

**SOUTH DAKOTA SCIENCE STANDARDS
K-2**

**Kindergarten Nature of Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Understand the nature and origin of scientific knowledge.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| | (Mastery of this indicator does not emerge until eighth grade.) |

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: These skills should be taught and practiced in grade-level study of Physical, Life, and Earth/Space Science although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|--|
| | <ul style="list-style-type: none"> ✓ Students are able to use scientific thinking skills of observing and communicating. <ul style="list-style-type: none"> • Use their senses and simple instruments/tools to make observations. Example: Use hand lenses, balance scales. • Use non-standard units of measurement to compare objects. Example: Compare length of various leaves to determine which are longer/shorter than a given example. ✓ Students are able to safely conduct simple experiments. |

**Kindergarten Nature of Science
Performance Descriptors**

Note: At the K-2 level, the teachers need to focus on observing and collecting information about the progress students are making related to the checkmark statements. The skills and concepts addressed in this goal are to be included across the other goals. Appropriate scientific instruction should provide students the opportunity to actively engage in scientific investigations.

**Kindergarten Physical Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Describe structures and properties of, and changes in, matter.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|---|
| (Comprehension) | <p>K.P.1.1. Students are able to use senses to describe solid objects in terms of physical attributes.</p> <ul style="list-style-type: none"> • Explain how larger objects are made of smaller pieces. Examples: Use hand lenses to observe particle board to conclude that it is made from sawdust and wood chips and to see that fabric is made from fibers. • Identify similarities /differences of various objects. Example: Given a collection of shoes, students can describe ways the shoes are alike and ways the shoes are different. |
| (Knowledge) | <p>K.P.1.2. Students are able to identify water in its solid and liquid forms.</p> <ul style="list-style-type: none"> • Observe ice in the environment. Examples: Observe ice in/on ponds, icicles, frost on playground surfaces. • Observe water in the environment. Examples: Observe rain, puddles, river, water fountain. <p>✓ Students are able to observe physical changes in matter. Examples: Observe melting chocolate, freezing ice cubes, bending straws, tearing paper.</p> |

Indicator 2: Analyze forces, their forms, and their effects on motions.

Note: These skills should be taught and practiced although mastery is not expected until a later grade level.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|--|
| | <ul style="list-style-type: none"> ✓ Students are able identify things that move. Examples: wheels, swings, bicycles, bodies ✓ Students are able to explore magnets. |

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| | Example: Use a variety of magnets (horseshoe, donut, bar, ball/marble, wand magnets) to test attraction. Test on wood, paper, water, metals, etc. |

Indicator 3: Analyze interactions of energy and matter.

Note: These skills should be taught and practiced although mastery is not expected until a later grade level.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|--|
| | <p>✓ Students are able to explore vibration and sound.</p> <p>Examples: Use musical instruments, voice box, rubber bands, to see/feel vibrations and hear different sound tones, pitches, etc.</p> |

**Kindergarten Physical Science
Performance Descriptors**

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| Advanced | <p>Kindergarten students performing at the advanced level:</p> <ul style="list-style-type: none"> • categorize solid objects by physical attributes; • describe how to transform water from a solid to a liquid. |
| Proficient | <p>Kindergarten students performing at the proficient level:</p> <ul style="list-style-type: none"> • describe solid objects in terms of physical attributes; • identify water in its solid and liquid forms. |
| Basic | <p>Kindergarten students performing at the basic level:</p> <ul style="list-style-type: none"> • describe solid objects in terms of one physical attribute; • identify water in its liquid form. |

**Kindergarten Life Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|---|
| (Application) | <p>K.L.1.1. Students are able to sort living from non-living things.</p> <p>Example: Use concrete examples to sort living and non-living things. Have examples available and observable in the classroom (non-pollen plants, fish, snails, insects, worms, rocks/sand, sea shells, etc.).</p> <p>Example: Use magazines or pictures to group things into living and non-living.</p> <p>✓ Students are able to discuss the basic needs of plants and animals.</p> <p>Example: Demonstrate what happens to plants after a week or two of not watering.</p> <p>✓ Students are able to compare size and shape of living things.</p> <p>Example: Gather and sort a variety of leaves from local trees and plants.</p> <p>Example: Order a variety of mammals from smallest to largest (mouse, coyote, buffalo).</p> |

Indicator 2: Analyze various patterns and products of natural and induced biological change.

