Louisiana Believes

Crosswalk for Louisiana Student Standards for Science and NGSS: 3rd grade

This document provides guidance to assist teachers, schools, and systems with determining alignment to Louisiana Student Standards for Science for resources designed for the Next Generation Science Standards. This guidance document is considered a "living" document, as we believe that teachers and other educators will find ways to improve the document as they use it. Please send feedback to STEM@la.gov so that we may use your input when updating this guide.

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DEPARTMENT of EDUCATION
Louisiana Believes

MOTION AND STABILITY: FORCES AND INTERACTIONS	**3-PS2-1**
LSSS	**NGSS**
Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.	
Clarification Statement	
Examples could include an unbalanced force on one side of an object that can make it start moving, or balanced forces pushing on an object from opposite sides will not produce any motion at all. Investigations include one variable at a time: number, size, or direction of forces.	Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all. Assessment is limited to one variable at a time: number, size, or direction of forces. [Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.]
Science and Engineering Practice:	Planning and carrying out investigations
Disciplinary Core Ideas:	Forces and motion
Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it but they add to give zero net force on the object. (UE.PS2A.a) Forces that do not sum to zero can cause changes in the object's speed or direction of motion. (Qualitative and conceptual, but not quantitative addition of forces are used at this level.) (UE.PS2A.b)	
	Types of interactions
Objects in contact exert forces on each other. (UE.PS2B.a)	
Crosscutting Concepts:	Cause and effect
Cause and effect relationships are routinely identified, tested, and used to explain change	

Underlined sections denote **information that does **not** appear in both sets of standards.*

MOTION AND STABILITY: FORCES AND INTERACTIONS	3-PS2-2
LSSS	**NGSS**
Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.	
Clarification Statement	
Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, or two children on a see-saw.	
Science and Engineering Practice:	Planning and carrying out investigations
Disciplinary Core Ideas:	Forces and motion
The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it. (Technical terms, such as magnitude, velocity, momentum, and vector quantity, are not introduced at this level, but the concept that some quantities need both size and direction to be described is developed.) (UE.PS2A.c)	
Crosscutting Concepts:	Patterns
Patterns of change can be used to make predictions.	

MOTION AND STABILITY: FORCES AND INTERACTIONS	3-PS2-3
LSSS	**NGSS**
Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.	
Clarification Statement	
Examples of an electric force could include the force on hair from an electrically charged balloon or the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between an electromagnet and steel paper clips, or the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects the strength of the force or how the orientation of magnets affects the direction of the magnetic force. Examples could include forces produced by objects that can be manipulated by students, or electrical interactions could include static electricity.	
Science and Engineering Practice:	Asking questions and defining problems
Disciplinary Core Ideas:	Types of interactions
Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. (UE.PS2B.b)	
Crosscutting Concepts:	Cause and effect
Cause and effect relationships are routinely identified, tested, and used to explain change.	

MOTION AND STABILITY: FORCES AND INTERACTIONS	**3-PS2-4**
LSSS	**NGSS**
Define a simple design problem that can be solved by applying scientific ideas about magnets.	
Clarification Statement	
Examples of problems could include constructing a latch to keep a door shut or creating a device to keep two moving objects from touching each other.	
Science and Engineering Practice:	Asking questions and defining problems
Disciplinary Core Ideas:	Types of interactions
Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, their orientation relative to each other. (UE.PS2B.b)	
	Defining and delimiting engineering problems
Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (UE.ETS1A.a)	NONE PROVIDED IN NGSS
Crosscutting Concepts:	Patterns
Patterns can be used as evidence to support an explanation.	NONE PROVIDED IN NGSS
	Connections to engineering, technology, and applications of science Influence of engineering, technology, and science on society and the natural world
NONE PROVIDED IN LSSS	Scientific discoveries about the natural world can often lead to new and improved technologies, which are developed through the engineering design process.

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FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES	**3-LS1-1**
LSSS	**NGSS**
Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.	
Clarification Statement	
Changes that organisms go through during their lives form a pattern. For plant life cycles there is an emphasis on flowering plants.	
Science and Engineering Practice:	Developing and using models
Modeling in 3–5 builds on K–2 experiences and progresses to building and revising simple models and using models to represent events and design solutions. Develop and/or use models to describe and/or predict phenomena.	
	Connections to nature of science Scientific knowledge is based on empirical evidence
NONE PROVIDED IN LSSS	Science findings are based on recognizing patterns.
Disciplinary Core Ideas:	Growth and development of organisms
Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (UE.LS1B.a)	
Crosscutting Concepts:	Patterns
Patterns of change can be used to make predictions.	

