

**Grade 1 - Science Curriculum Framework**

(NGSS in Parantheses)

<b>Physical Science</b>								
<b>Grade</b>	<b>Big Idea</b>	<b>Essential Questions</b>	<b>Concepts</b>	<b>Competencies</b>	<b>Vocabulary</b>	<b>2002 Standards</b>	<b>SAS Standards</b>	<b>Assessment Anchor Eligible Content</b>
1	Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.	How can one explain the structure, properties, and interactions of matter?	N/A	N/A	N/A	N/A	N/A	N/A
1	Interactions between any two objects can cause changes in one or both.	How can one explain and predict interactions between objects within systems?	N/A	N/A	N/A	N/A	N/A	N/A
1	Interactions of objects or systems of objects can be predicted and explained using the concept of energy transfer and conservation.	How is energy transferred and conserved?	N/A	N/A	N/A	N/A	N/A	N/A
1	Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter.	How are waves used to transfer energy and information?	Sound can make matter vibrate, and vibrating matter can make sound. (PS4.A)	Plan and conduct investigations to provide evidence that vibrating materials can make sound. (1-PS4-1)	Energy Investigation Materials Sound Vibration Waves	3.4.4.C 3.2.4.A 3.2.4.B 3.2.4.C	3.2.3.B5 3.2.4.B5 3.2.1.B5	S4.A.1.1 S4.1.3.1 S4.A.2.1.4 S4.A.1. 3.3
1	Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter.	How are waves used to transfer energy and information?	An object can be seen when light reflected from its surface enters the eyes. (PS4.B)	Investigate and explain that for an object to be seen, light must be reflected off the object and enter the eye. (1-PS4-2)	Energy Light Reflection Surface Wave	3.4.4.C 3.2.4.A 3.2.4.B 3.2.4.C	3.2.3.B5 3.2.4.B5 3.2.1.B5	S4.A.1.1 S4.1.3.1 S4.A.2.1.4 S4.A.1. 3.3

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1	Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter.	How are waves used to transfer energy and information	Light travels from place to place. (PS4.B)	Make observations to construct an evidence-based account that light travels from place to place.	Light	3.2.4.B	3.2.3.B5	S4A1.3.3 S4A.2.1.3
1	Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter.	How are waves used to transfer energy and information?	Mirrors can be used to reflect light. (PS4.B)	Plan and conduct an investigation to redirect light beams using mirrors. (1-PS4-3)	Light beam Mirror Reflection	3.4.4.C 3.4.4.B 3.2.4.A 3.2.4.B 3.2.4.C	3.2.3.B5 3.2.4.B5 3.2.1.B5	S4.A.1.1 S4.1.3.1 S4.A.2.1.4
1	Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter.	How are waves used to transfer energy and information?	Materials allow light to pass through them in varying degrees. (PS4.B)	Investigate to determine the effect of placing objects made of different materials in a beam of light. (1-PS4-3)	Materials Opaque Translucent Transparent	3.2.4.C	3.2.3.B5	S4.A.1.3.2 S4.A.2.1.3
1	Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter.	How are waves used to transfer energy and information?	Objects can be seen if light is available to illuminate the object or if they give off their own light. (PS4.B)	Make observations to construct an evidence-based account that objects can be seen when illuminated. (1-PS4-2)	Illuminate Light	3.2.4.B	3.2.1.B5 3.2.1.B7	S.4.A.2.1.3
1	Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter.	How are waves used to transfer energy and information?	A variety of devices are used to communicate over long distances. (PS4.C)	Use tools and materials to design a device that uses light or sound to solve the problem of communicating over a distance. (1-PS4-4)	Communicate Distance Sound	3.2.4.D 3.8.4. A 3.8.4.B	3.4.3.D1 3.2.1.B7	S4.A.2.2
1	Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter.	How are waves used to transfer energy and information?	People depend on various technologies in their lives; human lives would be different without technology. (PS4.C)	Design and build a device that uses light to communicate. (1-PS4-4)	Communicate Design Device	3.2.4.D 3.8.4. A 3.8.4.B	3.2.1.B7 3.4.3.E4	S.4.A.1.1.