Note: These skills should be taught and practiced although mastery is not expected until a later grade level.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|---|
| | <p>✓ Recognize similarities and differences between animal offspring and their parents.</p> <p>Example: matching adults to babies using pictures of animals or of students and families</p> |

Indicator 3: Analyze how organisms are linked to one another and the environment.

Note: These skills should be taught and practiced although mastery is not expected until a later grade level.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|---|
| | ✓ Students are able to explore the local habitat. Example: Conduct nature walks around school yard and neighborhood looking for specific examples of a variety of living things (plants, evidence of animals). |

**Kindergarten Life Science
Performance Descriptors**

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| Advanced | Kindergarten students performing at the advanced level: <ul style="list-style-type: none">• identify basic needs of plants and animals;• compare size and shape of living things;• identify similarities between adult animals and their offspring. |
| Proficient | Kindergarten students performing at the proficient level: <ul style="list-style-type: none">• sort living from non-living things. |
| Basic | Kindergarten students performing at the basic level: <ul style="list-style-type: none">• identify pictures of living things. |

**Kindergarten Earth/Space Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Analyze the various structures and processes of the Earth system.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| (Comprehension) | <p>K.E.1.1. Students are able to describe simple Earth patterns in daily life.</p> <p style="padding-left: 40px;">Examples: weather observations, seasons, night and day</p> <p>✓ Explore rocks, sand, water, and soil.</p> <p>Examples of tools and materials to use include sand and water table, sifters, screens.</p> |

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|--|
| | (Mastery of this indicator does not emerge until third grade.) |

**Kindergarten Earth/Space Science
Performance Descriptors**

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|-------------------|---|
| Advanced | <p>Kindergarten students performing at the advanced level:</p> <ul style="list-style-type: none"> • identify the seasons. |
| Proficient | <p>Kindergarten students performing at the proficient level:</p> <ul style="list-style-type: none"> • describe simple Earth patterns in daily life. |
| Basic | <p>Kindergarten students performing at the basic level:</p> <ul style="list-style-type: none"> • name a difference between day and night and between summer and winter. |

**Kindergarten Science, Technology, Environment, and Society
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: These skills should be taught and practiced in grade-level study of Physical, Life, and Earth/Space Science although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|--|
| | <ul style="list-style-type: none"> ✓ Students are able to recognize technology in school, home, and community. Example: Recognize computers, pencils, refrigerators, Velcro, fire trucks as technology. ✓ Care for the environment around the school. Example: Pick up litter on the playground and around the school. ✓ Recognize ways to reuse various materials. Example: Reuse materials in art projects like paper, milk cartons, egg cartons, newspapers, etc. Example: Use both sides of a sheet of paper. |

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|--|
| | (Mastery of this indicator does not emerge until fifth grade.) |

**Kindergarten Science Technology, Environment, and Society
Performance Descriptors**

Note: At the K-2 level, the teachers need to focus on observing and collecting information about the progress students are making related to the checkmark statements. The skills and concepts addressed in this goal are to be included across the other goals. Appropriate scientific instruction should provide students the opportunity to actively engage in scientific investigations.

