Performance Expectation *and Louisiana Connectors*
2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. ***LC-2-PS1-1a Use data to describe different kinds of materials by their observable properties (e.g., color, texture).*** ***LC-2-PS1-1b Use data to classify different kinds of materials by their observable properties (e.g., color, texture).***

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. • Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question. ***Plan investigations collaboratively to produce data to answer a question.*** ***Conduct investigations collaboratively to produce data to answer a question.***	**STRUCTURE AND PROPERTIES OF MATTER** Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (LE.PS1A.c) ***Different kinds of matter exists.*** ***Matter is all around us and can be found as a solid or a liquid, depending on its temperature.*** ***Matter can be described by its observable properties.*** ***Matter can be classified by its observable properties.*** ***Materials can be described and classified according to the following physical properties: size, shape, mass, texture, color, and material composition.***	**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
Observations could include color, texture, hardness, or flexibility. Patterns could include the similar properties that different materials share.

Performance Expectation *and Louisiana Connectors*
2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. ***LC-2-PS1-2a Match a property of a material (e.g., hard, flexible, absorbent) to a potential purpose (e.g., hardness of a wooden shelf results in it being better suited for supporting materials than a soft sponge).***

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. • Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question. ***Plan investigations collaboratively to produce data to answer a question.*** ***Conduct investigations collaboratively to produce data to answer a question.***	**STRUCTURE AND PROPERTIES OF MATTER** Different properties are suited to different purposes. (LE.PS1A.a) ***Materials can have different properties (e.g., flexibility, hardness, texture).*** ***Properties of materials can be used to determine how a material could be used.*** ***The properties of materials influence their use.*** ***Some materials are more suitable for making a particular product or device.***	**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 properties could include strength, flexibility, hardness, texture, or absorbency.

Performance Expectation *and Louisiana Connectors*
2-PS1-3 Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. ***LC-2-PS1-3a Identify how a variety of objects can be built up from a small set of pieces.***

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. • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. ***Making observations can be used to gather information.*** ***Make observations to describe natural phenomena.*** ***Observational evidence can be used to describe natural phenomena.*** ***Observational evidence can be used to explain natural phenomena.***	**STRUCTURE AND PROPERTIES OF MATTER** Different properties are suited to different purposes. (LE.PS1A.a) ***Materials can have different properties (e.g., flexibility, hardness, texture).*** ***Properties of materials can be used to determine how a material could be used.*** ***The properties of materials influence their use.*** ***Some materials are more suitable for making a particular product or device.*** A great variety of objects can be built up from a small set of pieces. (LE.PS1A.b) ***Sometimes materials are used to make parts that can be put together to create a variety of objects.***	**ENERGY AND MATTER** Objects may break into smaller pieces, be put together into larger pieces, or change shapes. ***Objects can be broken down into smaller pieces.*** ***Objects can be built from a smaller set of pieces.*** ***Objects can be put together to form new shapes.***

Clarification Statement
Examples of pieces could include blocks, building bricks, or other assorted small objects. Provide students with the same number of objects to create a different object.

Performance Expectation *and Louisiana Connectors*
2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. ***LC-2-PS1-4a Identify examples of heating substances which cause changes that are sometimes reversible and sometimes not.*** ***LC-2-PS1-4b Identify examples of cooling substances which cause changes that are sometimes reversible and sometimes not.***

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. ***Construct an argument using a claim and support with evidence.*** ***Observational data may be used to support claims.*** ***Numerical data may be used to support claims.***	**CHEMICAL REACTIONS** Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. (LE.PS1B.a) ***Heating a substance may cause observable changes.*** ***Cooling a substance may cause observable changes.*** ***Sometimes changes to a substance from solid to liquid or liquid to solid can be reversed by heating or cooling.*** ***Sometimes changes to a substance from solid to liquid or liquid to solid cannot be reversed by heating or cooling.***	**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
Demonstrations of reversible changes could include materials such as water, butter or crayons at different temperatures. Demonstrations of irreversible changes could include cooking an egg, freezing a plant leaf, or heating paper.

Performance Expectation *and Louisiana Connectors*
2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow. ***LC-2-LS2-1a Use data to describe that plants need water and light to grow.***

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. • Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question. ***Plan investigations collaboratively to produce data to answer a question.*** ***Conduct investigations collaboratively to produce data to answer a question.***	**INTERDEPENDENT RELATIONSHIPS IN ECOSYSTEMS** Plants depend on water and light to grow. (LE.LS2A.a) ***Plants are living things that need sunlight and water to grow.***	**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 testing one variable at a time during investigations.

