

Science Unit	Life Science		
Engineering Unit	Animals as Engineers (KLP)	Animals as Engineers (KECO)	Pumpkins/ What to do with a box?
Timeline	August – September	September - October	October
Science Standards	SC.K.L.14.1 – The students will recognize the five senses and related body parts. SC.K.L.14.2 – The students will recognize that some books and other media portray animals and plants with characteristics and behaviors they do not have in real life. SC.K.L.14.3 – The students will observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.		Observe and create a visual representation of an object which includes its major features. (Standard #: SC.K.N.1.4)
Essential Questions	KLP 1: How do an animal’s adaptations affect how it grows and what it eats? KLP 2: What is the importance of the animal characteristics? KLP 3: How do animals live in their natural habitat? KLP 4: What does the life cycle of an animal look like? KLP5: What is the importance of the animal characteristics? KLP6: How does animal’s adaptations affect how it grows, what it does and what it eats?	KECO1: How do the components of the environment affect what lives there? KECO 2: How have animals body parts adapted to their environment? KECO 3: How do animals senses affect where it lives? KECO 4: How do the components of the environment affect what lives there? KECO 5: How does non-fiction/fiction text describing living things?	Observe and create a visual representation of an object which includes its major features. (Standard #: SC.K.N.1.4)
Science Vocabulary	Environment, Habitat, Senses, Similar		Model, Similar, Plan, Design, Check, Share
Investigations	How do animal characteristics inspire engineering design?	How does the environment affect the animals that live in a habitat?	How can we make a design that follows our plan?
Design Challenge	<i>Create a visual life cycle model to represent the classroom engineer mascot</i>	<i>How can we reduce waste by recycling?</i>	<i>Box- Change a box to represent something else.</i> <i>Pumpkin – Paint your pumpkin to match your pumpkin Blueprint.</i>

	Nature of Science
Engineering Unit	Nature of Science & Engineering (KNSE)
Timeline	August - October
Science Standards	<p><i>Next Generation Science Standards</i></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> <p>SC.K.N.1.1: The students will collaborate with a partner to collect information.</p> <p>SC.K.N.1.3: The students make observations of the natural world and know that they are descriptors collected using the five senses.</p> <p>SC.K.N.1.3: The students keep records as appropriate –such as pictorial records—of investigations conducted.</p> <p>SC.K.N.1.4: The students will observe and create a visual representation of an object which includes its major features.</p> <p>SC.K.N.1.5: The students will recognize that learning can come from careful observation.</p>
Essential Questions	<p>KNSE 1 – KNSE 6: How do the five senses help humans and animals?</p> <p>KNSE 7: How do you use five senses in the natural world?</p> <p>KNSE 8: Why do scientist, engineers, and inventors use their senses? What is the importance of improving the way of life?</p> <p>KNSE 9 – KNSE 10: How and why is the Jamerson Design Process used?</p>
Science Vocabulary	Observe, Investigate, Explain, Explore, Describe, Predict, Change, Compare
Investigations	How do scientists use their senses to observe and record?
Engineering Design Challenge	<i>Demonstrate understanding of the five senses and how scientists use them to observe.</i>

Science Unit	Physical Science
Engineering Unit	<i>Goldilocks and the Three Bears (KG3B)</i>
Timeline	November - December
Science Standards	<p><u>Next Generation Science Standards</u></p> <p>K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.</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.</p> <p>SC.K.P.8.1 – The students will sort objects by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light) and texture.</p> <p>SC.K.P.9.1 – The students will recognize that the shape of materials such as paper and clay can be changed by cutting, tearing, crumpling, smashing, or rolling.</p> <p>SC.K.P.10.1 – The students will observe that things that make sound vibrate.</p> <p>SC.K.N.1.1 – The students will collaborate with a partner to collect information.</p> <p>SC.K.N.1.5 – The student will recognize that learning can come from careful observation.</p> <p>SC.K.P.12.1 – The students will investigate that things move in different ways, such as fast, slow, etc.</p> <p>SC.K.P.13.1 – The students observe that a push or a pull can change the way an objects is moving.</p> <p>SC.K.L.14.3 – The students will observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.</p>
Essential Questions	<p>KG3B1 – How does the amount of mass affect the amount of force being applies? How does the property of materials affect structure?</p> <p>KG3B2 – How can we use the steps of the Jamerson Design Process to solve problems?</p> <p>KG3B3 – How are animal habitats affected by animals and plants?</p> <p>KG3B4 – How can temperature change within an object?</p> <p>KG3B5 - How do the properties of materials affect structures? What is force (push / pull) and what effects does it have?</p> <p>KG3B6 – What is force and what effects does it have?</p> <p>KG3B7 – How does the amount of mass affect the amount of force being applied? How doing the properties of materials affects the structures?</p> <p>KG3B8 – How does the amount of mass affect the amount of force being applied?</p> <p>KG3B10 – How do the properties of materials affect the structures?</p> <p>KG3B11 – How can we the steps of the Jamerson Design Process to solve problems? How do the properties of materials affect the structure?</p> <p>KG3B12 – How do the properties of materials affect the structures? How does the amount of mass affect the amount of force being applied? How can we use the Jamerson Design Process to solve problems?</p>
Science Vocabulary	Push, pull, liquid, measure, mass, solid, temperature
Investigations	How do different materials respond to pushes and pulls?
Engineering Design Challenge	<i>Design a Just Right Chair for Goldilocks</i>