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ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS	**3-LS2-1**
LSSS	**NGSS**
Construct and support an argument that some animals form groups that help members survive.	
Clarification Statement	
Arguments could include examples of group behavior such as division of labor in a bee colony, flocks of birds staying together to confuse or intimidate predators, or wolves hunting in packs to more efficiently catch and kill prey.	NONE PROVIDED IN NGSS
Science and Engineering Practice:	Engaging in argument from evidence
Disciplinary Core Ideas:	Social interactions and group behavior
Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. (UE.LS2D.a)	
Crosscutting Concepts:	Systems and system models
A system is a group of related parts that make up a whole and can carry out functions its individual parts cannot.	NONE PROVIDED IN NGSS
	Cause and effect
NONE PROVIDED IN LSSS	Cause and effect relationships are routinely identified and used to explain change.

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HEREDITY: INHERITANCE AND VARIATION OF TRAITS	**3-LS3-1**
LSSS	**NGSS**
Analyze and interpret data to provide evidence that plants and animals have traits inherited from their parents and that variation of these traits exists in a group of similar organisms.	
Clarification Statement	
Emphasis is on organisms other than humans and does not include genetic mechanisms of inheritance and prediction of traits. Data can include drawings, photographs, measurements, or written observations. Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings.	Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans. [Assessment Boundary: Assessment does not include genetic mechanisms of inheritance and prediction of traits].
Science and Engineering Practice:	Analyzing and interpreting data
Disciplinary Core Ideas:	Inheritance of traits
Many characteristics of organisms are inherited from their parents. (UE.LS3A.a)	
Disciplinary Core Ideas:	Variation of traits
Different organisms vary in how they look and function because they have different inherited information. (UE.LS3B.a)	
Crosscutting Concepts:	Patterns
Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena and designed products.	Similarities and differences in patterns can be used to sort and classify natural phenomena.

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HEREDITY: INHERITANCE AND VARIATION OF TRAITS	**3-LS3-2**
LSSS	**NGSS**
Use evidence to support the explanation that traits can be influenced by the environment.	
Clarification Statement	
Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted or <u>an animal</u> that is given too much food and little exercise may become overweight.	Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; <u>and, a pet dog</u> that is given too much food and little exercise may become overweight
Science and Engineering Practice:	Constructing explanations and designing solutions
Disciplinary Core Ideas:	Inheritance of traits
Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (UE.LS3A.b)	
Disciplinary Core Ideas:	Variation of traits
The environment also affects the traits that an organism <u>expresses.</u> (UE.LS3B.b)	The environment also affects the traits that an organism <u>develops.</u>
Crosscutting Concepts:	Cause and effect
Cause and effect relationships are routinely identified, tested, and used to explain change.	

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BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY	**3-LS4-1**
LSSS	**NGSS**
Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.	
Clarification Statement	
Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include major fossil types such as marine fossils found on dry land, tropical plant fossils found in arctic areas, or fossils of extinct organisms and relative ages.	
Science and Engineering Practice:	Analyzing and interpreting data
Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation.	Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. Analyze and interpret data to make sense of phenomena using logical reasoning.
Disciplinary Core Ideas:	Evidence of common ancestry and diversity
Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (UE.LS4A.a) Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environment. (UE.LS4A.b)	
Crosscutting Concepts:	Scale, proportion and quantity
Natural objects and/or observable phenomena exist from the very small to the immensely large or from very short to very long time periods.	Observable phenomena exist from very short to very long time periods.
	Connections to nature in science: scientific knowledge assumes an order and consistency in natural systems
NONE PROVIDED IN LSSS	Science assumes consistent patterns in natural systems.

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BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY	**3-LS4-2**
LSSS	**NGSS**
Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.	
Clarification Statement	
Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten or animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.	
Science and Engineering Practice:	Constructing explanations and designing solutions
Disciplinary Core Ideas:	Natural selection
Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (UE.LS4B.a)	
Crosscutting Concepts:	Cause and effect
Cause and effect relationships are routinely identified, tested, and used to explain change.	