**First Grade Nature of Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Understand the nature and origin of scientific knowledge.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| | (Mastery of this indicator does not emerge until eighth grade.) |

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: These skills should be taught and practiced in grade-level study of Physical, Life, and Earth/Space Science although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|--|
| | <p>✓ Use scientific thinking skills of observing, communicating, and comparing.</p> <ul style="list-style-type: none"> • Enhance observations by using senses and simple instruments/tools to identify differences in properties. Example: Use magnets, balance scales, hand lenses, rulers for simple experiments. • Record observations and data. Example: Use pictures, numbers, graphs, or written statements to record experiment data. • Measure length, mass, and volume using non-standard and standard units when appropriate. Example: Use a balance scale to determine how many cubes it takes to balance a rock sample. <p>✓ Use safety procedures in conducting science investigations. Example: Explain why food used in an experiment is not for eating; wash hands after handling living things. Example: When exploring light/heat sources, do not touch hot things.</p> |

First Grade Nature of Science Performance Descriptors

Note: At the K-2 level, the teachers need to focus on observing and collecting information about the progress students are making related to the checkmark statements. The skills and concepts addressed in this goal are to be included across the other goals. Appropriate scientific instruction should provide students the opportunity to actively engage in scientific investigations.

**First Grade Physical Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Describe structures and properties of, and changes in, matter.

| Bloom's Taxonomy Level | Standards, Supporting Skills, and Examples |
|-------------------------------|---|
| (Analysis) | <p>1.P.1.1. Students are able to categorize objects by physical attributes such as color, size, and shape.</p> <p>Examples: Sort leaves, rocks, buttons, seeds, beans, animals.</p> |
| (Comprehension) | <p>1.P.1.2. Students are able to compare objects in terms of heavier or lighter.</p> <p>Example: Use film canisters filled with various materials such as pennies, sand, yarn, popcorn, washers. Students order the canisters from lightest to heaviest.</p> |
| (Application) | <p>1.P.1.3. Students are able to predict how common materials interact with water.</p> <ul style="list-style-type: none"> • Floating/sinking Example: Use items to float/sink: clay, wood, cork, pencils, crayons, coins, cotton balls, etc. ✓ Soluble/nonsoluble Example: Try to dissolve or mix salt, sugar, toothpaste, oil, etc. in water. |

Indicator 2: Analyze forces, their forms, and their effects on motions.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|--|
| (Comprehension) | <p>1.P.2.1. Students are able to describe relative positions of objects.</p> <p>Examples: Use positional words (far, near, in front, behind) to describe the location of objects in the classroom or on the playground.</p> <ul style="list-style-type: none"> ✓ Show how magnets can be used to make some things move without being touched. Example: Use magnetic games such as fishing pole with magnet attached to line and fish with paper clips attached. Example: Use a magnet under a maze page to move the paper clip across the page. |

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| | <p>✓ Demonstrate ways to make objects move faster or slower or in a different direction.</p> <p>Example: Use inclined planes with smooth surfaces and rough surfaces (sandpaper or felt) to observe change in motion of an object. For objects use balls, boxes, toy cars, blocks, etc.</p> |
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Indicator 3: Analyze interactions of energy and matter.

Note: These skills should be taught and practiced although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|---|
| | <p>✓ Identify heat and light sources.</p> <p>Example: Identify heat and light sources in student's home: oven, lamp, furnace, candle, etc. (Warning: DO NOT TOUCH)</p> <p>✓ Create shadows.</p> <p>Example: Use a light source and solid objects to create shadows on the wall.</p> |

**First Grade Physical Science
Performance Descriptors**

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|-------------------|---|
| Advanced | <p>First grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • create and explain categories for sorting solid objects by physical attributes; • describe motion in terms of changes in position; • identify sources of heat and light; • show how magnets make things move; • predict solubility of common materials with water. |
| Proficient | <p>First grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • categorize solid objects by multiple physical attributes such as color, size, and shape; • compare objects in terms of heavier or lighter; • describe relative positions of objects; • predict how common materials interact with water. |
| Basic | <p>First grade students performing at the basic level:</p> <ul style="list-style-type: none"> • categorize objects by one physical attribute; • demonstrate the relative positions of over, under, in, and out; • identify a material that will float in water and one that will sink. |

