

CORRELATION TO

ALASKA

SCIENCE PERFORMANCE STANDARDS (GRADE LEVEL EXPECTATIONS) GRADES 3-8





FULL OPTION SCIENCE SYSTEM (FOSS)

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ALASKA SCIENCE PERFORMANCE STANDARDS (GRADE LEVEL EXPECTATIONS) GRADES 3-8

The following is a correlation of the Alaska Performance Standards for Science to the Full Option Science System Program (FOSS). This correlation lists representative examples of investigations and activities that address the science content standards and benchmarks. A citation does not necessarily reflect all of the activities from FOSS that might address a particular standard.

June, 2007 Updated September 2008

GRADE THREE

A1 - Science as Inquiry and Process

A1 – Science as In	
PERFORMANCE STANDARD	FOSS
The student develops an understanding of the processes of science by:	
[3] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating.	FOSS uses an inquiry approach and develops science process skills in all investigations. See for example: Magnetism and Electricity Investigation 4, Parts 1-3, pp. 8-22 Water Investigation 3, Parts 1-4, pp. 8-24 Physics of Sound Investigation 2, Parts 1-3, pp. 8-24 Earth Materials Investigation 1, Parts 1-3, pp. 8-29 Sun, Moon and Stars Investigation 1, Parts 1-2, pp. 42-64
[3] SA1.2 observing and describing their world to answer simple questions.	Measurement Investigation 2, Part 3, pp. 18-21 Structures of Life Investigation 3, Parts 1-4, pp. 8-30 Ideas and Inventions Investigation 2, Parts 1-2, pp. 8-19 Water Investigation 3, Parts 1-4, pp. 8-26 Sun, Moon and Stars Investigation 2, Parts 1-2, pp. 79-100
The student will demonstrate an understanding of attitudes and approaches to scientific inquiry by:	
[3] SA2.1 answering, "How do you know?" questions with reasonable answers.	Water Investigation 4, Part 1, pp. 8-13 Measurement Investigation 3, Part 3, pp. 18-21 Magnetism and Electricity Investigation 1, Part 4, pp. 30-34 Earth Materials Investigation 4, Part 1, pp. 8-13
The student demonstrates an understanding that interactions with the environment provide an opportunity for understanding scientific concepts by:	
[3] SA3.1 observing local conditions that determine which plants and/or animals survive.(L)	Structures of Life Investigation 1, Part 2, pp. 18-27 Investigation 2, Parts 1-2, pp. 8-17 Investigation 3, Part 2, pp. 16-19 Science Stories, pp. 4-5, 10-11, 22-34 Water Science Stories, pp. 5-7

B1 - Concepts of Physical Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the structure and properties of matter by:	1 000
[3] SB1.1 classifying matter according to physical properties (i.e., color, size, shape, weight, texture, flexibility).	Magnetism and Electricity Investigation 1, Part 1, pp. 8-17 Investigation 2, Part 3, pp. 20-25 Earth Materials Investigation 2, Parts 1-2, pp. 8-21 Ideas and Inventions Investigation 2, Part 1, pp. 8-15
The student demonstrates an understanding of how energy can be transformed, transferred, and conserved by:	
[3] SB2.1 classifying materials as insulators or conductors (i.e., fur, metal, wood, plastic) and identifying their applications.	Magnetism and Electricity Investigation 2, Part 3, pp. 20-25
The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by:	
[3] SB3.1 recognizing that temperature changes cause changes in phases of substances (e.g., ice changing to liquid, water changing to water vapor, and vice versa).	Water Investigation 2, Part 3, pp. 19-24 Investigation 3, Parts 1-4, pp. 8-26 Science Stories, pp. 1-2, 8-10, 13-16 FOSS Web, Activity: Evaporation
The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects by:	. 200 Tros, Hourity. Evaporation
[3] SB4.2 recognizing that objects can be moved without being touched (e.g. using magnets, falling objects, static electricity).	Magnetism and Electricity Investigation 1, Parts 1-4, pp. 8-34 Investigation 4, Parts 1-3, pp. 8-22 Science Stories, pp. 1-11 FOSS Web, Activity: Electromagnets

C1 – Concepts of Life Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution by:	
[3] SC1.1 sorting Alaskan plants and/or animals using physical characteristics (e.g., leaves, beaks). (L)	Local Objective See below for FOSS examples: Structures of Life Investigation 1, Part 1, pp. 8-17 Investigation 4, Part 2, pp. 14-19 Science Stories, pp. 1, 17, 41-42

[3] SC1.2 describing how some traits (e.g., claws, teeth, camouflage) of living organisms have helped them survive as a species.

The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by:

[3] SC2.1 sorting animals and plants into groups based on appearance and behaviors.

[3] SC2.2 observing and comparing external features of plants and of animals that may help them grow, survive, and reproduce.

The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by:

[3] SC3.1 identifying and sorting examples of living and non-living things in the local environment. (L)

[3] SC3.2 organizing a simple food chain of familiar plants and animals. (L)

FOSS Web, Pictures **Human Body** Science Stories, p. 11

Structures of Life
Investigation 2, Part 3, pp. 18-22
Investigation 3, Part 1, pp. 8-15
Investigation 4, Parts 1-2, pp. 8-19
Science Stories, pp. 1, 3, 17-18, 20, 34, 39
FOSS Web, Pictures
Human Body

Science Stories, pp. 9-11

Structures of Life

Investigation 4, Part 2, pp. 14-19 Science Stories, pp. 1, 17, 41-42 FOSS Web, Activity: Life Cycles Human Body Science Stories, p. 11

Structures of Life
Investigation 2, Part 3, pp. 18-22
Investigation 3, Part 1, pp. 8-15
Investigation 4, Parts 1-2, pp. 8-19
Science Stories, pp. 1, 3, 17-18, 20, 34, 39
FOSS Web, Pictures
Human Body

