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

Third Grade Nature of Science

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	Assessments	Resources
		✓ Identify scientific contributions. • Automobile • Telephone • Flight • Motors • People ✓ Explain science as a process involving asking and answering questions. +Science involves asking and answering questions and comparing results already known. +Variables effect the outcome of the investigation; not everyone will get the same results		

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	Assessments	Resources
		✓ Use investigations in science to acquire knowledge. Example: Investigate plant growth given environmental variables. • Make observations. • Make predictions. • Ask questions. • Plan investigations. ✓ Use appropriate scientific equipment and proper safety • procedures in all investigations. • Use appropriate metric measurement to collect, record, chart, and/or graph data. • Interpret data. • Communicate results. • Variables affect outcome.		

Third Grade Nature of Science
Performance Descriptors

Note: At the third grade 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.

Third Grade Physical Science

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

Bloom's Taxonomy Level	Standard,	Supporting Skills, and Examples	Assessments	Resources
(Comprehension)	**3.P.1.1. Students are able to describe physical properties of matter using the senses (touch, smell, etc.).**	Examples: color, size, shape, hardness, opacity, flexibility, texture, smell, temperature, weight • Define the five senses. Sort items according to properties • Define solid, liquid, and gas. • Particles of matter is known as atoms		
(Application)	**3.P.1.2. Students are able to use tools to relate composition to physical properties.**	Example**:** Use a magnifying glass to observe that matter is made of component parts. • Describe the basic characteristics of matter in relation to space and mass. • Particles and movement of matter - Atoms • Recognize changes in matter from one state to another using water – solid, liquid and gas Introduce water cycle		
(Application)	**3.P.1.3. Students are able to demonstrate how a different substance can be made by combining two or more substances.**	• Identify a mixture. Examples: Flour and water make paste. Flour, water, and salt make play-dough.		

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources
	(Mastery of this indicator does not emerge until fourth grade.)	+ Introduce Simple Machines - inclined planes, wedge, screw, gears and pulleys, wheel and axle + Introduce Magnetism + Introduction of poles – attract and repel; north and south poles		

Indicator 3: Analyze interactions of energy and matter.

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources
(Knowledge)	**3.P.3.1. Students are able to define energy and differentiate between sources of renewable and non-renewable energy.**	• Sources of energy • Describe renewable and non-renewable energy. Examples, renewable: wind and water Examples, non-renewable: coal and oil		
(Application)	**3.P.3.2. Students are able to demonstrate how sound consists of vibrations and pitch.**	• Relate the rate of vibration to the pitch of sound. Example: tuning fork vibrations • Slow vibrations cause low tones; high tones are caused by fast vibrations. Example: Varied levels of water in glass containers being struck create different pitches.		
(Knowledge)	**3.P.3.3. Students are able to identify how sound is used as a means of communication.**	• Give examples of kinds of communication. Examples: telephone ringing, train whistle, fire alarm, sirens, voice, and animal noises		

Third Grade Physical Science
Performance Descriptors

Advanced	**Third grade students performing at the advanced level:** • compare and contrast the physical properties of granite and calcite; • predict what would happen if we overused a renewable or non-renewable energy/resource; • demonstrate how sound travels.
Proficient	**Third grade students performing at the proficient level:** • use a magnifying glass to observe and describe the physical properties of a rock; • demonstrate how individual materials combine to make a different substance; • define energy and label pictures of renewable and non-renewable energy; • demonstrate how sound consists of vibrations and how pitch changes; • explain the different ways sound is used to communicate.
Basic	**Third grade students performing at the basic level:** • recognize physical properties of object; • use flour and water to make a substance; • sort pictures of renewable and non-renewable energy; • recognize different pitches.

Third 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
(Knowledge)	**3.L.1.1. Students are able to identify the basic structures, functions, and needs of plants in relation to their environment.**	+ Basic structure and functions of plants Examples: leaves, stems, roots, flowers • Differentiate between plants and animals. ✓ Soil is important to plants and animals ✓ Environmental factors can effect endangered animals		
(Knowledge)	**3.L.1.2. Students are able to identify characteristic features of animals and their related functions in relation to their environment.**	+ Differentiate between animals. Examples: wings/ hollow bones, webbed feet, fins + Basic structure and function of animals Example: body covering, mobility, basic ways of getting food, and basic life cycle		
(Comprehension)	**3.L.1.3. Students are able to describe life cycles, including growth and metamorphosis, of familiar organisms.**	• Differentiate between adult males and females. Example: dull-colored female birds/colorful male		

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources
(Analysis)	**3.L.2.1. Students are able to explain how animals instinctively meet basic needs in their environment.**	• Give examples of basic needs. Example: Instincts such as baby birds know to open their mouths for food; newborn turtles know to go to water. + Behavioral and physical adaptations - shelter, defending themselves, hibernation and camouflage		

