

Science Unit	1 <sup>st</sup> Grade- Nature of Science
Engineering Unit	Nature of Science & Engineering (NSE) How Do Engineers Work Together
Timeline	
Science Standards	<p>SC.1. N.1.1 Raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations.</p> <p>SC.1.N.1.2 Using the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations with others.</p> <p>SC.1.N.1.3 Keep records as appropriate such as pictorial and written records of investigations conducted.</p> <p>SC.1.N.1.4 Ask "how do you know?" in appropriate situations. <b>Standards for Engineering Design</b></p> <p>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.</p> <p>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 problem.</p> <p>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.</p>
Essential Questions	<ul style="list-style-type: none"> <li>• What does an engineer do and how do they collaborate?</li> <li>• How do engineers design solutions to problems?</li> <li>• What is a scientist?</li> <li>• What tools do scientists use to observe and measure?</li> <li>• How are scientists and engineers similar and different?</li> </ul>
Science Vocabulary	Engineer, scientist, observations
ELA Text	<i>Mary Poppins, Friend Ship, My Five Senses, Cook a Doodle Do, Listen Buddy, Being a Scientist, The Wind Blew, Boy and Bot</i>
Investigations	Introduction of Ozobots Observation tools and measurement Sorting Objects by property
Engineering Design Challenge	<i>Hat Design Challenge</i> <i>Design a planter box (?)</i>

Science Unit	Physical Science
Engineering Unit	Classification of Objects based on properties and how they move. Exploring Gravity
Timeline	
<b>Science Standards</b>	<p><b>SC.1.E.6.2</b> Describe the need for water and how to be safe around water.</p> <p><b>SC.1.E.5.2</b> Explore the Law of Gravity by demonstrating that Earth’s gravity pulls any object on or near Earth toward it even though nothing is touching the object.</p> <p><b>SC.1.P.8.1</b> Sort objects by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light), texture, and whether objects sink or float.</p> <p><b>SC.1.P.12.1</b> Demonstrate and describe the various ways that objects can move, such as in a straight line, zigzag, back-and-forth, round and-round, fast, and slow.</p> <p><b>SC.1.P.13.1</b> Demonstrate that the way to change the motion of an object is by applying a push or a pull.</p> <p><b>SC.1.N.1.4</b> Ask “how do you know?” in appropriate situations.</p> <p><b>SC.1.N.1.3</b> Keep records as appropriate— such as pictorial and written records—of investigations conducted.</p> <p><b>SC.1.N.1.1</b> Raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations.</p>
<b>Essential Questions</b>	<ul style="list-style-type: none"> <li>• What types of water are found on earth?</li> <li>• How do living things use water?</li> <li>• How can I be safe around water?</li> <li>• How do things move?</li> <li>• What objects float or sink?</li> </ul>
<b>Science Vocabulary</b>	Force (balanced and unbalanced), gravity, sink, float, push, pull, motion, zigzag, fast, slow, direction, speed
<b>Investigations</b>	<p>How things move- exploring with objects, pushing with straws, etc.</p> <p>Sink vs. Float with objects</p> <p>Measurement</p>
<b>ELA Text</b>	<p>Article- Water Safety, Titanic, Who Sank the Boat?, Comparing Bodies of Water, Simply Science Water, Push and Pull, Sources of water</p> <p>Journeys “The Big Trip”, “Whistle for Willie</p> <p>Readworks- Movement Articles</p> <p>Epic Books: Stop and Go, Fast and Slow: Moving Objects in Different Ways</p>
<b>Engineering Design Challenge</b>	<p><i>How can I build a boat that will float and hold a load?</i></p> <p><i>Kite Design Challenge</i></p>