**First Grade Life Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| (Application) | <p>1.L.1.1. Students are able to discover life needs of green plants.</p> <ul style="list-style-type: none"> • Grow plants using variables such as sunlight/no sunlight, soil/no soil, sand or rock. |
| (Knowledge) | <p>1.L.1.2. Students are able to identify the parts of a plant.</p> <p>Examples: Draw and label seeds, roots, stems, fruit.</p> |
| (Knowledge) | <p>1.L.1.3. Students are able to list life needs of people and other animals.</p> <p>Example: Illustrate life needs of an animal living in your area. (Be sure to include food, air, water, place to live as life needs.)</p> |

Indicator 2: Analyze various patterns and products of natural and induced biological change.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| (Comprehension) | <p>1.L.2.1. Students are able to describe physical similarities and differences between parents and offspring.</p> <p>Example: Tell how puppies are like dogs, ducklings are like ducks, etc.</p> |

Indicator 3: Analyze how organisms are linked to one another and the environment.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| (Application) | <p>1.L.3.1. Students are able to relate characteristics of plants and animals that allow them to live in specific habitats.</p> <p>Example: Explain what physical characteristics allow a fish to live in water, or a cactus on the prairie, etc.</p> <p>Example: Wet two paper towels. Leave one flat and roll one up. Observe how rolled paper towel retains water better. Relate observations to the structure of a cactus.</p> |

**First Grade Life Science
Performance Descriptors**

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|-------------------|--|
| Advanced | First grade students performing at the advanced level: <ul style="list-style-type: none">• compare life needs of plants and animals in various habitats;• compare observable parts of plants;• describe physical similarities and differences between parents and offspring. |
| Proficient | First grade students performing at the proficient level: <ul style="list-style-type: none">• describe life needs of plants and animals in various habitats;• identify observable parts of a plant;• identify physical similarities and differences between parents and offspring. |
| Basic | First grade students performing at the basic level: <ul style="list-style-type: none">• describe food and water as life needs of animals;• identify roots, leaf, and stem of plants;• identify observable similarities between parents and offspring. |

**First Grade Earth/Space Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Analyze the various structures and processes of the Earth system.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|--|
| (Comprehension) | <p>1.E.1.1. Students are able to recognize changes in weather over time.</p> <ul style="list-style-type: none"> • Seasonal changes <p>Example: Graph sunny, cloudy, rainy, windy, and stormy days.</p> |
| (Comprehension) | <p>1.E.1.2. Students are able to describe rocks in terms of properties.</p> <p>Example: Describe the texture, size, and color of a rock.</p> |

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| | <p>✓ Identify what can be observed in the sky by the unaided eye in the day and at night.</p> <p>Example: Illustrate a day sky and a night sky including Sun, Moon, stars, clouds, etc.</p> |

**First Grade Earth/Space Science
Performance Descriptors**

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|-------------------|---|
| Advanced | <p>First grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • identify what can be observed in the sky by the unaided eye in the day and at night. |
| Proficient | <p>First grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • recognize changes in weather over time; • describe rocks. |
| Basic | <p>First grade students performing at the basic level:</p> <ul style="list-style-type: none"> • describe the current day's weather; • identify rocks . |

**First Grade Science, Technology, Environment, and Society
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: These skills should be taught and practiced in grade-level study of Physical, Life, and Earth/Space Science although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|---|
| | <ul style="list-style-type: none"> ✓ Describe ways technology makes life easier for people. Example: Explain ways computers, lamps, microwave, pencil sharpener, pens make life easier. ✓ Investigate natural resources and their uses. Example: Illustrate ways we use water, trees, soil, and rocks. ✓ Investigate how to recycle and reuse products made from natural resources. Examples: Recycle paper products, cans, baby food jars, etc. in the classroom. |

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

Note: These skills should be taught and practiced in grade-level study of Physical, Life, and Earth/Space Science although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|---|
| | <ul style="list-style-type: none"> ✓ Identify how technology has helped people solve everyday problems. Example: Find three different technology tools in your classroom or on your clothes. Include clothing fasteners such as buttons, zippers, Velcro and/or assistive technologies for special needs students such as touch pads or switches for communication, eyeglasses, and contacts. ✓ Develop personal habits that display concern for the environment. Example: Use the trash can in the park or on the school playground. |

**First Grade Science, Technology, Environment, and Society
Performance Descriptors**

Note: At the K-2 level, the teachers need to focus on observing and collecting information about the progress students are making related to the checkmark statements. The skills and concepts addressed in this goal are to be included across the other goals. Appropriate scientific instruction should provide students the opportunity to actively engage in scientific investigations.

