- Required to be taught to meet state content standards in science
- ✓ Information introduced for the next grade level
- + Brookings School District additional requirements

First Grade Nature of Science

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

Bloom's Taxonomy Level	Standard	Supporting Skills	Assessments	Resources	Technology
	(Mastery of this indicator does not emerge until eighth grade.)	+Students recognize that people contribute to science. +Students explore the world around them. +Students use investigation in science to produce knowledge			1.NC.1.1 Distinguish between the natural and human made world

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	Assessments	Resources	Technology
		✓ Use scientific thinking skills of observing, communicating, classifying, and comparing. • Enhance observations by using senses and simple instruments/tools to identify differences in			1.NC.1.2 Describe how people use tools Example: builders use hammers, farmers use tractor, store clerks use cash registers

		properties. Example: Use magnets, balance scales, hand lenses, rulers for simple experiments. ✓ 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. Example: Conduct simple experiments to answer questions about familiar objects and events. • 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 • Record observations and data. Example: Use pictures, numbers, graphs, or written statements to record experiment data			

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

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

Bloom's Taxonomy Level	Standards	Supporting Skills & Examples	Assessments	Resources	Technology
(Analysis)	**1.P.1.1. Students are able to categorize objects by physical attributes such as color, size, and shape.**	Examples: Sort leaves, rocks, buttons, seeds, beans, animals. Observe physical changes in matter Example: Popped and unpopped popcorn.			
(Comprehension)	**1.P.1.2. Students are able to compare objects in terms of heavier or lighter.**	Example: Use film canisters filled with various materials such as pennies, sand, yarn, popcorn, washers. Students order the canisters from lightest to heaviest.			

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources	Technology
(Application)	1.P.1.3. Students are able to predict how common materials interact with water.	• Floating/sinking Example: Use items to float/sink: clay, wood, cork, pencils, crayons, coins, cotton balls, etc. ✓ Students experiment using soluble/nonsoluble products Example: mix the following with hot and cold water: salt, sugar, toothpaste, oil, pepper, raisins, etc.		Kitchen Chemistry Easy Science Experiments pg. 5-17 skipping page 13	

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources	Technology
(Comprehension)	1.P.2.1. Students are able to describe relative positions of objects.	Examples: Use positional words (far, near, in front, behind) to describe the location of objects in the classroom or on the playground. ✓ Students are able to demonstrate 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. ✓ Students are able to			

		demonstrate ways to make objects move faster or slower or in a different direction. 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. +Students understand different types of motions. Examples: pushes and pulls, swings (tire swing, pendulum) Example: Straight, circular, back and forth +Students demonstrate how movement of objects influence other objects. Examples: collision of marbles Example: Pushes and pulls can change motion of an object in terms of speed and direction +Students demonstrate how objects that possess energy can do work on other objects. Example: push or pull, swing, bicycle.			

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	Assessments	Resources	Technology
		✓ Identify heat and light sources. Example: Identify heat and light sources in student's home: oven, lamp, furnace, candle, etc. (Warning: DO NOT TOUCH) ✓ Students are able to create shadows. Example: Use a light source and solid objects to create shadows on the wall. Example: Loud & soft sound; high & low pitch			

First Grade Physical Science
Performance Descriptors

Advanced	**First grade students performing at the advanced level:** • 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	**First grade students performing at the proficient level:** • 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	**First grade students performing at the basic level:**
	• 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

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources	Technology
(Application)	**1.L.1.1. Students are able to discover life needs of green plants.**	+Grow plants using variables such as sunlight/no sunlight, soil/no soil, sand or rock.		Study Trip: McCrory Gardens	
(Knowledge)	**1.L.1.2. Students are able to identify the parts of a plant.**	Examples: Draw and label seeds, roots, stems, fruit, leaves, flower. +Students identify characteristics of plants.		Easy Science Experiments. Pgs 24-27	
(Knowledge)	**1.L.1.3. Students are able to list life needs of people and other animals.**	Example: Illustrate life needs of an animal living in your area. (Be sure to include food, air, water,			

		place to live as life needs.)			
		+Students identify ways living things change and grow.			
		+Students identify characteristics of animals.			
		Examples: plants, insects, and birds.			

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources	Technology
(Comprehension)	**1.L.2.1. Students are able to describe physical similarities and differences between parents and offspring.** .	Example: Tell how puppies are like dogs, ducklings are like ducks, etc. ✓ The student will identify characteristics of animals Example: Incubator (chicks) Example: birds and insects (lady bugs) Example: life cycle of monarch butterfly Example: life cycle of frogs		See How They Grow: Penguins Great Plains Zoo or Bramble Park Zoo The Ladybug and Other Insects (Scholastic) The Egg (Scholastic)	

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources	Technology
(Application)	**1.L.3.1. Students are able to relate characteristics of plants and animals that allow them to live in specific habitats.**	Example: Explain what physical characteristics allow a fish to live in water, or a cactus on the prairie, etc. 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. Example: animals (zoo, farm, wild, and pets)		Study Trips: zoo/farm Birth Day: A Celebration of Baby Animals Great Plains Zoo/Bramble Park Zoo Ag Fair (SDSU) Dairy Bar (SDSU) Ceres	

First Grade Life Science
Performance Descriptors

Advanced	**First grade students performing at the advanced level:** • 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:** • 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:**

		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

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources	Technology

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources	Technology
(Comprehension)	**1.E.1.1. Students are able to recognize changes in weather over time.**	Example: Graph sunny, cloudy, rainy, windy, and stormy days. +Students identify four seasons +Fall, Winter, Spring Summer, seasonal changes +Introduce weather terms +Water cycle, evaporation, water vapor, condensation +Students identify what happens when weather changes. Examples: Erosion, floods, tornadoes, blizzards		Jo Anderson Meteorologists (692-8742) Dennis is Todey Meteorologist (693-3616)	
(Comprehension)	**1.E.1.2. Students are able to describe rocks in terms of properties.**	Example: Describe the texture, size, and color of a rock.			

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources	Technology
		✓ Identify what can be			

| | | observed in the sky by the unaided eye in the day and at night.

Example: Illustrate a day sky and a night sky including sun, moon, stars, clouds, etc, | | | |
|---|---|---|---|---|---|

First Grade Earth/Space Science
Performance Descriptors

Advanced	**First grade students performing at the advanced level:** • identify what can be observed in the sky by the unaided eye in the day and at night.
Proficient	**First grade students performing at the proficient level:** • recognize changes in weather over time; • describe rocks.
Basic	**First grade students performing at the basic level:** • describe the current day's weather; • identify rocks .

First Grade Science, Technology, Environment, and Society

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	Assessments	Resources	Technology
		✓ Describe ways technology makes life easier for people. Example: Explain ways computers, lamps, microwave, pencil sharpener, pens make life easier. Contribute to solving problems ✓ 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 and at home			1.NC.1.1 Distinguish between the natural and human-made world

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	Assessments	Resources	Technology
		✓ 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 trashcan in the park or on the school playground. Discuss how to prevent hazardous situations Examples: fire and pollution			

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.