Science Stories, pp. 9-11

Structures of Life

Investigation 1, Part 1, pp. 8-17 Investigation 3, Part 1, pp. 8-15 Investigation 4, Parts 1-2, pp. 8-19 Science Stories, pp. 1, 3, 17-18, 22-34, 41-42 FOSS Web, Pictures

Human Body

Science Stories, pp. 9-11

Earth Materials

Investigation 1, Part 2, pp.16-23 Investigation 2, Parts 1-2, pp. 8-21 Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 30-37 FOSS Web, Activity: Rock Database

FOSS provides the opportunity to address this standard. See below:

Structures of Life Science Stories, p. 43

D1 - Concepts of Earth Science

PERFORMANCE STANDARD	of Earth Science FOSS
The student demonstrates an	1 000
understanding of geochemical cycles by:	
[3] SD1.1 recognizing that most rocks are composed of combinations of different substances.	Earth Materials Investigation 1, Parts 1-3, pp. 8-29 Investigation 3, Parts 1-2, pp. 8-19 Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 2-4, 30-33
[3] SD1.2 describing the water cycle to show that water circulates through the crust, oceans, and atmosphere of Earth.	Water Science Stories, pp. 13-15 FOSS Web, Pictures: Water Cycle
The student demonstrates an understanding of the forces that shape Earth by:	
[3] SD2.1 identifying and comparing a variety of Earth's land features (i.e., rivers, deltas, lakes, glaciers, mountains, valleys, and islands).	Earth Materials Science Stories, pp. 5-7 Water Science Stories, pp. 4-9, 12
The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by:	
[3] SD3.1 using recorded weather patterns (e.g., temperature, cloud cover, or precipitation) to make reasonable predictions. (L)	This standard is addressed in the grade 2 module <u>Air and Weather</u> .
The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by:	
[3] SD4.1 recognizing that objects appear smaller the farther away they are.	Ideas and Inventions Science Stories, pp. 33-34, 37-38 Sun, Moon and Stars Investigation 3, Part 2, pp. 126-130 Science Resources, pp. 15, 35, 37
[3] SD4.2 recognizing that objects have properties, locations, and movements that can be observed and described.	Ideas and Inventions Science Stories, pp. 33-37 Sun, Moon and Stars Investigation 1, Parts 1-2, pp. 42-64 Investigation 2, Parts 1-2, pp. 79-100 Investigation 3, Parts 1-2, pp. 114-130 Science Resources, pp. 3-49
[3] SD4.3 recognizing and using appropriate instruments of magnification (e.g., binoculars and telescopes). (L)	Ideas and Inventions Science Stories, p. 38 Sun, Moon and Stars Investigation 3, Part 2, pp. 126-130 Science Resources, pp. 40-43, 47

E1 - Science and Technology

E1 – Science a	
PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how to integrate scientific knowledge and technology to address problems by:	
[3] SE1.1 identifying problems and discussing solutions. (L)	Water Investigation 3, Parts 2-3, pp. 12-20 Investigation 4, Parts 1-2, pp. 8-13 Measurement Investigation 3, Part 3, pp. 18-21 Structures of Life Investigation 4, Part 3, pp. 20-24 Physics of Sound Investigation 2, Parts 1-3, pp. 8-24
The student demonstrates an understanding that solving problems involves different ways of thinking, perspective, and curiosity by:	
[3] SE2.1 identifying local tools and materials used in everyday life. (L)	Ideas and Inventions Investigation 2, Parts 1-2, pp. 8-19 Investigation 3, Parts 1-2, pp. 8-17 Magnetism and Electricity Investigation 1, Part 3, pp. 23-29 Investigation 2, Parts 1-3, pp. 8-25 Water Investigation 2, Part 3, pp. 19-24 Measurement Investigations 1-4 Earth Materials Investigation 1, Parts 1-2, pp. 8-23
The student demonstrates an understanding of how scientific discoveries and technological innovations affect our lives and society by:	
[3] SE3.1 listing the positive and negative effects of a single technological development in the local community (e.g., fish trap, fish wheel, four-wheeler, computer). (L)	Physics of Sound Science Stories, pp. 32-34 Measurement Science Stories, pp. 22-23 Water Science Stories, pp. 18-21, 23 Magnetism and Electricity Science Stories, pp. 34-37

F1- Cultural, Social, Personal Perspectives, and Science

1 1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by:	
[3] SF1.1-SF3.1 exploring local or traditional stories that explain a natural event. (L) Cross	Magnetism and Electricity Science Stories, pp. 1-4

referenced with SA3.1	Earth Materials
	Science Stories, pp. 16-23

G1 – History and Nature of Science

	ivature or ocience
PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the bases of the advancement of scientific knowledge by:	
[3] SG2.1 comparing the results of multiple observations of a single local event. (L)	Magnetism and Electricity Investigation 4, Parts 2-3, pp. 14-22 Human Body Investigation 4, Parts 2-3, pp. 17-24 Measurement Investigation 2, Part 3, pp. 18-24 Physics of Sound Investigation 2, Parts 1-3, pp. 8-24 Sun, Moon and Stars Investigation 1, Part 2, pp. 56-64
The student demonstrates an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base by:	
[3] SG4.1 asking questions about the natural world.	Earth Materials Investigation 3, Parts 1-2, pp. 8-19 Structures of Life Investigation 3, Parts 1-4, pp. 8-30 Water Investigation 3, Parts 1-4, pp. 8-26 Ideas and Inventions Investigation 2, Parts 1-2, pp. 8-19 Sun, Moon and Stars Investigation 1, Parts 1-2, pp. 42-64