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	matter.							
<b>Life Science</b>								
Grade	Big Idea	Essential Questions	Concepts	Competencies	Vocabulary	2002 Standards	SAS Standards	Assessment Anchor Eligible Content
1	All organisms are made of cells and can be characterized by common aspects of their structure and functioning.	How do organisms live, grow, respond to their environment, and reproduce?	Organisms have external structures that serve various functions in growth, survival, behavior, and reproduction. (LS1.A)	Observe and categorize living and nonliving things by external characteristics. (1-LS1-1)	Organism Structures	3.3.4.A 3.3.4.B 3.1.4.A 3.2.4.A 3.2.4.B 3.2.4.C 4.7.4.A 4.7.4.B	3.1.4.A 3.1.4.B	S4.B.1.1.2 S4.B.1.1.3 S4.B.1.1.4 S4.B.1.1.1 S4.B.1.1.2
1	All organisms are made of cells and can be characterized by common aspects of their structure and functioning.	How do organisms live, grow, respond to their environment, and reproduce?	Organisms have external structures that help them survive, grow and meet their needs. (LS1.A)	Make observations and describe the different parts of organisms that help them survive, grow, and meet their needs. (1-LS1-2)	Grow Movement Observations Parts (roots, leaves, flowers, stems, fruit) Reproduce Survival Survive	3.3.4.A 3.3.4.B 3.1.4.A 3.2.4.A 3.2.4.B 3.2.4.C 4.7.4.A 4.7.4.B	3.1.2.C	S4.A.3.1.1 S4.B.1.1.1 S4.B.1.1.3
1	All organisms are made of cells and can be characterized by common aspects of their structure and functioning.	How do organisms live, grow, respond to their environment, and reproduce?	Organisms have external structures that help them survive, grow and meet their needs. (LS1.A)	Design a model that replicates the function of an organism's structure. (1-LS1-1)	Behavior Model	3.3.4.C 3.1.7.C 3.2.4.A 3.2.4.B 3.2.4.C 4.7.4.A 4.7.4.B	3.1.4.A	S4.B.1.1.1 S4.B.1.1.3 S4.B.1.1.4 S4.A.2.1.1
1	All organisms are made of cells and can be characterized by common aspects of their structure	How do organisms live, grow, respond to their environment, and reproduce?	Parents and offspring engage in behaviors that help the offspring to survive. (LS1.B)	Observe and determine patterns in behavior of parents and offspring that help offspring survive. (1-LS1-2)	Behavior Observe Offspring Patterns	3.3.4.A 3.3.4.B 3.1.4.A 3.2.4.A	3.1.2.C	S4.A.3.1.1 S4.B.1.1.1 S4.B.1.1.3

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	and functioning.					3.2.4.B 3.2.4.C 4.7.4.A 4.7.4.B		
1	Organisms have external structures that help them survive, grow and meet their needs.	Organisms have external structures that help them survive, grow and meet their needs.	Organisms have external structures that help them survive, grow and meet their needs. (LS1.A)	Classify plants and animals according to physical characteristics they share. (1-LS1-1)	Classify Physical characteristic	3.3.4.C 3.1.7.C 3.2.4.A 3.2.4.B 3.2.4.C 4.7.4.A 4.7.4.B	3.1.4.A	S4.B.1.1 S4.B.1.1.1 S4.B.1.1.3
1	Organisms have external structures that help them survive, grow and meet their needs.	Organisms have external structures that help them survive, grow and meet their needs.	Every human made product is designed by applying knowledge of the natural world and is built using materials from nature. (LS1.A)	Use materials to design a solution to a human problem by mimicking how plant or animals use their external parts to help them survive, grow and meet their needs. (1-LS3-1)	Mimic Problem Solution	3.24..D	3.1.4.A 3.6.4.A	S.4.A.1.1.2 S4.B.1.1.3
1	Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment.	How and why do organisms interact with their environment and what are the effects of these interactions?	N/A	N/A	N/A	N/A	N/A	N/A
1	Heredity refers to specific mechanisms by which characteristics or traits are passed from one generation to the next via genes, and explains why offspring resemble, but are not identical to, their parents.	How are the characteristics of one generation passed to the next? How can individuals of the same species and even siblings have different characteristics?	Young animals are very much but not exactly like their parents. Plants also are very much, but not exactly, like their parents. (LS3.A)	Make observations and to construct an evidence-based account that young plants and animals are alike but not exactly like their parents. (1-LS3-1)	Similar Vary	3.3.4.C 3.1.7.C 3.2.4.A 3.2.4.B 3.2.4.C 3.3.4.C 4.7.4.A	3.1.4.B 3.1.4.C 3.1.KB1	S4.B.2.2.1
1	Heredity refers to specific	How are the characteristics of	Adult plants and animals have	Note patterns in characteristics or	Offspring	3.3.4.C	3.1.B.5	S4.A.3.3.1

