Performance Expectation *and Louisiana Connectors*
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. ***LC-K-PS2-1a Identify the effect caused by different strengths or directions of pushes and pulls on the motion of an object.*** ***LC-K-PS2-1b Explain the effect of pushes and pulls on the motion of an object.*** ***LC-K-PS2-1c Identify the effect of different strengths and directions of pushes and pulls on the motion of an object.*** ***LC-K-PS2-1d Compare different strengths or different directions of pushes and pulls on an object.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
Planning and carrying out investigations: Planning and carrying out investigations to answer questions (science) or test solutions (engineering) 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. • With guidance, plan and conduct an investigation in collaboration with peers. ***With guidance, plan a simple investigation with peers.*** ***With guidance, conduct a simple investigation with peers.***	**FORCES AND MOTION** Pushes and pulls can have different strengths and directions. (LE.PS2A.a) ***An object can be pushed or pulled with different strengths.*** ***An object can be pushed or pulled from different directions.*** Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (LE.PS2A.b) ***Pushing and pulling an object can change how it moves.*** ***Pushes and pulls can start or stop the motion of an object.*** ***Pushing or pulling on an object can change its position or motion.*** **TYPES OF INTERACTIONS** When objects touch or collide, they push on one another and can change motion. (LE.PS2B.a) ***A push or pull can be caused by objects touching or colliding.*** ***When objects touch or collide, the motion of the objects can change.*** **RELATIONSHIP BETWEEN ENERGY AND FORCES** A bigger push or pull makes things speed up or slow down more quickly. (LE.PS3C.a) ***A bigger push or pull can impact an object more than a smaller push or pull.***	**CAUSE AND EFFECT** Simple tests can be designed to gather evidence to support or refute student ideas about causes. ***Simple tests can be designed to gather evidence about cause and effect relationships.*** ***Evidence from simple tests can support ideas about causes.*** ***Evidence from simple tests can refute ideas about causes.***

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, or two objects colliding and pushing on each other. Content includes contact forces with different relative strengths or different directions, but not both at the same time.

Performance Expectation *and Louisiana Connectors*
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. ***LC-K-PS2-2a Identify if something designed to push or pull an object makes it move the way it is intended.*** ***LC-K-PS2-2b Identify if something designed to change the speed of an object makes it move the way it is intended.*** ***LC-K-PS2-2c Identify if something designed to change the direction of an object makes it move the way it is intended.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
Analyzing and interpreting data: Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Analyze data from tests of an object or tool to determine if it works as intended. ***Determine how well the design works as intended based on data.***	**FORCES AND MOTION** Pushes and pulls can have different strengths and directions. (LE.PS2A.a) ***An object can be pushed or pulled with different strengths.*** ***An object can be pushed or pulled from different directions.*** Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (LE.PS2A.b) ***Pushing and pulling an object can change how it moves.*** ***Pushes and pulls can start or stop the motion of an object.*** ***Pushing or pulling on an object can change its position or motion.*** **ENGINEERING DESIGN** 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. (LE.ETS1A.a) ***People can make plans to solve a problem.*** ***Tools or objects can be used to solve a simple problem.*** ***Engineers use technology to help people solve problems or develop solutions to problems.*** ***Engineers design devices or other items to help people solve problems.***	**CAUSE AND EFFECT** Simple tests can be designed to gather evidence to support or refute student ideas about causes. ***Simple tests can be designed to gather evidence about cause and effect relationships.*** ***Evidence from simple tests can support ideas about causes.*** ***Evidence from simple tests can refute ideas about causes.***

Clarification Statement
Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, or knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object, a structure that would cause an object such as a marble or ball to turn or using a rope or string to pull an object. Content does not include friction as a mechanism for change in speed.

Performance Expectation *and Louisiana Connectors*
K-PS3-1 Make observations to determine the effect of sunlight on Earth's surface. ***LC-K-PS3-1a Identify examples of sunlight heating different surfaces on Earth.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
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) and/or measurements of a proposed object or tool or solution to determine if it solves a problem or meets a goal. ***Make observations of proposed tools or objects to decide if they solve a problem.*** ***Take measurements of proposed tools or objects to decide if they solve a problem.*** ***Make observations of a proposed solution to decide if it solves a problem.*** ***Take measurements of a proposed solution to decide if it solves a problem.***	**CONSERVATION OF ENERGY AND ENERGY TRANSFER** Sunlight warms Earth's surface. (LE.PS3B.a) ***Sunlight feels warm.*** ***Sunlight warms the surface of the Earth.*** ***When sunlight hits an object, the light energy can become heat energy.***	**CAUSE AND EFFECT** Events have causes that generate observable patterns. ***One event can cause another event to occur. Sometimes this produces a pattern of events.***

Clarification Statement
Sunlight heats Earth's natural surfaces including sand, soil, rocks, or water and the unnatural surfaces including man-made objects like plastics, asphalt, or concrete. Examples of observations could be relative changes in temperature of surfaces exposed to sunlight.