**Second Grade Nature of Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: These skills should be taught and practiced in grade-level study of Physical, Life, and Earth/Space Science although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|--|
| | <p>✓ Explore scientific contributions made by people.</p> <p>Example: Share a presentation with the class on Alexander Graham Bell, Ben Franklin, Rachel Carson, Thomas Edison, George Washington Carver, Wright brothers.</p> |

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: These skills should be taught and practiced in grade-level study of Physical, Life, and Earth/Space Science although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| | <p>✓ Use scientific thinking skills of observing, communicating, classifying, and comparing.</p> <ul style="list-style-type: none"> • Measure length, volume, mass, and temperature in appropriate units. Examples: Use rulers to measure plant growth. Use balance scales to compare the mass (weight) of rocks. Example: Read thermometers on a daily basis to record outside temperature as part of a daily weather log. • Make predictions based on observations rather than random guesses. Example: Given a collection of objects, predict which will sink and which will float. • Record and interpret observations and data. Example: Use data from weather journal to create a monthly weather graph. Example: Make a timeline to illustrate the life cycle of an insect. <p>✓ Write descriptions and/or draw pictures to represent</p> |

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| | <p>sequences of steps, events, and observations.</p> <p>Examples: Create scientific diagrams illustrating a life cycle; write the steps for doing an experiment with magnets.</p> <p>✓ Recognize importance of safety procedures and equipment.</p> <p>Example: Direct projectiles away from peers when flying gliders.</p> |
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Second Grade Nature of Science Performance Descriptors

Note: At the K-2 level, the teachers need to focus on observing and collecting information about the progress students are making related to the checkmark statements. The skills and concepts addressed in this goal are to be included across the other goals. Appropriate scientific instruction should provide students the opportunity to actively engage in scientific investigations.

**Second Grade Physical Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Describe structures and properties of, and changes in, matter.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|--|
| (Application) | <p>2.P.1.1. Students are able to classify solids in terms of the materials they are made of and their physical properties.</p> <p>Examples of materials: cloth, paper, wood, metal, plastic, etc.</p> <p>Examples of physical properties: color, size, shape, opacity, mass, texture, flexibility, etc.</p> <ul style="list-style-type: none"> • Define a solid. |
| (Comprehension) | <p>2.P.1.2. Students are able to describe visually observable properties of liquids and classify liquids by their physical properties.</p> <p>Examples: translucent, transparent, opaque, color, foamy, bubbly, viscous, etc.</p> <ul style="list-style-type: none"> • Define a liquid. ✓ Explore properties of gases. <p>Example: Use a balloon to demonstrate air taking the shape of the container.</p> |
| (Application) | <p>2.P.1.3. Students are able to identify mixtures of solid substances and ways to separate them.</p> <p>Examples: Separate trail mix, rocks and sand, types of beans.</p> |

Indicator 2: Analyze forces, their forms, and their effects on motions.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|--|
| (Application) | <p>2.P.2.1. Students are able to demonstrate how moving objects exhibit different types of motion.</p> <p>Examples: straight, circular, back and forth</p> <ul style="list-style-type: none"> • Describe motions of common objects in terms of change in position or direction (e.g., up-down, left- right, fast-slow). • Describe how pushes or pulls can change motion of an object. |