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	mechanisms by which characteristics or traits are passed from one generation to the next via genes, and explains why offspring resemble, but are not identical to, their parents.	one generation passed to the next? How can individuals of the same species and even siblings have different characteristics?	young. In many kinds of animals, parents and the offspring engage in behaviors that help the offspring to survive. (LS1.B)	behaviors that appear in adult and offspring (e.g. hair color, eye color,). (1-LS1-2)	Patterns	3.1.7.C 3.2.4.A 3.2.4.B 3.2.4.C 3.3.4.C 4.7.4.A 4.7.4.B	3.1.4.B.1 3.1.B5	S4.B.2.1.2 S4.B.2.2.1
1	Heredity refers to specific mechanisms by which characteristics or traits are passed from one generation to the next via genes, and explains why offspring resemble, but are not identical to, their parents.	How are the characteristics of one generation passed to the next? How can individuals of the same species and even siblings have different characteristics?	Offspring resemble their parents, but can also vary in many ways. (LS3.A)	Conduct an investigation (e.g. plant seeds, eggs) and cite evidence of change from young to adult. (1-LS3-1)	Characteristics Evidence Inherit Offspring Parents	3.3.4.C 3.1.7.C 3.2.4.A 3.2.4.B 3.2.4.C 3.3.4.C 4.7.4.A 4.7.4.B	3.1.4.B 3.1.4.C 3.1.K.A3	S4.B.2.2.1
1	Heredity refers to specific mechanisms by which characteristics or traits are passed from one generation to the next via genes, and explains why offspring resemble, but are not identical to, their parents.	How are the characteristics of one generation passed to the next? How can individuals of the same species and even siblings have different characteristics?	Plants and animals have a life cycle.	Observe and compare the stages of life cycles of organisms (plants & animals).	Plants Animals Life cycles	3.1.4.C 3.1.4.E 3.3.4.A	3.1.K.A.3	S4.A.3.3.1 S4.B.1.1.5
1	Biological evolution explains both the unity and diversity of species and provides a unifying principle for the history and diversity of life on Earth.	How can there be so many similarities among organisms yet so many different kinds of plants, animals, and microorganisms?	N/A	N/A	N/A	N/A	N/A	N/A
<b>Earth and Space Science</b>								
<b>Grade</b>	<b>Big Idea</b>	<b>Essential Question</b>	<b>Concepts</b>	<b>Competencies</b>	<b>Vocabulary</b>	<b>2002 Standards</b>	<b>SAS Standards</b>	<b>Assessment Anchor Eligible</b>