Performance Expectation *and Louisiana Connectors*
2-LS2-2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. ***LC-2-LS2-2a Identify that plants need animals to move their seeds around.*** ***LC-2-LS2-2b Identify a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.***

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, storyboard) that represent concrete events or design solutions. • Develop a simple model based on evidence to represent a proposed object or tool. ***Develop a model to represent a proposed object.*** ***Develop a model to represent a proposed tool.***	**INTERDEPENDENT RELATIONSHIPS IN ECOSYSTEMS** Plants may depend on animals for pollination or to move their seeds around. (LE.LS2A.b) ***Plants depend on insects and animals to help with pollination in order for more plants to grow.*** ***Plants depend on insects and animals to help with seed dispersal in order for more plants to grow.***	**STRUCTURE AND FUNCTION** The shape and stability of structures of natural and designed objects are related to their function(s). ***The shape of structures in the world (natural and human-designed) are related to their function(s).*** ***The stability of structures in the world (natural and human-designed) are related to their function(s).*** ***Shape and stability are related for a variety of structures.***

Clarification Statement
Students could use the model to describe: (1) How the structure of the model gives rise to its function; and (2) Structure-function relationships in the natural world that allow some animals to disperse seeds or pollinate plants.

Performance Expectation *and Louisiana Connectors*
2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats. ***LC-2-LS4-1a Make observations to explain that different kinds of living things live in different habitats on land and in water.***

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. • Make observations and/or measurements to collect data that can be used to make comparisons. ***Make observations to collect data.*** ***Use data to make comparisons.***	**BIODIVERSITY AND HUMANS** There are many kinds of living things in any area, and they exist in different places on land, in water, and in air. (LE.LS4D.a) ***Around the world, plants and animals live in a variety of places on land, in water, and in air.*** ***There are several different land habitats (e.g., garden, forest, and dessert) and water habitats (e.g., swamp, pond, lake, and stream).*** ***Different types of plants are found in different habitats.*** ***Different animals live in different habitats.***	**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
Emphasis is on the diversity of living things in each of a variety of different habitats. Students could explore different habitats in the community (e.g., school, aquariums, and neighborhoods).

Performance Expectation *and Louisiana Connectors*
2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats. ***LC-2-LS4-1a Make observations to explain that different kinds of living things live in different habitats on land and in water.***

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. • Make observations and/or measurements to collect data that can be used to make comparisons. ***Make observations to collect data.*** ***Use data to make comparisons.***	**BIODIVERSITY AND HUMANS** There are many kinds of living things in any area, and they exist in different places on land, in water, and in air. (LE.LS4D.a) ***Around the world, plants and animals live in a variety of places on land, in water, and in air.*** ***There are several different land habitats (e.g., garden, forest, and dessert) and water habitats (e.g., swamp, pond, lake, and stream).*** ***Different types of plants are found in different habitats.*** ***Different animals live in different habitats.***	**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
Emphasis is on the diversity of living things in each of a variety of different habitats. Students could explore different habitats in the community (e.g., school, aquariums, and neighborhoods).

Performance Expectation *and Louisiana Connectors*
2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly. ***LC-2-ESS1-1a Use evidence to understand that some Earth events happen quickly and can be observed (e.g., flood, volcano eruption, earthquake, or erosion of soil).*** ***LC-2-ESS1-1b Use evidence to understand that some Earth events happen slowly (e.g., erosion or weathering of rocks).***