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| (Application) | <p>2.P.2.2. Students are able to predict the effects of magnets on other magnets and other objects.</p> <ul style="list-style-type: none"> • Attracting and repelling Example: Stack donut magnets on a pencil. Example: Use classroom objects to test which objects are attracted to the magnet. <p>✓ Explore magnetic poles. Example: Use a bar magnet to move another bar magnet.</p> |
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Indicator 3: Analyze interactions of energy and matter.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|--|
| (Comprehension) | <p>2.P.3.1. Students are able to compare sounds in terms of high pitch, low pitch, loud and soft (volume).</p> <p>Example: Use a variety of rubber band widths and sizes to compare the pitch and volume when the band is plucked.</p> <p>✓ Describe ways heat can be produced. Example: Create heat by rubbing hands together. Example: Turn on heat lamp to warm incubator.</p> <p>✓ Demonstrate how light can pass through some objects and not others.</p> <ul style="list-style-type: none"> • Predict the casting of shadows. Example: Use 2- and 3-dimensional objects at different distances from light source to cast a variety of shadows. <p>✓ Explore sources of energy. Examples: Discuss moving water, food, wind, sun, rubber bands, batteries as sources of energy.</p> |

**Second Grade Physical Science
Performance Descriptors**

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| Advanced | Second grade students performing at the advanced level: <ul style="list-style-type: none">• predict the casting of shadows;• select materials based on physical properties to solve a task;• identify ways to separate mixtures, including solids and liquids;• describe interactions of magnetic poles;• demonstrate ways to change pitch;• describe ways heat can be produced. |
| Proficient | Second grade students performing at the proficient level: <ul style="list-style-type: none">• describe and classify solids and liquids in terms of physical properties;• identify and separate mixtures;• demonstrate different ways objects move and affect other objects;• compare sounds in terms of pitch and volume. |
| Basic | Second grade students performing at the basic level: <ul style="list-style-type: none">• describe solids and liquids in terms of physical properties;• demonstrate ways objects move;• compare sounds in terms of volume. |

**Second Grade Life Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|---|
| (Application) | <p>2.L.1.1. Students are able to classify plants according to similarities and differences.</p> <p>Examples: Classify plants by kinds of seeds, color, size, shape, and structure.</p> |
| (Application) | <p>2.L.1.2. Students are able to classify people and animals according to similarities and differences.</p> <p>Examples: Classify animals by color, size, shape, body parts, gender, and offspring.</p> |

Indicator 2: Analyze various patterns and products of natural and induced biological change.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|--|
| (Comprehension) | <p>2.L.2.1. Students are able to describe how flowering plants go through a series of orderly changes in their life cycle.</p> <p>Example: Illustrate ways flowering plants undergo many changes from the formation of a flower to the development of the fruit.</p> |
| (Comprehension) | <p>2.L.2.2. Students are able to compare life cycles of various living things.</p> <p>Example: Diagram life cycles using tadpoles to frogs and kittens to cats.</p> |

Indicator 3: Analyze how organisms are linked to one another and the environment.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|------------------------|---|
| (Comprehension) | <p>2.L.3.1. Students are able to describe ways that plants and animals depend on each other.</p> <p>Example: Illustrate ways seeds are dispersed in the environment.</p> <p>Example: Describe how cattle need grass in order to survive.</p> |
| (Comprehension) | <p>2.L.3.2. Students are able to associate adaptations in plants and animals in response to seasonal changes.</p> <p>Examples: Find examples of animals that migrate, hibernate, use camouflage, or go dormant.</p> |
| (Knowledge) | <p>2.L.3.3. Students are able to recognize what it means for a species to be extinct or endangered.</p> <p>Examples: Discuss dinosaurs, black-footed ferret, mammoth.</p> |