Science Unit	Earth Science	
Engineering Unit	Natural Resources (NR) – Earth’s Structures	Space Exploration (SE) – Sun and Stars
Timeline	December-January	January-February
Science Standards	<p>SC. 1.E.6.1 Recognize that water, rocks, soil, and living, organisms are found on Earth's surface.</p> <p>SC.1.E.6.2 Describe the need for water and how to be safe around water.</p> <p>SC.1.E.6.3 Recognize that some things in the world around us happen fast and some happen slowly.</p>	<p>SC 1.E.5.1 Observe and discuss that there are more stars in the sky than anyone can easily count and that they are not scattered evenly in the sky.</p> <p>SC.1.E.5.2 Explore the Law of Gravity by demonstrating that Earth’s gravity pulls any object on or near Earth toward it even though nothing is touching the object. (Taught prior to Force and Motion)</p> <p>SC.1.E.5.3 Investigate how magnifiers make things appear bigger and help people see things they could not see without them.</p> <p>SC.1.E.5.4 Identify the beneficial and harmful properties of the Sun.</p> <p>SC.1.L.17.1 Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space.</p>
Essential Questions	<ul style="list-style-type: none"> <li>• What makes up the Earth’s surface?</li> <li>• Why do we need water?</li> <li>• What changes are fast or slow?</li> <li>• How does gravity impact us?</li> </ul>	<ul style="list-style-type: none"> <li>• What is in the night sky?</li> <li>• How do tools help us understand stars and where they are found?</li> <li>• How can the sun be both beneficial and harmful?</li> <li>• How can we design solutions to protect from the sun and weather elements?</li> </ul>
Science Vocabulary	Rocks, soil, organisms, changes	Sun, energy, solar energy, light, heat, star, constellations, heat, thermometer, harmful, beneficial,
Investigations	<p>Soil observations- Hand lens</p> <p>Mass- Using Balance scales</p> <p>Sheep in a Jeep</p>	<p>Star Lab</p> <p>Reading a thermometer</p> <p>Measuring temperature on various surfaces and materials</p>
ELA Text		<p>What Makes Day and Night</p> <p>Stargazers- Gail Gibbons</p> <p>Energy from the Sun</p> <p>Rookie Read About Science</p> <p>Twinkle –Nick Bland (Great Read Aloud idea)</p>
Design Challenge	Design a way to prevent fast changes at school.	Create a doghouse that protects the animal from weather conditions.

Science Unit	Life Science	
Engineering Unit	Life Processes (LP) Ecosystems (ECO)	
Timeline	March-April	
<b>Science Standards</b>	<p><b>SC.1.L.14.1</b> Make observations of living things and their environment using the five senses.  <b>SC.1.L.14.2</b> Identify the major parts of plants, including stem, roots, leaves, and flowers.  <b>SC.1.L.14.3</b> Differentiate between living and nonliving things.  <b>SC.1.L.16.1</b> Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population.  <b>SC.1.L.17.1</b> Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space.  <b>SC.1.N.1.2</b> Using the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion and compare their observations with others.  <b>SC.1.N.1.4</b> Ask “how do you know?” in appropriate situations.</p>	
<b>Essential Questions</b>	<ul style="list-style-type: none"> <li>• What observations can I make using my senses?</li> <li>• How do I know if something is living or nonliving?</li> <li>• What are the basic needs of all living things?</li> <li>• What are the characteristics of plants?</li> <li>• Who am I like?</li> <li>• How do plants and animals grow and change?</li> <li>• How can I design a garden, so plants will survive, and animals will find food?</li> </ul>	
<b>Science Vocabulary</b>	Living, non-living , environment, stem, roots, leaves, flowers, needs, senses,	
<b>Investigations</b>	Observing Meal worms Observations- Physical properties	
<b>ELA Text</b>	<ul style="list-style-type: none"> <li>• What’s Alive</li> <li>• Caterpillar Diary</li> <li>• See How the Grow: Butterfly</li> <li>• Leaping Frogs</li> <li>• A Butterfly is Born</li> </ul>	<ul style="list-style-type: none"> <li>• Tadpole Diary</li> <li>• Tops and Bottoms</li> <li>• We Can Eat Plants</li> </ul>
<b>Engineering Design Challenge</b>	<i>Design a planter box</i>	