Performance Expectation *and Louisiana Connectors*
K-PS3-2 Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. ***LC-K-PS3-2a Identify a design structure (e.g., umbrella, canopy, tent) that will reduce the warming caused by the sun.*** ***LC-K-PS3-2b Identify tools and materials that can be used to build a structure that will reduce the warming effect of sunlight on an area.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
Constructing explanations and designing solutions: Constructing explanations (science) and designing solutions (engineering) in K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem. ***Tools and materials can be used to design a device that solves a specific problem.*** ***Tools and materials can be used to design a device that can be a solution to a specific problem.*** ***Tools and materials can be used to build a device that solves a specific problem.*** ***Tools and materials can be used to build a device that can be a solution to a specific problem.***	**CONSERVATION OF ENERGY AND ENERGY TRANSFER** Sunlight warms Earth's surface. (LE.PS3B.a) ***Sunlight feels warm.*** ***Sunlight warms the surface of the Earth.*** ***When sunlight hits an object, the light energy can become heat energy.***	**CAUSE AND EFFECT** Simple tests can be designed to gather evidence to support or refute student ideas about causes. ***Simple tests can be designed to gather evidence about cause and effect relationships.*** ***Evidence from simple tests can support ideas about causes.*** ***Evidence from simple tests can refute ideas about causes.***

Clarification Statement
Examples of structures could include umbrellas, canopies, or tents that minimize the warming effect of the sun.

Performance Expectation *and Louisiana Connectors*
K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive. ***LC-K-LS1-1a Identify that animals need water and food to live and grow.*** ***LC-K-LS1-1b Identify that plants need water and light to live and grow.*** ***LC-K-LS1-1c Identify patterns of what living things need to survive.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
Analyzing and interpreting data: Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Use observations to describe patterns and/or relationships in the natural and designed world(s) in order to answer scientific questions and solve problems. ***Observations can be used to describe patterns.*** ***Observations can be used to describe relationships.*** ***Observations can be used to answer scientific questions.*** ***Observations can be used to solve problems.***	**ORGANIZATION FOR MATTER AND ENERGY FLOW IN ORGANISMS** All animals need food in order to live and grow. Animals obtain their food from plants or from other animals. Plants need water and light to live and grow. (LE.LS1C.a) ***Plants and animals are living things.*** ***All living things need water, air, and sunlight to survive.*** ***Animals need food to live and grow.*** ***Animals eat plants or other animals for food.*** ***Sunlight and water are essential for plant survival.***	**PATTERNS** Patterns in the natural and human-designed world can be observed, used to describe phenomena, and used as evidence. ***Patterns in the world (natural and human-designed) can be observed.*** ***Patterns in the world (natural and human-designed) can be used to describe phenomena.*** ***Patterns in the world (natural and human-designed) can be used as evidence.***

Clarification Statement
Examples of patterns could include that plants make their own food while animals do not, the different kinds of food needed by different types of animals, the requirement of plants to have light, or that all living things need water.

Performance Expectation *and Louisiana Connectors*
K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time. ***LC-K-ESS2-1a Identify patterns in weather conditions using observations of local weather.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
Analyzing and interpreting data: Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Use observations to describe patterns and/or relationships in the natural and designed world(s) in order to answer scientific questions and solve problems. ***Observations can be used to describe patterns.*** ***Observations can be used to describe relationships.*** ***Observations can be used to answer scientific questions.*** ***Observations can be used to solve problems.***	**WEATHER AND CLIMATE** Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. (LE.ESS2D.a) ***Weather can be observed and described (e.g., sunny, cloudy, rainy, warm, or cold).*** ***Weather is a combination of sunlight, wind, snow, or rain, and temperature.*** ***Snow is frozen ice crystals that fall from clouds when the temperature is below freezing.*** ***Rain is water that falls from the clouds when the temperature is above freezing.*** ***Hail and sleet are also forms of frozen precipitation.*** ***Weather can be observed, measured, and described through the use of simple tools such as a thermometer, rain gauge, and wind vane.*** ***By making observations about what the weather is like, patterns in local weather can be observed.*** ***Looking at the records of weather over time can help us find patterns.*** ***Weather doesn't always follow a pattern.***	**PATTERNS** Patterns in the natural and human-designed world can be observed, used to describe phenomena, and used as evidence. ***Patterns in the world (natural and human-designed) can be observed.*** ***Patterns in the world (natural and human-designed) can be used to describe phenomena.*** ***Patterns in the world (natural and human-designed) can be used as evidence.***

Clarification Statement
Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, or warm); examples of quantitative observations could include numbers of sunny, windy, or rainy days in a month. Examples of patterns could include that it is cooler in the morning than in the afternoon or the number of sunny days versus cloudy days in different months.

