulls)

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p>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.</p> <ul style="list-style-type: none"> With guidance, plan and conduct an investigation in collaboration with peers. (K-PS2-1) <p>Connections to the Nature of Science</p> <p>Scientific Investigations Use a Variety of Methods Scientists use different ways to study the world. (K-PS2-1)</p>	<p>Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes. (K-PS2-1),(K-PS2-2)</p>	<p><u>CCSS.ELA-LITERACY.RI.K.1</u> With prompting and support, ask and answer questions about key details in a text.</p> <p><u>CCSS.ELA-LITERACY.W.K.7</u> Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).</p> <p><u>CCSS.ELA-LITERACY.SL.K.3</u> Ask and answer questions in order to seek help, get information, or clarify something that is not understood.</p>	<p>MP.2 Reason abstractly and quantitatively. (K-PS2-1)</p> <p>K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1)</p> <p>K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/”less of” the attribute, and describe the difference. (K-PS2-1)</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources	Project Based Learning
Students who demonstrate understanding can: K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions	<p>PS2.A: Forces and Motion Pushes and pulls can have different strengths and directions. (K-PS2-1),(K-PS2-2)</p> <p>Pushing or pulling on an object can</p>	<p>-What happens if you push or pull an object harder?</p> <p>-What happens if two</p>	<p>Before: Have students act out with a partner pushing hands together and describe what happens when the applied more pressure.</p>	Attribute Change motion Clarify Collide Common Describe Difference Express ideas Investigate	Science Journals. KWL Chart. <p>Worksheet: Push or Pull https://www.greatschools.org/library/cms/04/25604.pdf</p> <p>Be Forceful https://www.greatschools.org/gk/?s=be</p>	<p>Class Project-Ramp-Students will work to create a ramp to explore push and pull. Students will put different objects down the ramp and make observations. (p. 45-46 –Engineer</p>

<p>of pushes and pulls on the motion of an object. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment Boundary: <i>Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.</i>]</p>	<p>change the speed or direction of its motion and can start or stop it. (K-PS2-1),(K-PS2-2)</p> <p>PS2.B: Types of Interactions When objects touch or collide, they push on one another and can change motion. (K-PS2-1)</p> <p>PS3.C: Relationship Between Energy and Forces A bigger push or pull makes things speed up or slow down more quickly. (secondary to K-PS2-1)</p>	<p>moving objects run into each other?</p>	<p>During: Give students opportunities with toy cars, swings, balls, etc. to demonstrate and explain the effects of push and pull.</p> <p>After: Students will draw a picture representing a push and pull; they will dictate to an adult what is happening in each picture bases on a rubric which addresses the essential questions.</p>	<p>Key details Length Less of Measureable attributes More of More quickly Motion of an object Plan Pressure Provide data Pulls Pushes Reason Slow down Speed Touch Weight</p>	<p>ing+forceful Rope(play tug of war to represent effect of pull)</p> <p>Marbles (Experiment with interactions of two objects)</p> <p>More Ideas on Motion http://www.teachjunkie.com/filing-cabinet/free-download/19-fun-ideas-resources-force-and-motion/</p> <p>Pushes and Pulls: https://jr.brainpop.com/science/forces/pushesandpulls/</p> <p>Go Math Chapter 12- STEM Activities: Forces</p> <p>‘Which objects will roll?’ experiment</p> <p>‘Sink or float’ experiment</p> <p>Analyze data to determine if a design (ramp) works to change the speed or direction of an object with a push or pull.</p> <p>Books:</p> <ul style="list-style-type: none"> • Motion Push and Pull Fast and Slow • Push and Pull 	<p>It: Make A Ramp)</p> <p>Pull Project- Students will pull 4 different covered boxes. The class will discuss what could be in the box was it easy or hard to box.</p> <p>Airplane- Students will design and fly their own airplanes.(p. 32 Engineer It: Build An Airplane)</p>
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Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p>Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> Analyze data from tests of an object or tool to determine if it works as intended. (K-PS2-2) 	<p>Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes. (K-PS2-1),(K-PS2-2)</p>	<p>RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-PS2-2)</p> <p>W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1)</p> <p>SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.</p>	<p>MP.2 Reason abstractly and quantitatively. (K-PS2-1)</p> <p>K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1)</p> <p>K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of?”/”less of” the attribute, and describe the difference. (K-PS2-1)</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources	Project Based Learning
<p>Students who demonstrate understanding can:</p> <p>K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.* [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and</p>	<p>PS2.A: Forces and Motion Pushes and pulls can have different strengths and directions. (K-PS2-1),(K-PS2-2)</p> <p>Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (K-PS2-1),(K-PS2-2)</p> <p>ETS1.A: Defining</p>	<p>What happens when objects touch, collide, or push on one another?</p>	<p>Before: Create a KWL chart after review the previous month’s objective.</p> <p>During: Observe the students in various activities that integrate hands on activities that provide a medium for students to increase and/or decrease speed of an object.</p>	<p>Analyze Attribute Causes Change Collide Compare Create Data Describe Determine Directions Gather Key details Length Less of Measureable attributes More of</p>	<p>Science Journals.</p> <p>KWL Chart.</p> <p>More Ideas on Motion http://www.teachjunkie.com/filing-cabinet/free-download/19-fun-ideas-resources-force-and-motion/ Worksheet: Bend it, Squish it, Stretch it https://www.greatschools.org/gk/worksheets/bend-it-stretch-it-squash-it/</p> <p>Fast and Slow Motion https://www.greatschools.org/gk/worksheets/fast-and-slow-motion/</p> <p>Books: Dahl, Michael. <i>Roll, Slope, and Slide: A</i></p>	<p>Task: Plan and conduct an investigation about the speed of objects by making a ramp. (p. 45-46 – Engineer It: Make A Ramp)</p>