**Second Grade Life Science
Performance Descriptors**

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|-------------------|---|
| Advanced | <p>Second grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • illustrate and label examples of plant and animal life cycles; • explain how plants and animals depend on each other and respond to seasonal changes in the environment; • identify possible reasons for the disappearance of a species. |
| Proficient | <p>Second grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • given illustrations, classify plants and animals according to their similarities and differences; • sequence a plant life cycle and an animal life cycle; • describe ways plants and animals depend on each other and respond to seasonal changes in the environment; • identify a species that is extinct and one that is endangered. |
| Basic | <p>Second grade students performing at the basic level:</p> <ul style="list-style-type: none"> • given illustrations, describe similarities between plants or between animals; • describe an example of a life cycle of a plant or of an animal; • identify a species that is extinct. |

**Second Grade Earth/Space Science
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Analyze the various structures and processes of the Earth system.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|--|
| (Comprehension) | <p>2.E.1.1. Students are able to describe types and patterns of weather during different seasons.</p> <ul style="list-style-type: none"> • Measure and record weather data such as high and low temperature, wind, precipitation, clouds using tools such as a rain gauge, anemometer, wind sock, etc. <p>✓ Practice reading thermometers.</p> |
| (Knowledge) | <p>2.E.1.2. Students are able to identify and locate geological features using maps and globes.</p> <p>Examples: Locate mountains, plains, valleys, and bodies of water on a globe or map.</p> <ul style="list-style-type: none"> • Recognize most of the Earth's surface is covered with water. |
| (Comprehension) | <p>2.E.1.3. Students are able to recognize and distinguish between forms of water in the Earth system.</p> <p>Examples: snow, ice, fresh water, salt water</p> <p>✓ Recognize ways fossils provide evidence about plants and animals that lived long ago.</p> <p>Example: Looking at fossilized teeth, determine if animal ate plants or meat.</p> |

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|--|
| | <p>✓ Identify the basic components of space.</p> <p>Examples: Label Sun, Moon, planets, stars.</p> |

**Second Grade Earth/Space Science
Performance Descriptors**

| | |
|-------------------|---|
| Advanced | <p>Second grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • identify the basic components of space; • read a thermometer. |
| Proficient | <p>Second grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • describe types and patterns of weather during different seasons; • identify and locate geological features using maps and globes; • recognize and distinguish between forms of water in the Earth system. |
| Basic | <p>Second grade students performing at the basic level:</p> <ul style="list-style-type: none"> • describe the weather associated with a season; • identify land and water on maps and globes. |

**Second Grade Science, Technology, Environment, and Society
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: These skills should be taught and practiced in grade-level study of Physical, Life, and Earth/Space Science although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|--|
| | <ul style="list-style-type: none"> ✓ Explore how technology has changed daily life. Examples: Compare and contrast: email/postal service, computers/pencils, light bulb/candles, microwave/wood-burning stove, etc. ✓ Recognize ways to recycle, reuse, renew, and reduce. Examples: Generate ideas on ways to reuse, renew, or reduce the use of water, trees, soil, and other natural resources. |

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

Note: These skills should be taught and practiced in grade-level study of Physical, Life, and Earth/Space Science although mastery is not expected at these grade levels.

| Bloom's Taxonomy Level | Standard, Supporting Skills, and Examples |
|-------------------------------|--|
|-------------------------------|--|

| | |
|--|--|
| | <ul style="list-style-type: none">✓ Investigate and describe ways science/technology is used to solve problems. Examples: Describe ways wheels and ramps make it easier to do work; there are handicap-accessible modifications for public buildings.✓ Explain how scientific findings have generated solutions to various environmental and social concerns. Example: Discuss water pollution, West Nile, germs, and diseases. |
|--|--|

**Second Grade Science, Technology, Environment, and Society
Performance Descriptors**

Note: At the K-2 level, the teachers need to focus on observing and collecting information about the progress students are making related to the checkmark statements. The skills and concepts addressed in this goal are to be included across the other goals. Appropriate scientific instruction should provide students the opportunity to actively engage in scientific investigations.

**NATURE OF SCIENCE STANDARDS
K-2**

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at these grade levels.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at these grade levels.