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								<b>Content</b>
1	The universe is composed of a variety of different objects, which are organized into systems each of, which develops according to accepted physical processes and laws.	What is the universe, and what is Earth's place in it?	Observable changes and patterns in the sky are caused by motions in the Earth-moon-sun system. (ESS1.A)	Use observations of stars, moon, and sun in the day and night sky to describe patterns that can be predicted. (1-ESS1-1)	Changes Describe Moon Observe Pattern Predict Star Sun System	3.4.4.D 3.1.4.C 3.1.4.A 3.1.7.A 3.2.4.A 3.2.4.B 3.2.4.C	3.3.2.B1 3.3.4.B1 3.3.4.B2 3.3.PK.B.1	S4.A.1.1 S4.A.1.3 S4.A.2.1 S4.A.2.2 S4.A.3.1 S4.A.3.2 S4.A.3.3 S4.D.3.1.1 S4.D.3.1.2
1	The universe is composed of a variety of different objects, which are organized into systems each of, which develops according to accepted physical processes and laws.	What is the universe, and what is Earth's place in it?	The motion of the sun, moon and earth relates to time. (days, months, years). (ESS1.B)	Use observations to compare the motion of the sun, earth and moon as it relates to time. (1-ESS1-1)	Earth Moon Motion Sun	3.1.4.C 3.2.4.B 3.4.4.D	3.3.2.B1 3.3.3.B1	S.4.A.1.3.1 S4.D.3.1.2
1	The universe is composed of a variety of different objects, which are organized into systems each of, which develops according to accepted physical processes and laws.	What is the universe, and what is Earth's place in it?	Observable changes and patterns in the sky are caused by motions in the Earth-moon-sun system. (ESS1.A)	Observe and describe patterns of objects in the sky that are cyclic and can be predicted. (1-ESS1-2)	Patterns	3.4.4.D 3.1.4.C 3.1.4.A 3.1.7.A 3.2.4.A 3.2.4.B 3.2.4.C	3.3.2.B1 3.3.4.B2 3.3.3.B1 3.3.3.B3	S4.A.3.3.1 S4.A.3.3.2
1	The universe is composed of a variety of different objects, which are organized into systems each of, which develops according to accepted physical processes and laws.	What is the universe, and what is Earth's place in it?	Patterns of the motion of the sun, moon and stars in the sky can be observed, described and predicted. (ESS1.A)	Observe, describe, and predict patterns of daily change in the appearance and visibility of the moon and sun. (1-ESS1-2)	Predict Sky Sunrise Sunset	3.4.4.D 3.1.4.C 3.1.4.A 3.1.7.A 3.2.4.A 3.2.4.B 3.2.4.C	3.3.3.B1 3.3.4.B2	S4.A.1.1 S4.A.1.3 S4.A.2.1 S4.A.2.2 S4.A.3.1 S4.A.3.2 S4.A.3.3 S4.D.3.1.1 S4.D.3.1.2 S4.D.3.1.3

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1	The universe is composed of a variety of different objects, which are organized into systems each of, which develops according to accepted physical processes and laws.	What is the universe, and what is Earth's place in it?	Seasonal patterns of sunrise and set can be observed, described and predicted. (ESS1.B)	Observe, describe, and predict patterns of seasonal change in the timing and position of sunrise and sunset. (1-ESS1-2)	Sunrise Sunset	3.2.4.B	3.3.2.B1	S4.A.1.1 S4.A.1.3 S4.A.2.1 S4.D.3.1.1 S.4.D.3.1.2
1	The universe is composed of a variety of different objects, which are organized into systems each of, which develops according to accepted physical processes and laws.	What is the universe, and what is Earth's place in it?	Through the use of tools and or media objects can be observed more clearly than with the naked eye.	Use scientific tools such as binoculars or telescopes to enhance observations.	Binocular Telescope Tools		3.3.4.B1 3.3.4.B2	S4.A.1.1 S4.A.1.3 S4.A.1.3.1 S4.A.2.2.1 S4.A.3.2 S4.A.3.3 S4.A.3.3.1 S4.A.3.3.2 S4.D.3.1.1 S4.D.3.1.2
1	The Earth is a complex and dynamic set of interconnected systems (e.g. geosphere, hydrosphere, atmosphere, biosphere) that interact over a wide range of temporal and spatial scales.	How and why is Earth constantly changing?	N/A	N/A	N/A	N/A	N/A	N/A
1	The Earth's processes affect and are affected by human activities.	How do Earth's processes and human activities affect each other?	N/A	N/A	N/A	N/A	N/A	N/A