GRADE FOUR

A1 - Science as Inquiry and Process

A1 – Science as in	
PERFORMANCE STANDARD	FOSS
The student develops an understanding of	
the processes of science by:	
[4] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.	FOSS uses an inquiry approach and develops science process skills in all investigations. See for example: Magnetism and Electricity Investigation 4, Parts 1-3, pp. 8-22 Water Investigation 3, Parts 1-4, pp. 8-24 Physics of Sound Investigation 2, Parts 1-3, pp. 8-24 Earth Materials Investigation 1, Parts 1-3, pp. 8-29 Sun, Moon and Stars Investigation 1, Parts 1-2, pp. 42-64
[4] SA1.2 observing, measuring and collecting data from explorations and using this information to classify, predict, and communicate.	Magnetism and Electricity Investigation 4, Parts 2-3, pp. 14-22 Water Investigation 4, Part 1, pp. 8-13 Measurement Investigation 2, Part 3, pp. 18-24 Investigation 3, Part 3, pp. 18-21 Structures of Life Investigation 1, Part 3, pp. 28-33 Sun, Moon and Stars Investigation 1, Parts 1-2, pp. 42-64
The student will demonstrate an understanding of attitudes and approaches to scientific inquiry by:	
[4] SA2.1 supporting their ideas with observations and peer review. (L) The student demonstrates an understanding that interactions with the environment provides an opportunity for the student demonstrates and the student demonstrates are student demonstrates and the student demonstrates and the student demonstrates are student demonstrates are student demonstrates and the studen	FOSS provides the opportunity to address this standard. Investigations require observations and post-investigation peer review. See examples below: Water Investigation 3, Parts 1-4, pp. 8-24 Physics of Sound Investigation 2, Parts 1-3, pp. 8-24 Magnetism and Electricity Investigation 4, Parts 2-3, pp. 14-22 Water Investigation 4, Part 1, pp. 8-13 Sun, Moon and Stars Investigation 1, Parts 1-2, pp. 42-64
understanding scientific concepts by: [4] SA3.1 identifying the local limiting factors (e.g., weather, human influence, species	Structures of Life Investigation 1, Part 2, pp. 18-27
interactions) that determine which plants and	Investigation 2, Parts 1-2, pp. 8-17

/or animals survive. (L)	Investigation 3, Part 2, pp. 16-19 Science Stories, pp. 4-5, 10-11, 22-34 Water
	Science Stories, pp. 5-7

B1 – Concepts of Physical Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the structure and properties of matter by:	1 000
[4] SB1.1 identifying and comparing the characteristics of gases, liquids, and solids.	Water Investigation 1, Part 1, pp. 8-13 Investigation 2, Part 3, pp. 19-24
The student demonstrates an understanding of how energy can be transformed, transferred, and conserved by:	Investigation 3, Part 1, pp. 8-11 Science Stories, pp. 1-2, 8-9, 13
[4] SB2.1 investigating the effectiveness of different insulating and conducting materials with respect to heat flow and record the results. (L)	
The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by:	
[4] SB3.1 explaining that temperature changes cause changes in phases of substances (e.g., ice changing to liquid water and liquid water to water vapor).	Water Investigation 2, Part 3, pp. 19-24 Investigation 3, Parts 1-4, pp. 8-26 Science Stories, pp. 1-2, 8-10,13-16 FOSS Web, Activity: Evaporation
The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects by:	1 000 Web, 7 louvily. Evaporation
[4] SB4.1 simulating the changes in speed or direction of motion are caused by forces. (L)	Water Investigation 4, Part 2, pp. 14-18 Structures of Life Investigation 4, Part 3, pp. 20-24 Human Body Investigation 3, Parts 1-3, pp. 8-21

C1 – Concepts of Life Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution by:	
[4] SC1.1 showing the relationship between physical characteristics of Alaskan organisms and the environment in which they live.	Local Objective Structures of Life Investigation 3, Part 1, pp. 8-15 Investigation 4, Part 1, pp. 8-13

[4] SC1.2 describing fossil evidence (e.g., casts, track ways, imprints, etc.) of extinct organisms.

Science Stories, pp. 17-18, 22-34

Earth Materials

Science Stories, p. 4 Human Body

Science Stories, pp. 21-24

Structures of Life

Science Stories, pp. 45-48

The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by:

[4] SC2.1 choosing appropriate tools (i.e., hand lens, microscopes, ruler, balance) to examine the basic structural components (e.g., stems, leaves, fish scales, wings) of living things.

[4] SC2.2 describing the basic characteristics

and requirements of living things.

The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by:

[4] SC3.1 identifying examples of living and non-living things <u>and the relationship between them</u> (e.g., living things need water, herbivores need plants).

[4] SC3.2 identifying a simple food chain, diagramming how energy flows through it, and describing the effects of removing one link.

Structures of Life

Investigation 1, Part 3, pp. 28-33 Investigation 2, Part 3, pp. 18-22 Investigation 4, part 3, pp. 20-24 Human Body Investigation 1, Part 3, pp. 21-25 Ideas and Inventions Investigation 2, Parts 1-2, pp. 8-19

Structures of Life

Investigation 2, Part 2, pp. 14-17 Investigation 3, Parts 1-2, pp. 8-19 Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 17-18, 39-40 **Human Body**

Science Stories, p. 17

Structures of Life

Investigation 1, Part 2, pp. 18-27 Investigation 2, Part 2, pp. 14-17 Investigation 3, Part 2, pp. 11-19 Science Stories, pp. 17-19, 22-34 Water

Science Stories, pp. 5-7

FOSS provides the opportunity to address this standard. See below:

Structures of Life

Science Stories, p. 43

D1 – Concepts of Earth Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of geochemical cycles by:	
[4] SD1.1 describing that most smaller rocks come from the breaking and weathering of larger rocks as part of the rock cycle.	Earth Materials Science Stories, pp. 6-7, 35

[4] SD1.2 recognizing the physical properties of water as they relate to the rock cycle.

The student demonstrates an understanding of the forces that shape Earth by:

[4] SD2.1 observing models of how waves. wind, water, and ice shape and reshape the Earth's surface by eroding rock and soil. (L) This standard is addressed in the grade 5 module Landforms.

[4] SD2.2 identifying causes (i.e., earthquakes, tsunamis, volcanoes, floods, landslides, and avalanches) of rapid changes on the surface.

This standard is addressed in the grade 5 module Landforms

The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by:

[4] SD3.1 recognizing changes to length of daylight over time and its relationship to seasons.