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BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY	**3-LS4-3**
LSSS	**NGSS**
Construct and support an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	
Clarification Statement	
Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitats make up a system in which the parts depend on each other.	
Science and Engineering Practice:	Engaging in argument from evidence
Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s). Construct and/or support an argument with evidence, data, and/or a model.	Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s). Construct and/or support an argument with evidence
Disciplinary Core Ideas:	Adaptation
For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (UE.LS4C.a)	
Crosscutting Concepts:	Cause and effect
Cause and effect relationships are routinely identified, tested, and used to explain change.	

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BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY	**3-LS4-4**
LSSS	**NGSS**
Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.	
Clarification Statement	
Examples of environmental change(s) could include changes in land characteristics, water distribution, temperature, food, and other <u>biological communities. Louisiana specific examples could include impacts related to levees, dams, crop rotations, irrigation systems, hunting limits, diversion canals, or sea level rise.</u>	Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other <u>organisms.</u>
Science and Engineering Practice:	Engaging in argument from evidence
Disciplinary Core Ideas:	Ecosystem dynamics, functioning and resilience
When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (UE.LS2C.a)	
Disciplinary Core Ideas:	Biodiversity and humans
Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (UE.LS4D.a)	
Disciplinary Core Ideas:	Developing possible solutions
<u>At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs. (ETS.UE.1B.b)</u>	NONE PROVIDED IN NGSS
Crosscutting Concepts:	Systems and system models
A system can be described in terms of its components and their interactions.	
	<u>Connections to engineering, technology, and applications of science</u> <u>Interdependence of engineering, technology and science on society and the natural world</u>
NONE PROVIDED IN LSSS	<u>Knowledge of relevant scientific concepts and research findings is important in engineering.</u>

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EARTH'S SYSTEMS	**3-ESS2-1**
LSSS	**NGSS**
Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	
Clarification Statement	
Examples of data could include average temperature, precipitation, and wind direction. Examples of data representations could include pictographs and bar graphs.	
Science and Engineering Practice:	Analyzing and interpreting data
Disciplinary Core Ideas:	Weather and climate
Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (UE.ESS2D.a)	
Crosscutting Concepts:	Patterns
Patterns of change can be used to make predictions.	

EARTH'S SYSTEMS	**3-ESS2-2**
LSSS	**NGSS**
Obtain and combine information to describe climates in different regions around the world.	Obtain and combine information to describe climates in different regions of the world.
Clarification Statement	
Information could include rainfall and temperature data.	NONE PROVIDED IN NGSS
Science and Engineering Practice:	Obtaining, evaluating, and communicating information
Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods Obtain and combine information from books and/ or other reliable media to explain phenomena or solutions to a design problem.	Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods Obtain and combine information from books and/ or other reliable media to explain phenomena.
Disciplinary Core Ideas:	Weather and climate
Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (UE.ESS2D.b)	
Crosscutting Concepts:	Patterns
Patterns of change can be used to make predictions	

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EARTH AND HUMAN ACTIVITY	**3-ESS3-1**
LSSS	**NGSS**
Make a claim about the merit of a design solution that reduces the impact of a weather-related hazard.	
Clarification Statement	
Examples of design solutions to weather-related hazards could include barriers to prevent flooding (including levees), wind-resistant roofs, tornado shelters and lightning rods.	Examples of design solutions to weather-related hazards could include barriers to prevent flooding (including levees), wind-resistant roofs, and lightning rods.
Science and Engineering Practice:	Engaging in argument from evidence
Disciplinary Core Ideas:	Natural hazards
A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (UE.ESS3B.a)	
Disciplinary Core Ideas:	Developing possible solutions
Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. (ETS.UE.1B.a)	NONE PROVIDED IN NGSS FOR THIS STANDARD
Crosscutting Concepts:	Cause and effect
Cause and effect relationships are routinely identified, tested, and used to explain change.	
	Connections to engineering, technology, and applications of science Influence of engineering, technology, and science on society and the natural world
NONE PROVIDED IN LSSS	Engineers improve existing technologies or develop new ones to increase their benefits (e.g. batter artificial limbs), decrease known risks (e.g., seatbelts in cars), and meet societal demands (e.g., cell phones).
	Connections to nature of science Science is a human endeavor
NONE PROVIDED IN LSSS	Science affects everyday life.

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