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. • Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that will be useful in answering a scientific question and/or supporting a scientific claim. ***Read various texts to answer scientific questions.*** ***Read various texts to support a scientific claim.*** ***Use various forms of media to answer scientific questions.*** ***Use various forms of media to support a scientific claim.***	**THE HISTORY OF PLANET EARTH** Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. (LE.ESS1C.a) ***Changes happen to the Earth every day.*** ***Change can occur slowly or quickly.*** ***Earth is always changing.*** ***We can observe changes in the Earth every day.*** ***Some events are slow moving and evolve over time.*** ***Weathering of rocks and erosion are some events that occur very slowly.*** ***Flooding, severe storms, volcanic eruptions, earthquakes, landslides and erosion of soil can occur quickly.*** **DEFINING AND DELIMITING ENGINEERING PROBLEMS** Asking questions, making observations, and gathering information are helpful in thinking about problems. (ETS.LE.1A.b) ***Ask questions and gather information to define problems.*** ***Make observations to define problems.*** ***Before engineers develop a solution to a problem, they ask questions to understand the problems that people face.*** ***Questions allow scientists to define the problems that require solutions.*** ***Scientists must determine the problems in order to gather information and design solutions.*** ***The process of gathering information through the senses is called observation.***	**STABILITY AND CHANGE** Things may change slowly or rapidly. ***In the world, things may change slowly.*** ***In the world, things may change rapidly.***

Clarification Statement
Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly, and erosion of rocks, which occurs slowly.

Performance Expectation *and Louisiana Connectors*
2-ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. ***LC-2-ESS2-1a Identify a solution (e.g., using shrubs, grass, or trees) to slow or prevent wind from changing the shape of the land.*** ***LC-2-ESS2-2b Identify a solution (e.g., using shrubs, grass, or trees) to slow or prevent water from changing the shape of the land.***

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. • Generate and/or compare multiple solutions to a problem. ***Generate solutions to a problem.*** ***Compare solutions to a problem.***	**EARTH MATERIALS AND SYSTEMS** Wind and water can change the shape of the land. (LE.ESS2A.a) ***Wind can cause changes in the land.*** ***Water can cause changes in the shape of the land.*** ***Wind can cause changes in the shape of land by blowing or moving away soil or sand.*** ***Water can cause changes in the shape of land by blowing or moving away soil or sand.*** **OPTIMIZING THE DESIGN SOLUTION** Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (LE.ETS1C.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.*** ***Testing and comparing designs can provide solutions to a problem.***	**STABILITY AND CHANGE** Things may change slowly or rapidly. ***In the world, things may change slowly.*** ***In the world, things may change rapidly.***

Clarification Statement
Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.

Performance Expectation *and Louisiana Connectors*
2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area. ***LC-2-ESS2-2a Use a model to Identify land features and bodies of water (e.g., hill, lake) in an area using a model.***

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 (i.e., diagram, drawing, physical replica, diorama, dramatization, 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). ***Develop models that can be used to show relationships in the world (natural and human-designed).*** ***Develop models that can be used to show different amounts or scales (bigger, smaller) in the world (natural and human-designed).*** ***Develop models that can be used to show patterns in the world (natural and human-designed).***	**PLATE TECTONICS AND LARGE-SCALE SYSTEM INTERACTIONS** Maps show where things are located. One can map the shapes and kinds of land and water in any area. (LE.ESS2B.a) ***Maps give us information about the land around us.*** ***Maps can show where to find different types of landforms.*** ***Maps can show where to find bodies of water.*** ***Maps can show us the shapes of landforms and bodies of water on Earth.*** ***Maps give us different kinds of information depending upon the type of map we are using.*** **DEVELOPING POSSIBLE SOLUTIONS** Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for solutions to a problem. (ETS.LE.1B.a) ***A model expresses ideas and concepts which can be used to interpret observations and experiments.*** ***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.***	**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
Models do not have to be to scale.

Performance Expectation *and Louisiana Connectors*
2-ESS2-3 Obtain and communicate information to identify where water is found on Earth and that it can be solid or liquid. ***LC-2-ESS2-3a Use information to identify that water is found in many types of places.*** ***LC-2-ESS2-3b Use information to identify that that water exists as solid ice and in liquid form.***

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. • Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that will be useful in answering a scientific question and/or supporting a scientific claim. ***Read various texts to answer scientific questions.*** ***Read various texts to support a scientific claim.*** ***Use various forms of media to answer scientific questions.*** ***Use various forms of media to support a scientific claim.***	**THE ROLES OF WATER IN EARTH'S SURFACE PROCESSES** Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (LE.ESS2C.a) ***On Earth, water is found in oceans, rivers, lakes, and ponds.*** ***This water can be solid or liquid in form.***	**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
Students use reliable sources to identify the patterns of where water is found and its natural form (solid or liquid). Examples of how water can be found on Earth as water or ice could include a frozen pond, a liquid pond, a frozen lake, or a liquid lake.