[4] SD3.2 observing that heat flows from one object to another. (L)

The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by:

[4] SD4.1 recognizing that stars are like the sun but are so far away that they look like points of light.

[4] SD4.2 recognizing that objects have properties, locations, and movements that can be observed and described.

[4] SD4.3 recognizing and using appropriate instruments of magnification (e.g., binoculars and telescopes). (L)

Sun. Moon and Stars

Science Resources, pp. 7, 10-11

This standard is addressed in the grade 5 module Solar Energy.

Ideas and Inventions

Science Stories, p. 37

Sun, Moon and Stars

Investigation 3, Part 2, pp. 114-130 Science Resources, pp. 15, 35-36, 39, 47

Ideas and Inventions

Science Stories, pp. 33-37 Sun. Moon and Stars

Investigation 1. Parts 1-2, pp. 42-64 Investigation 2, Parts 1-2, pp. 79-100 Investigation 3, Parts 1-2, pp. 114-130 Science Resources, pp. 3-49

Ideas and Inventions

Science Stories, p. 38

Sun, Moon and Stars

Investigation 3, Part 2, pp. 126-130 Science Resources, pp. 40-43, 47

E1 - Science and Technology

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how to integrate scientific	
knowledge and technology to address	

problems by:

[4] SE1.1 recognizing that tools (e.g., spear, hammer, hand lens, kayak, computer) and processes (e.g., drying fish, sewing, photography) are an important part of human cultures.

The student demonstrates an understanding that solving problems involves different ways of thinking, perspective, and curiosity by:

[4] SE2.1 identifying the function of a variety of tools (e.g., spear, hammer, hand lens, kayak, computer).

[4] SE 2.2 identifying multiple explanations (e.g., oral traditions, folklore, scientific theory) of everyday events (e.g., weather, seasonal changes). (L)

The student demonstrates an understanding of how scientific discoveries and technological innovations affect our lives and society by:

4] SE3.1 listing the positive and negative effects of a <u>scientific</u> discovery.

Ideas and Inventions

Investigation 2, Parts 1-3, pp. 8-22

Measurement

Investigation 1-4

Science Stories, pp. 21-23

Magnetism and Electricity

Investigation 4, Part 1, pp. 8-13 Investigation 5, Part 1, pp. 8-14 Science Stories, pp. 28-33

Water

Investigation 2, Parts 1, 3, pp. 8-13, 19-24 Science Stories, pp. 18-20

Ideas and Inventions

Investigation 1, Part 1, pp. 8-15

Measurement

Investigation 1, Part 2, pp. 16-19 Investigation 2, Part 2, pp. 14-17 Investigation 3, Part 2, pp. 14-17 Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 21-23 Magnetism and Electricity Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 28-31

Earth Materials

Science Stories, pp. 5-7, 16-23

Human Body

Science Stories, pp. 5-6

F1 - Cultural, Social, Personal Perspectives, and Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by:	
[4] SF1.1-SF3.1 connecting observations of nature to a local or traditional story that explains a natural event (e.g., animal adaptation, weather, rapid changes to Earth's surface). (L) Cross referenced with SA3.1, grades 3 and 6, 4.	Earth Materials Science Stories, pp. 5-7, 16-23

G1 – History and Nature of Science

	TOCC
PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the bases of the advancement of scientific knowledge by:	
[4] SG2.1 recognizing the need for repeated measurements.	FOSS provides the opportunity to address this standard. See below: Human Body Investigation 4, Parts 2-3, pp. 17-24 Magnetism and Electricity Investigation 1, Part 3, pp. 23-29 Measurement Investigation 2, Part 3, pp. 18-24 Investigation 3, Part 3, pp. 18-21 Water Investigation 3, Parts 2-3, pp. 12-19
The student demonstrates an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base by:	
[4] SG4.1 using an account of a discovery to recognize that an individual's (e.g., George Washington Carver, Marie Curie) curiosity led to advancements in science.	Structures of Life Science Stories, pp. 6-9 Magnetism and Electricity Science Stories, pp. 12-19, 21-23, 34-37 Ideas and Inventions Science Stories, pp. 1-3, 17-22 Sun, Moon and Stars Science Resources, p. 40

GRADE FIVE

A1 – Science as Inquiry and Process

PERFORMANCE STANDARD	FOSS
The student develops an understanding of the processes of science by:	
[5] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.	FOSS uses an inquiry approach and develops science process skills in all investigations. See for example: Variables Investigation 2, Parts 1-3, pp. 8-23 Food and Nutrition Investigation 2, Parts 1-3, pp. 8-25 Environments Investigation 5, Parts 1-3, pp. 8-22 Solar Energy Investigation 2, Parts 1-2, pp. 8-24
[5] SA1.2 using quantitative and qualitative observations to create their own inferences and predictions.	Mixtures and Solutions Investigation 1, Parts 1-4, pp. 8-29 Levers and Pulleys Investigation 1, Parts 2-3, pp. 18-28 Landforms Investigation 2, Parts 1-2, pp. 8-22 Models and Designs Investigation 4, Parts 1-2, pp. 6-15
The student will demonstrate an understanding of attitudes and approaches to scientific inquiry by:	
[5] SA2.1 supporting their statements with facts from a variety of resources and by identifying their sources. (L)	Landforms Investigation 5, Part 4, pp. 27-31 Food and Nutrition Investigation 4, Part 2, pp. 21-25 Environments Investigation 6, Parts 1-3, pp. 18-22 Solar Energy Investigation 4, Part 4, pp. 29-33
The student demonstrates an understanding that interactions with the environment provides an opportunity for understanding scientific concepts by:	
[5] SA3.1 identifying the limiting factors (e.g., weather, human influence, species interactions) that determine which plants and /or animals survive.	Environments Investigation 3, Parts 1-3, pp. 8-22 Investigation 5, Parts 1-3, pp. 8-22 Investigation 6, Parts 1-2, pp. 8-17 Science Stories, pp. 35-37, 43-45 FOSS Web, Activity: Virtual Aquarium