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources
(Comprehension)	**3.L.3.1. Students are able to describe how species depend on one another and on the environment for survival.**	• Describe cause-and-effect relationships in living systems. +Relationship and interaction on living things- +Food Chain +Oxygen Cycle		
(Comprehension)	**3.L.3.2. Students are able to explain how environments support a diversity of plants and animals.**	• Describe types of environments. Example: deserts and what lives there + Environmental factors affect on living things within the eco system – deserts rainforests, artic tundra, ocean grassland		
(Comprehension)	**3.L.3.3. Students are able to describe ways humans impact air, water, and habitat quality.**	Example: water pollution from chemical waste • Define pollution		
(Application)	**3.L.3.4. Students are able to examine fossils and describe how they provide evidence of change in organisms.**	• Define a fossil. + Endangered mammals		

Third Grade Life Science
Performance Descriptors

Advanced	**Third grade students performing at the advanced level:** • explain how an animal or plant is specially adapted to meet its survival needs; • analyze the impact humans have on the environment.
Proficient	**Third grade students performing at the proficient level:** • name the basic structures, functions, characteristics, and basic needs of plants and animals; • describe life cycles, including growth and metamorphosis, of familiar organisms; • describe how living things are supported by the environment, yet are diverse and interdependent; • describe ways humans impact air, water, and habitat quality; • describe how fossils provide evidence of change.
Basic	**Third grade students performing at the basic level:** • explain the basic needs of plants and animals; • explain how plants and animals adapt to their environment; • name one way humans affect the environment; • identify a fossil.

Third 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	Assessments	Resources
(Knowledge)	**3.E.1.1. Students are able to define the difference between a rock and a mineral.**	+Physical characteristics of rocks and minerals Example: Minerals look the same throughout while you can see different minerals within a rock. ✓ Examine fossils and describe how they are formed. +Soil components important to plants and animals. +Natural force affects surface of earth, waves, wind, water, earthquakes, and volcanoes		
(Comprehension)	**3.E.1.2. Describe how humans use Earth's natural resources.**	Example: using minerals for jewelry or trees for paper • Define natural resources.		

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
(Knowledge)	**3.E.2.1. Students are able to identify the Earth as one of the planets that orbits the Sun.**	• All planets orbit the Sun. Earth and moon orbits • Describe the causes for Earth's seasons – sequence of natural events. Example: day and night & seasonal changes		
(Analysis)	**3.E.2.2. Students are able to recognize changes in the appearance of the Moon over time.**	+ Phases of the moon – new moon, 1st quarter, full moon, last quarter, surface of the moon • Know that the Moon does not change shape, but at different times appears to change shape. ✓ Explain the relationship between the rotation of the Earth on its axis and the day/night cycle.		

Third Grade Earth/Space Science
Performance Descriptors

Advanced	**Third grade students performing at the advanced level:** • compare and contrast rocks and minerals; • create a visual representation of the Sun and planets.
Proficient	**Third grade students performing at the proficient level:** • group rocks and minerals; • describe Earth's natural resources and their products; • identify the Sun, Earth, and Moon as a system; • describe the change in appearance of the Moon over time.
Basic	**Third grade students performing at the basic level:** • locate the Sun and the Earth; • recognize natural resources.

Third Grade Science, Technology, Environment, and Society

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

Bloom's Taxonomy Level	Standard	Supporting Skills and Examples	Assessments	Resources
(Analysis)	**3.S.1.1. Students are able to recognize ways to recycle, reuse, and reduce consumption of natural resources.**	Example: using less water when brushing your teeth to reduce consumption of water • Define recycle, reuse, and reduce. + Compare amount of recyclable to non recyclable 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	Assessments	Resources
		✓ Investigate how natural events and human influences can affect the survival of species. Examples: rainfall, flooding, and drought + Relationship between the use of different natural resources and the environment Example: Hunting regulations have developed to control wildlife populations. ✓ Describe solutions to environmental problems, problem solving + People find new ways to do things and get work done. Examples: Improved transportation, health sanitation, communication Example: planting grass to prevent erosion caused by runoff Example: using no-till farming to prevent erosion + Solutions may have constraints – cost material, time, space and safety + Survival of species – natural events		

		(human influence) + Population resources and environments are interrelated		

Third Grade Science Technology, Environment, and Society
Performance Descriptors

Advanced	**Third grade students performing at the advanced level:** • analyze ways recycling, reusing, and reducing conserves natural resources.
Proficient	**Third grade students performing at the proficient level:** • recognize items for reuse or recycling.
Basic	**Third grade students performing at the basic level:** • recognize items for reuse or recycling.