<p>knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [<i>Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.</i>]</p>	<p>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. (secondary to K-PS2-2)</p>		<p>Introduce variables that incorporate touch, push and colliding in their investigation.</p> <p>After: Students will be able to describe the effects of touch, push, pull and colliding using a familiar object through writing or drawing in their science journals using a rubric which addresses the essential questions.</p>	<p>Motion Pulling Pulls Pushes Pushing Reason Situation Solutions Speed Strengths Support ideas Touch Weight</p>	<p><i>Book About Ramps.</i></p> <p>Stille, Darlene R. <i>Motion: Push and Pull, Fast and Slow.</i></p>	
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Unit 3: Physical Science (Forces and Interactions: Pushes & Pulls)	
Task: Plan and conduct an investigation about the speed of objects by making a ramp.	
Project Based Learning Scoring Rubric	
3	States a claim supported with evidence that the slope of a ramp changes the speed of an object
2	States a claim somewhat supported with evidence that the slope of a ramp changes the speed of a toy car
1	States a claim that is not supported by evidence
0	Does not state a claim and does not provide evidence

Time Frame: March – June

Unit 4: Life Science (Interdependent Relationships in Ecosystems: Animals, Plants, & their Environments)

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p>Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1) <p>Scientific Knowledge is Based on Empirical Evidence Scientists look for patterns and order when making observations about the world. (K-LS1-1)</p>	<p>Patterns Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. (K-LS1-1)</p>	<p>W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-LS1-1)</p>	<p>K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/”less of” the attribute, and describe the difference. (K-LS1-1)</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Question	Assessments	Vocabulary	Resources
<p>Students who demonstrate understanding can:</p> <p>K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have</p>	<p>LS1.C: Organization for Matter and Energy Flow in Organisms All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)</p>	<p>-What is the same and different on what is needed for plants and animals to survive?</p>	<p>Before: Students will create a picture on what they think they need to live.</p> <p>During: Students will compare and contrast the things plants and animals need to live.</p> <p>After: Students will</p>	<p>Analyze Animals needs Common Compare Describe Difference Evidence Food Grow Human designed world Humans Key details Less of</p>	<p>Science Journals. KWL Chart T-Charts of Essential Question What do Plants need to grow Activities http://www.simplyscience.com/Kindergarten.html Worksheet: Animal Homes https://www.greatschools.org/gk/worksheets/animal-homes/ Feed Me: Living Things need food https://www.greatschools.org/gk/worksheets/feed-</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Question	Assessments	Vocabulary	Resources
light; and, that all living things need water.]			<p>create a final drawing and journal entry comparing and contrasting what humans and plants need to survive.</p> <p>(Students will design a park that has everything plants and animals need to survive p. 131)</p>	<p>Light Live Living things Measurable attributes More of Natural world Needs Obtain Order Patterns Plants needs Survive Water</p>	<p>me/</p> <p>Animal Homes That Are Just Right https://www.greatschools.org/gk/worksheets/animal-homes-that-are-just-right/</p> <p>Books:</p> <ul style="list-style-type: none"> • Martin Jr., Bill. <i>Brown bear, Brown Bear, What do you See?</i> • Carle, Eric. <i>A House for Hermit Crab.</i> • Carle, Eric. <i>The Very Hungry Caterpillar.</i> • Caring about the Earth (Reading a to z) • 10 Things I Can Do To Help My World • Michael Recycle • The Earth and I (SS and ELA) • What Do Living Things Need? • Living!