B1 – Concepts of Physical Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the structure and properties of matter by:	1000
[5] SB1.1 comparing models that represent matter as solids, liquids, or gases and the changes from one state to another. (L)	This standard is addressed in the grade six module <u>Chemical Interactions</u> .
The student demonstrates an understanding of how energy can be transformed, transferred, and conserved by:	
[5] SB2.1 classifying the changes (i.e., heat, light, sound, and motion) that electrical energy undergoes in common household appliances (i.e., toaster, blender, radio, light bulb, heater).	This standard is addressed in the grade four module Magnetism and Electricity.
The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by:	
[5] SB3.1 identifying physical and chemical changes based on observable characteristics (e.g., tearing paper vs. burning paper).	Mixtures and Solutions Investigation 1, Parts 1-3, pp. 8-24 Investigation 4, Parts 1-3, pp. 8-24 Science Stories, pp. 18-19, 23-24, 26-28 FOSS Web, Movie: Physical and Chemical Changes Food and Nutrition Investigation 2, Part 1, pp. 8-17 Investigation 3, Part 1, pp. 8-15
The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects by:	
[5] SB4.1 investigating that the greater the force acting on an object, the greater the change in motion will be. (L)	Variables Investigation 1, Parts 1-2, pp. 8-22 Investigation 3, Parts 1-2, pp. 8-19 Investigation 4, Parts 1-2, pp. 8-17 Models and Designs Investigation 3, Parts 1-3, pp. 8-19 Levers and Pulleys Investigation 1, Parts 2-3, pp. 18-28 Investigation 3, Parts 1-2, pp. 8-20

C1 – Concepts of Life Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution by:	

[5] SC1.1 contrasting inherited traits (e.g., flower color, number of limbs) with those that are not (riding a bike, scar from an accident).

[5] SC1.2 making reasonable inferences about fossil organisms based on physical evidence.

The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by:

[5] SC2.1 identifying and sorting animals into groups using basic external and internal features.

[5] SC2.2 explaining how external features and internal systems (i.e., respiratory, excretory, skeletal, circulatory and digestive) of plants and animals may help them grow, survive, and reproduce.

[5] SC2.3 recognizing that organisms are composed of cells.

The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by:

[5] SC3.1 diagramming how matter and energy are transferred within and between living and nonliving things.

[5] SC3.2 organizing a simple food chain of familiar plants and animals that traces the source of the energy back to sunlight.

Environments

Science Stories, pp. 47-48 **Food and Nutrition** Science Stories, p. 16

Models and Designs

Science Stories, pp. 11-16

This standard is addressed in the grade six module <u>Diversity of Life</u>.

Environments

Science Stories, pp. 9-22 **Food and Nutrition** Science Stories, pp. 6-9, 41-50

Food and Nutrition

Science Stories, pp. 41-50

This standard is addressed in the grade six module <u>Populations and Ecosystems</u>.

Environments

Science Stories, p. 38-41 **Food and Nutrition**

Science Stories, p. 43

See also:

This standard is addressed in the grade six module <u>Populations and Ecosystems</u>.

D1 - Concepts of Earth Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of geochemical cycles by:	
[5] SD1.1 observing a model of the rock cycle	
showing that smaller rocks come from the breaking and weathering of larger rocks and	
that smaller rocks (e.g., sediments and sands) may combine with plant materials to form soil.	
(L)	
The student demonstrates an	

understanding of the forces that shape Earth by:

[5] SD2.1 describing how wind and water tear down and build up the Earth's surface resulting in new land formations (i.e., deltas, moraines, and canyons).

The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by:

[5] SD3.1 observing a model that shows how the regular and predictable motion of the Earth and moon determine the apparent shape (phases) of the moon over time. (L)

[5] SD3.2 comparing heat absorption and loss by land and water.

The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by:

[5] SD4.1 distinguishing between stars, planets, moons, comets, and meteors. (L)

[5] SD4.2 recognizing that the Earth is in regular and predictable motion and this motion explains the length of a day and year.

[5] SD4.3 recognizing and using appropriate instruments of magnification (e.g., binoculars and telescopes). (L)

Landforms

Investigation 2, Parts 1-2, pp. 8-22 Investigation 3, Parts 1-2, pp. 8-23 Science Stories, pp. 15-17, 25-29 FOSS Web, Activity: Jigsaw Puzzle

This standard is addressed in the grade six module <u>Planetary Science</u>.

Solar Energy

Investigation 2, Part 2, pp. 16-24 Science Stories, p. 24

Solar Energy

Science Stories, pp. 40-43

This standard is addressed in the grade six module Planetary Science.

Models and Designs

Science Stories, p. 9

E1 - Science and Technology

Li – Science and Technology		
PERFORMANCE STANDARD	FOSS	
The student demonstrates an understanding of how to integrate scientific knowledge and technology to address problems by:		
[5] SE1.1 identifying a community problem or issue and describing the information needed to develop a scientific solution. (L)	Mixtures and Solutions Science Stories, pp. 20-22 Environments Science Stories, p. 36 Landforms Science Stories, pp. 13-14 Solar Energy Science Stories, pp. 32-33	
The student demonstrates an understanding that solving problems involves different ways of thinking, perspective, and curiosity by:		

[5] SE2.1 investigating a problem or project over a specified period of time and identifying the tools and processes used in that project. (L)	Mixtures and Solutions Science Stories, pp. 43-45 Environments Science Stories, p. 36 Food and Nutrition Science Stories, pp. 34-36 Models and Designs Science Stories, pp. 6-9
[5] SE 2.2 comparing multiple explanations (e.g., oral traditions, folklore, scientific theory) of everyday events (e.g., weather, seasonal changes). (L)	Variables Science Stories, pp. 12-14 Solar Energy Science Stories, pp. 6-7
The student demonstrates an understanding of how scientific discoveries and technological innovations affect our lives and society by:	
[5] SE3.1 describing the various effects of an innovation (e.g., snow machines, airplanes, immunizations) on the safety, health, and environment of the local community. (L)	Models and Designs Science Stories, pp. 29-36, 44-47 Solar Energy Science Stories, pp. 29-33, 35-39