Performance Expectation *and Louisiana Connectors*
K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. ***LC-K-ESS2-2a Identify examples of how animals change their environments to meet their needs.*** ***LC-K-ESS2-2b Identify examples of how plants change their environments to meet their needs.*** ***LC-K-ESS2-2c Identify ways that humans can affect the environment in which they live.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
Engaging in argument from evidence: 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). • Construct an argument with evidence to support a claim. ***A claim must be supported with evidence.*** ***Observational data may be used to support claims.*** ***Numerical data may be used to support claims.***	**BIOGEOLOGY** Plants and animals can change their environment. (LE.ESS2E.a) ***An interconnectedness exists among the living and nonliving parts of an environment.*** ***This interconnectedness can be observed by the changes made by plants and animals in their environment.*** ***Living things can change the places they live to meet their needs.*** **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. (LE.ESS3C.a) ***People like to live comfortably.*** ***People can impact the environments that plants and animals live in.*** ***People can do things that reduce their impacts on the environments that plants and animals live in.***	**SYSTEMS AND SYSTEM MODELS** Systems in the natural and designed world have parts that work together. ***Systems and system models have many parts.*** ***Systems and system models can be used to understand the relationship between parts that work together.***

Clarification Statement
Examples of plants and animals changing their environment could include a squirrel digging in the ground to hide its food, tree roots breaking concrete, or a dandelion spreading seeds to generate more dandelions.

Performance Expectation *and Louisiana Connectors*
K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. ***LC-K-ESS3-1a Given a model (e.g., representation, diagram, drawing), describe the relationship between the needs of different animals and the places they live (e.g., deer eat buds and leaves and live in forests).***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
Developing and using models: Modeling in K-2 builds on prior experiences and progresses to include using and developing models (e.g., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions. • Develop and/or use a model to represent amounts, relationships, relative scales (bigger, smaller), and/or patterns in the natural and designed world(s). ***Models can be used to show relationships in the world (natural and human-designed).*** ***Models can be used to show different amounts or scales (bigger, smaller) in the world (natural and human- designed).*** ***Models can be used to show patterns in the world (natural and human-designed).***	**NATURAL RESOURCES** Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (LE.ESS3A.a) ***All living things need water, air, sunlight, and resources from the land to survive.*** ***Living things live where they have access to the things they need.*** ***Humans need resources from the land.***	**SYSTEMS AND SYSTEM MODELS** Systems in the natural and designed world have parts that work together. ***Systems and system models have many parts.*** ***Systems and system models can be used to understand the relationship between parts that work together.***

Clarification Statement
Examples of relationships could include that deer eat buds and leaves and therefore usually live in forested areas; grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.

Performance Expectation *and Louisiana Connectors*
K-ESS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for and respond to severe weather. ***LC-K-ESS3-2a Identify how weather forecasting can help people avoid the most serious impacts of severe weather events.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
Asking questions and defining problems: Asking questions (science) and defining problems (engineering) in K-2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Ask questions based on observations to find more information about the natural and/or designed world(s). ***Making observations of the world (natural and human-designed) leads to asking questions about why patterns exist.***	**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. (LE.ESS3B.a) ***Weather influences plants, animals, and human activity.*** ***Certain kinds of severe weather are more likely than others in some places.*** ***Severe weather includes hurricanes, tornados, and blizzards.*** ***Severe weather often has consequences for people.*** ***Heavy rains can also have consequences (flooding).*** ***Weather forecasting helps keep people safe.*** ***Predicting weather can help people better prepare.***	**CAUSE AND EFFECT** Events have causes that generate observable patterns. ***One event can cause another event to occur. Sometimes this produces a pattern of events.***

Clarification Statement
Emphasis is on local forms of severe weather and safety precautions associated with that severe weather.

Performance Expectation *and Louisiana Connectors*
K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. ***LC-K-ESS3-3a Identify different solutions that people can apply to the way they live to reduce the impact on the land, water, air, and other living things.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
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. • Communicate information or design ideas and/or solutions with others in oral and/or written forms using models, drawings, writing, or numbers that provide detail about scientific ideas, practices, and/or design ideas. ***Share information with others in oral or written forms.*** ***Share information with others using models.*** ***Share information with others using numbers.*** ***Share information that provides details about scientific ideas or practices.*** ***Share information that provides details about design ideas.***	**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. (LE.ESS3C.a) ***People like to live comfortably.*** ***People can impact the environments that plants and animals live in.*** ***People can do things that reduce their impacts on the environments that plants and animals live in.*** **DEVELOPING POSSIBLE SOLUTIONS** Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solution(s) to other people. (LE.ETS1B.a) ***Design solutions can be shared with others as sketches or drawings.*** ***Design solutions can be shared with others as models.*** ***It is important to communicate information about solutions with others.***	**CAUSE AND EFFECT** Events have causes that generate observable patterns. ***One event can cause another event to occur. Sometimes this produces a pattern of events.***

Science and Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
Share design ideas with others in oral or written forms. ***Share design ideas with others using models.*** ***Share design ideas with others using numbers.*** ***Share design ideas that provide details about scientific ideas or practices.*** ***Share solutions with others in oral or written forms.*** ***Share solutions with others using models.*** ***Share solutions with others using numbers.*** ***Share solutions that provide details about scientific ideas or practices.*** ***Share solutions that provide details about design ideas.***		

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.