**PHYSICAL SCIENCE STANDARDS
K-2**

Indicator 1: Describe structures and properties of, and changes in, matter.

| Kindergarten | First Grade | Second Grade |
|---|--|---|
| K.P.1.1. (Comprehension) Use senses to describe solid objects in terms of physical attributes. | 1.P.1.1. (Analysis) Categorize objects by physical attributes such as color, size, and shape. | 2.P.1.1. (Application) Classify solids in terms of the materials they are made of and their physical properties. |
| K.P.1.2. (Knowledge) Identify water in its solid and liquid forms. | 1.P.1.2. (Comprehension) Compare objects in terms of heavier or lighter. | 2.P.1.2. (Comprehension) Describe visually observable properties of liquids and classify liquids by their physical properties. |
| | 1.P.1.3. (Application) Predict how common materials interact with water. | 2.P.1.3. (Application) Identify mixtures of solid substances and ways to separate them. |

Indicator 2: Analyze forces, their forms, and their effects on motions.

| Kindergarten | First Grade | Second Grade |
|---------------------|--|--|
| | 1.P.2.1. (Comprehension) Describe relative positions of objects. | 2.P.2.1. (Application) Demonstrate how moving objects exhibit different types of motion. |
| | | 2.P.2.2. (Application) Predict the effects of magnets on other magnets and other objects. |

Indicator 3: Analyze interactions of energy and matter.

| Kindergarten | First Grade | Second Grade |
|---------------------|--------------------|--|
| | | 2.P.3.1. (Comprehension) Compare sounds in terms of high pitch, low pitch, loud and soft (volume). |

**LIFE SCIENCE STANDARDS
K-2**

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

| Kindergarten | First Grade | Second Grade |
|---|--|--|
| K.L.1.1. (Application) Sort living from non-living things. | 1.L.1.1. (Application) Discover life needs of green plants. | 2.L.1.1. (Application) Classify plants according to similarities and differences. |
| | 1.L.1.2. (Knowledge) Identify the parts of a plant. | 2.L.1.2. (Application) Classify people and animals according to similarities and differences. |
| | 1.L.1.3. (Knowledge) List life needs of people and other animals. | |

Indicator 2: Analyze various patterns of inheritance and biological change.

| Kindergarten | First Grade | Second Grade |
|---------------------|--|--|
| | 1.L.2.1. (Comprehension) Describe physical similarities and differences between parents and offspring. | 2.L.2.1. (Comprehension) Describe how flowering plants go through a series of orderly changes in their life cycle. |
| | | 2.L.2.2. (Comprehension) Compare life cycles of various living things. |

Indicator 3: Analyze how organisms are linked to one another and the environment.

| Kindergarten | First Grade | Second Grade |
|---------------------|--|--|
| | 1.L.3.1. (Application) Relate characteristics of plants and animals that allow them to live in specific habitats. | 2.L.3.1. (Comprehension) Describe ways that plants and animals depend on each other. |
| | | 2.L.3.2. (Comprehension) Associate adaptations in plants and animals in response to seasonal changes. |
| | | 2.L.3.3. (Knowledge) Recognize what it means for a species to be extinct or endangered. |

**EARTH/SPACE SCIENCE STANDARDS
K-2**

Indicator 1: Analyze the various structures and processes of the Earth system.

| Kindergarten | First Grade | Second Grade |
|--|--|--|
| K.E.1.1. (Comprehension) Describe simple Earth patterns in daily life. | 1.E.1.1. (Comprehension) Recognize changes in weather over time. | 2.E.1.1. (Comprehension) Describe types and patterns of weather during different seasons. |
| | 1.E.1.2. (Comprehension) Describe rocks in terms of properties. | 2.E.1.2. (Knowledge) Identify and locate geological features using maps and globes. |
| | | 2.E.1.3. (Comprehension) Recognize and distinguish between forms of water in the Earth system. |

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

Note: Mastery is not expected at these grade levels.

**SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY STANDARDS
K-2**

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: Mastery is not expected at these grade levels.

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

Note: Mastery is not expected at these grade levels.