F1 - Cultural, Social, Personal Perspectives, and Science

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PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by:	
[5] SF1.1-SF3.1 telling a local or traditional story that explains a natural event (e.g., animal adaptation, weather, rapid changes to Earth's surface) and relating it to a scientific explanation. (L) Cross referenced with SA3.1	Variables Science Stories, pp. 12-14 Solar Energy Science Stories, pp. 6-7

G1 – History and Nature of Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the bases of the advancement of scientific knowledge by:	
[5] SG2.1 reviewing and recording results of investigations into the natural world.	Variables Investigation 2, Parts 1-3, pp. 8-23 Food and Nutrition Investigation 2, Parts 1-3, pp. 8-25 Environments Investigation 5, Parts 1-3, pp. 8-22 Solar Energy Investigation 2, Parts 1-2, pp. 8-24
The student demonstrates an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base by:	

[5] SG4.1 investigating that scientists' curiosity led to advancements in science. (L)	Variables Science Stories, pp. 4-6, 12-14 Food and Nutrition Science Stories, pp. 24-25, 34-35 Models and Designs
	Science Stories, pp. 5-10 Mixtures and Solutions Science Stories, pp. 43-45

GRADE SIX

A1 - Science as Inquiry and Process

A1 – Science as Inquiry and Process	
PERFORMANCE STANDARD	FOSS
The student develops an understanding of the processes of science by:	
[6] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.	FOSS uses an inquiry approach and develops science process skills in all investigations. See for example: Variables Investigation 2, Parts 1-3, pp. 8-22 Food and Nutrition Investigation 2, Parts 1-3, pp. 8-25 Solar Energy Investigation 2, Parts 1-2, pp. 8-24 Weather and Water Investigation 4, Part 1, pp. 121-130 Human Brain and Senses Investigation 7, Parts 1-2, pp. 210-225
[6] SA1.2 collaborating to design and conduct simple repeatable investigations. (L)	Variables Investigation 3, Part 3, pp. 20-23 Landforms Investigation 3, Parts 1-3, pp. 8-23 Solar Energy Investigation 3, Part 3, pp. 8-23 Diversity of Life Investigation 8, Part 2, pp. 244-252 Planetary Science Investigation 5, Parts 2-3, pp. 153-167
The student will demonstrate an understanding of attitudes and approaches to scientific inquiry by:	
[6] SA2.1 Identifying and differentiating fact from opinion.	FOSS provides the opportunity to address this standard. See below: Variables Investigation 3, Part 3, pp. 20-23 Landforms Investigation 3, Parts 1-3, pp. 8-23 Solar Energy Investigation 3, Part 3, pp. 8-23 Diversity of Life Investigation 8, Part 2, pp. 244-252 Planetary Science Investigation 5, Parts 2-3, pp. 153-167
The student demonstrates an understanding that interactions with the environment provides an opportunity for understanding scientific concepts by:	
[6] SA3.1 gathering data to build a knowledge base that contributes to the development of questions about the local environment (e.g., moose browsing, trail usage, river erosion). (L)	Landforms Science Stories, pp. 13-14, 36-37 Mixtures and Solutions Science Stories, pp. 20-21

Weather and Water
Resources, pp. 63-66
Earth History
Resources, pp. 64-67

B1 - Concepts of Physical Science

B1 – Concepts of	Physical Science
PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the structure and properties of matter by:	
[6] SB1.1 using models to represent matter as it changes from one state to another.	Chemical Interactions Resources, pp. 16-27, 42-48
The student demonstrates an understanding of how energy can be transformed, transferred, and conserved by:	
[6] SB2.1 recognizing that energy can exist in many forms (i.e., heat, light, chemical, electrical, mechanical).	Solar Energy Investigation 2, Parts 1-2, pp. 8-24 Science Stories, pp. 1-3, 16 FOSS Web, Activity: Solar Road Race Food and Nutrition Science Stories, pp. 15, 42 Models and Designs Science Stories, pp. 37-42 Chemical Interactions Resources, pp. 23-48 Electronics Investigations 1-9 Resources, pp. 1-2, 12-13
The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by:	
[6] SB3.1 recognizing that most substances can exist as a solid, liquid, or gas depending on temperature.	Weather and Water CD, Matter and Energy: Molecules in solids, Liquids and Gases Chemical Interactions Investigation 4, Parts 1-3, pp. 122-141 Resources, pp. 23-27, 42-48 Investigation 7, Parts 1-5, pp. 204-234 CD, Particles in Solid, Liquid and Gas
The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects by:	
[6] SB4.2 stating that every object exerts gravitational force on every other object.	Models and Design Science Stories, pp. 40-41 Solar Energy Science Stories, pp. 43-44 Force and Motion Investigation 7, Part 1, pp. 256-261

	Resources, pp. 62-69 Planetary Science Resource, pp. 70, 84-85
[6] SB4.3 making waves move through a variety of media. (L)	

C1 – Concepts of Life Science	
PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution by:	
[6] SC1.1 recognizing sexual and asexual reproduction.	Diversity of Life Investigation 7, Part 1, pp. 218-233 Resources, pp. 26, 40-44, 53-54, 61-62 Populations and Ecosystems Resources, pp. 53-54
[6] SC1.2 recognizing that species survive by adapting to changes in their environment.	Environments Science Stories, pp. 11-17 Diversity of Life Investigation 9, Part 1, pp. 273-277 Populations and Ecosystems Investigation 8, Parts 1-2, pp. 228-243 Resources, pp. 42-45 Video: Hawaii: Strangers in Paradise
The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by:	
[6] SC2.1 using a <u>dichotomous key</u> to <u>classify</u> animals and plants into groups using external or internal features.	Diversity of Life Investigation 3, Part 3, pp. 116-122
[6] SC2.2 identifying basic behaviors (e.g., migration, communication, hibernation) used by organisms to meet the requirements of life.	Environments Science Stories, pp. 11-17 Diversity of Life Investigation 8, Part 2, pp. 244-252 Investigation 9, Parts 1-3, pp. 273-289 Resources, pp. 51-64
[6] SC2.3 describing the levels of organization within a human body (i.e., cells, tissues, organs, systems).	Diversity of Life Investigation 4, Parts 1-2, pp. 133-141 Resources, pp. 27-44 CD, Cells and the Ribbon of Life
The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by:	
[6] SC3.1 recognizing that organisms can	Food and Nutrition