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p>Engaging in Argument from Evidence</p> <p>Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s).</p> <ul style="list-style-type: none"> • Construct an argument with evidence to support a claim. (K-ESS2-2) 	<p>Systems and System Models</p> <p>Systems in the natural and designed world have parts that work together. (K-ESS2-2),(K-ESS3-1)</p>	<p>RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-ESS2-2)</p> <p>W.K.1 Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book. (K-ESS2-2)</p> <p>W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they</p>	<p>K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/”less of” the attribute, and describe the difference. (K-LS1-1)</p>

		name what they are writing about and supply some information about the topic. (K-ESS2-2)	
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Next Generation Science Standards	Disciplinary Core Ideas	Essential Question	Assessments	Vocabulary	Resources	Project Based Learning
<p>Students who demonstrate understanding can:</p> <p>K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.]</p>	<p>ESS2.E: Bio-geology Plants and animals can change their environment. (K-ESS2-2)</p>	<p>-What do humans and animals do to change their environment, and what do they effect when they do this?</p>	<p>Before: Teacher will show pictures of before and after of different construction sites, or environments. Students will comment on the differences.</p> <p>During: Students will be observed through various activities that explore changes to the environment to meet needs.</p> <p>After: Students will draw a picture and write a description on how the chosen environment was changed and why.</p>	<p>Analyze Change Common Compare Construct Describe Designed world Difference Effect Environment Evidence Key details Less of Measurable attributes More of Natural world Opinion Order Patterns Systems Topic</p>	<p>Science Journals. KWL Chart. T-Chart and Venn-diagrams to make comparisons. Virtual Field Trip http://bookbuilder.cast.org/view_print.php?book=26258</p>	<p>Task: Children will explore patterns and make observations about the things plants need to grow and stay healthy. (p. 79-Plant Needs)</p> <p>Task: Create a poster that emphasizes the importance of recycling and waste reduction.</p> <p>Task: Students will use recycled items create something new!</p>

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p>Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.</p> <ul style="list-style-type: none"> Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (K-ESS3-3) 	<p>Cause and Effect Events have causes that generate observable patterns. (K-ESS3-3)</p> <p>Systems and System Models Systems in the natural and designed world have parts that work together. (K-ESS2-2),(K-ESS3-1)</p>	<p>W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. (K-ESS3-3)</p>	<p>MP.2 Reason abstractly and quantitatively. (K-ESS3-1)</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
<p>Students who demonstrate understanding can:</p> <p>K-ESS3-1 Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]</p> <p>K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land,</p>	<p>ESS3.C: Human Impacts on Earth Systems Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3)</p> <p>ETS1.B: Developing Possible Solutions</p>	<p>-What impacts do people (humans) have on the world around them?</p> <p>-How can people (humans) help the world around them?</p>	<p>Before: Think-pair-share about the vocabulary.</p> <p>During: Students will make observations about the world around them and the impacts humans have on the world around them.</p> <p>After: Students will create posters to promote helping the world around them.</p>	<p>Affect Air Animals Communicate solutions Convey Events Explanatory Human designed Impact Informative Land Living things Model Natural Needs Observable patterns People (humans) Places to live Plants</p>	<p>Science Journals.</p> <p>KWL Chart.</p> <p>Books: Dr. Seuss. <i>The Lorax</i>. Random House Children’s Books.</p> <p>Klienberg, Naomi. <i>Plant a Tree For Me</i>.</p> <p>Child, Lauren. <i>Charlie and Lola: We Are Extremely Very Good Recyclers</i>.</p> <p>Parr, Todd. <i>The Earth Book</i>. Little</p> <p>Asch, Frank. <i>The Earth and I</i>.</p> <p>Inches, Allison. <i>I can save the Earth</i>. Little Simon.</p>

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
water, air, and/or other living things in the local environment.* [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.]	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. <i>(secondary to K-ESS3-3)</i>			Reason Reduce Represent Solutions Systems Water	Butterfly Kits <ul style="list-style-type: none"> • Butterflies • From Caterpillar to Butterfly

Unit 4: Life Science (Interdependent Relationships in Ecosystems: Animals, Plants, & their Environments)	
Task: Children will explore patterns and make observations about the things plants need to grow and stay healthy.	
Project Based Learning Scoring Rubric	
3	States a claim supported with evidence that plants need sunlight, water, and air to live and grow
2	States a claim somewhat supported with evidence that plants need sunlight, water, and air to live and grow
1	States a claim that is not supported by evidence
0	Does not state a claim and does not provide evidence