Science Unit		
Engineering Unit	The North Wind & the Sun (KWC)	Three Billy Goats Gruff (K3BBG)
Timeline	January	February
Science Standards SC.K.E.5.2 – The students will recognize the repeating pattern of day and night. SC.K.E.5.3 – The students will recognize that the Sun can only be seen in the daytime. SC.K.E.5.4 – The students will observe that sometimes the moon can be seen at night and sometimes during the day. SC.K.E.5.5 – The students will observe that things can be big and things can be small as seen from the Earth. SC.K.E.5.6 – The students will observe that some objects are far away and some are nearby as seen from the Earth. <u>Next Generation Science Standards</u> K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface. K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time. K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.		SC.K.E.5.1 – The students will explore the Law of Gravity by investigating how objects are pulled toward the ground unless something holds them up. Vibrations standards Plastic goats- find the mass Properties of Mass- Heavy/Light
Essential Questions KWC1 - What do we notice about the sun? KWC2 – How do objects change in the sunlight and shade? KWC3 – How can we design a structure to provide shade? KWC4 – How do weather conditions change over time? KWC5 – How do hurricanes affect our local community? How does weather forecasting benefit us?		KBGG1 – Compare and contrast various elements of a story? KBGG2 – What are basic needs? KBGG3 - KBGG4 – How do the properties of materials affect structures? KBGG5 - How do the properties of materials effect structures? What force (push or pull) affects everything? KBGG6 – What are the basic needs? KBGG7-KBGG8 – Why is the crop rotation important?
Science Vocabulary		
Investigations	Observe patterns of sunrise/sunset, moon phases, and temperature	Exploring with bridge structures

Engineering Design Challenge	<i>Design a Structure to Provide Shade</i>	<i>Design a Bridge</i>
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Science Unit	Physical Science	
Engineering Unit	<i>Three Little Pigs (K3LP)</i>	
Timeline	March - April	
Science Standards	<p>Next Generation Science Standards</p> <p>K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.</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.</p> <p>SC.K.P.8.1 – The students will sort objects by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light) and texture.</p> <p>SC.K.P.9.1 – The students will recognize that the shape of materials such as paper and clay can be changed by cutting, tearing, crumpling , smashing, or rolling.</p> <p>SC.K.P.10.1 – The students will observe that things that make sound vibrate.</p> <p>SC.K.N.1.1 – The students will collaborate with a partner to collect information.</p> <p>SC.K.N.1.5 – The student will recognize that learning can come from careful observation.</p> <p>SC.K.P.12.1 – The students will investigate that things move in different ways, such as fast, slow, etc.</p> <p>SC.K.P.13.1 – The students observe that a push or a pull can change the way an objects is moving.</p> <p>SC.K.L.14.3 – The students will observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.</p>	
Essential Questions	<ul style="list-style-type: none"> • How do fiction and non-fiction pigs compare (using The Three Little Pigs)? • How do engineers select materials based on their properties? • How do the direction and size of a force affect motion? • How do engineers design and test homes? 	
Science Vocabulary	Push, pull, liquid, measure, mass, solid, temperature	
Investigations	How do different materials respond to pushes and pulls?	
Engineering Design Challenge	<i>Design a Home That Won't Fall Down In the Wind</i>	

Engineering Unit	Physical Science
Timeline	<i>Sound</i>
Science Standards	May
Essential Questions	<p><u>Next Generation Science Standards</u> SC.K.P.10.1</p> <p>Observe that things that make sound vibrate.</p>
Science Vocabulary	Sound, Vibration, Pitch, Amplitude, Frequency
Investigations	How can we create and manipulate sound?
Engineering Design Challenge	Make a musical Instrument.