cause physical and chemical changes (e.g., Science Stories, pp. 6-8, 43-50 digestion, growth, respiration, photosynthesis) **Diversity of Life** to matter and recognizing the importance of Resources, p. 36 energy transfer in these changes. **Populations and Ecosystems** Investigation 5, Part 2, pp. 22151-155 Resources, pp. 14-15 [6] SC3.2 organizing a food web using familiar **Environments** plants and animals. Science Stories, pp. 39-41 **Populations and Ecosystems** Investigation 4, Part 2, pp. 122-129 Investigation 5, Part 4, pp. 161-169 Resources, pp. 17-21

D1 - Concepts of Earth Science

CD, Mono Lake; Food Web

PERFORMANCE STANDARD FOSS		
The student demonstrates an understanding of geochemical cycles by:	1 000	
[6] SD1.1 exploring the rock cycle and its relationship to igneous, metamorphic, and sedimentary rocks. (L)	Earth History Investigation 4, Parts 5-6, pp. 150-162 Investigation 8, Parts 1-2, pp. 254-265 Resources, pp. 93-97 CD, Geology lab: Formation of Metamorphic, Sedimentary and Igneous Rocks	
[6] SD1.2 identifying the physical properties of water within the stages of the water cycle	Solar Energy Science Stories, p. 22-24 Weather and Water Investigation 7, Parts 1-2, pp. 232-243 CD, Cycles: Water Cycle	
The student demonstrates an understanding of the forces that shape Earth by:		
[6] SD2.1 describing the formation and composition (i.e., sand, silt, clay, organics) of soils.	Earth History Investigation 4, Parts 1-2, pp. 127-137	
[6] SD2.2 identifying and describing its layers (i.e., crust, mantle, core).	Landforms Science Stories, pp. 22-23 Earth History Resources, pp. 100-103	
[6] SD2.3 describing how the surface can change rapidly as a result of geological activities (i.e., earthquakes, tsunamis, volcanoes, floods, landslides, avalanches).	Landforms Investigation 2, Parts 1-2, pp. 8-22 Investigation 3, Parts 1-2, pp. 8-19 Science Stories, pp. 22-29 FOSS Web, Movie: Volcanic Eruption Earth History Investigation 4, Parts 3-4, pp. 138-149 Resources, pp. 100-105 Video: Weathering and Erosion	
The student demonstrates an understanding of cycles influenced by		

energy from the sun and by Earth's position and motion in our solar system by:	
[6] SD3.1 connecting the water cycle to weather phenomena.	Solar Energy Science Stories, pp. 22-25 Weather and Water Investigation 7, Parts 1-2, pp. 232-243 CD, Cycles: Water Cycle
[6] SD3.2 identifying that energy transfer is affected by surface conditions (e.g., snow cover, asphalt, vegetation) and that this affects weather.	Solar Energy Investigation 2, Part 2, pp. 16-24 Investigation 3, Parts 1-2, pp. 8-23 Science Stories, pp. 16-17, 22-24 Weather and Water Investigation 4, Part 1, pp. 121-130 CD, Cycles: Water Cycle
The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by:	
[6] SD4.1 contrasting characteristics of planets and stars (i.e., light reflecting, light emitting, orbiting, orbited, composition).	Solar Energy Science Stories, pp. 40-43 Planetary Science Investigation 10, Parts 1-3, pp. 312-324 Resources, pp. 84-59 CD, Planet Images CD, Notebook: Solar System

E1 - Science and Technology

[6] SD4.2 defining a light year.

Planetary Science Resources, P. 97

Li – Science a	na recimology
PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how to integrate scientific knowledge and technology to address problems by:	
[6] SE1.1 recognizing that technology cannot always provide successful solutions for problems or fulfill every human need.	Models and Designs Science Stories, pp. 31-32 Solar Energy Science Stories, pp. 35-37, 38-39 Landforms Science Stories, pp. 13-14 Populations and Ecosystems Resources, pp. 28-29
The student demonstrates an understanding that solving problems involves different ways of thinking, perspective, and curiosity by:	
[6] SE2.1 identifying and designing a solution to a problem.	Solar Energy Investigation 4, Part 3, pp. 24-28 Variables Investigation 4, Part 3, pp. 18-23 Models and Designs

[6] SE 2.2 comparing the student's work to the work of peers in order to identify multiple paths that can be used to investigate a question or problem. (L)	Investigation 4, Parts 1-2, pp. 6-15 Force and Motion Investigation 8 Part 2, pp. 294-301 Diversity of Life Investigation 8, Part 2, pp. 278-285 FOSS provides the opportunity to address this standard. See below: Solar Energy Investigation 3, Parts 1-2, pp. 18-23 Variables Investigation 3, Parts 2-3, pp. 14-23 Landforms Investigation 3, Parts 1-3, pp. 8-24 Diversity of Life Investigation 8, Part 2, pp. 278-285 Planetary Science Investigation 5, Parts 2-3, pp. 158-167
The student demonstrates an understanding of how scientific discoveries and technological innovations affect our lives and society by:	
[6] SE3.1 describing the various effects of an innovation on a global level.	Models and Designs Science Stories, pp. 44-47 Food and Nutrition Science Stories, pp. 24-25 Weather and Water Resources, pp. 63-66

F1 – Cultural, Social, Personal Perspectives, and Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by:	
[6] SF1.1-SF3.1 telling a local or traditional story that explains a natural event (e.g., animal adaptation, weather, rapid changes to Earth's surface) and relating it to a scientific explanation. (L) Cross referenced with SA3.1	Solar Energy Science Stories, pp. 5-7 Planetary Science Resources, pp. 54-58

G1 – History and Nature of Science

	Natare of Goldride
PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the bases of the advancement of scientific knowledge by:	
[6] SG2.1 recognizing differences in results of repeated experiments.	FOSS provides the opportunity to address this standard. See below: Solar Energy Investigation 3, Parts 1-2, pp. I8-23 Variables Investigation 3, Parts 2-3, pp. 14-23 Landforms Investigation 3, Parts 1-3, pp. 8-24

Diversity of Life
Investigation 8, Part 2, pp. 278-285
Planetary Science
Investigation 5, Parts 2-3, pp. 158-16

GRADE SEVEN

A1 - Science as Inquiry and Process

PERFORMANCE STANDARD	FOSS
The student develops an understanding of	FU35
the processes of science by:	
[7] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.	FOSS uses an inquiry approach and develops science process skills in all investigations. See for example: Weather and Water Investigation 5, Part 1, pp. 152-162 Human Brain and Senses Investigation 7, Parts 1-2, pp. 210-225 Force and Motion Investigation 1, Part 1, pp. 47-56 Earth History Investigation 4, Part 3, pp. 138-146
[7] SA1.2 collaborating to design and conduct simple repeatable investigations, in order to record, analyze (i.e., range, mean, median, mode), interpret data, and present findings. (L)	Diversity of Life Investigation 8, Part 2, pp. 244-252 Planetary Science Investigation 5, Parts 2-3, pp. 158-167 Electronics Investigation 5, Parts 1-2, pp. 161-170 Chemical Interactions Investigation 5, Part 3, pp. 165-171
The student will demonstrate an understanding of attitudes and approaches to scientific inquiry by:	
[7] SA2.1 Identifying and evaluating the sources used to support scientific statements.	FOSS provides the opportunity to address this standard. See below: Populations and Ecosystems Investigation 7, pp. 210-215 Planetary Science Investigation 10, Part 2, pp. 318-322 Human Brain and Senses Investigation 9, Part 2, pp. 270-275
The student demonstrates an understanding that interactions with the environment provides an opportunity for understanding scientific concepts by:	
[7] SA3.1 designing and conducting a simple investigation about the local environment. (L)	Weather and Water Investigation 4, Part 1, pp. 121-130 Investigation 6, Part 1, pp. 190-193 Earth History Investigation 4, Part 3, pp. 138-146 Diversity of Life Investigation 6, Part 3, pp. 198-202

B1 – Concepts of Physical Science

B1 – Concepts of Physical Science		
PERFORMANCE STANDARD	FOSS	
The student demonstrates an understanding of the structure and properties of matter by:		
[7] SB1.1 using physical properties (i.e., density, boiling point, freezing point, conductivity) to differentiate among and/or separate materials (i.e., elements, compounds, and mixtures).	Weather and Water Investigation 5, Part 1, pp. 152-162 Planetary Science Investigation 8, Parts 3-4, pp. 260-270 Chemical Interactions Investigation 1, Parts 1-2, pp. 41-58 Investigation 8, Part 1, pp. 248-255	
The student demonstrates an understanding of how energy can be transformed, transferred, and conserved by:		
[7] SB2.1 <u>explaining</u> that energy (i.e., heat, light, chemical, electrical, mechanical) <u>can change</u> form.	Electronics Investigation 1, Parts 1-3, pp. 55-70 Resources, pp. 1-2, 12-13 Force and Motion Investigation 1, Part 1, pp. 47-56 Populations and Ecosystems Investigation 5, Parts 1- 2, pp. 142-155 Resources, pp. 14-15	
The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by:		
[7] SB3.1 recognizing that most substances can exist as a solid, liquid, or gas depending on the motion of its particles.	Weather and Water Resources, pp. 25-26 CD, Matter and Energy: Molecules in Solids, Liquids and Gases Chemical Interactions Investigation 4, Parts 1-3, pp. 122-141 Investigation 7, Parts 1-5, pp. 204-234 Resources, pp. 23-27, 42-48 CD, Particles in Solid, Liquid and Gas	
The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects by:	OB, i diadice in Colla, Elquia and Cao	
[7] SB4.1 illustrating that unbalanced forces will cause an object to accelerate.	Force and Motion Investigation 1, Part 1, pp. 47-56 Investigation 2, Part 3, pp. 89-99 Investigation 5, Parts 1-4, pp. 169-201 Resources, pp. 32-35	
[7] SB4.2 recognizing that electric currents and magnets can exert a force on each other.		
[7] SB4.3 describing the characteristics of a wave (i.e., amplitude, wavelength, and frequency).		

C1 - Concepts of Life Science

C1 – Concepts of Life Science		
PERFORMANCE STANDARD	FOSS	
The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution by:		
[7] SC1.1 comparing and contrasting sexual and asexual reproduction.	FOSS provides the opportunity to address this standard. See below: Diversity of Life Investigation 7, Part 1, pp. 218-233 Resources, pp. 26, 40-44, 53-54, 61-62 Populations and Ecosystems Resources, pp. 53-54	
[7] SC1.2 describing possible outcomes of mutations (i.e., no effect, damage, benefit).		
The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by:		
[7] SC2.1 describing the basic structure and function of plant and animal cells.	Diversity of Life Investigation 3, Parts 1-2, pp. 102-115 Investigation 4, Parts 1-2, pp. 137-141 Resources, pp. 27-30 CD, Cells and the Ribbon of Life	
[7] SC2.2 identifying the seven levels of classification of organisms.	Diversity of Life Resources, pp. 65-68 Populations and Ecosystems Resources, p. 5	
[7] SC2.3 identifying and describing the functions of human organs (i.e., heart, lings, brain).	Human Brain and Senses Investigation 2, Parts 1-3, pp. 77-83 Investigation 5, Parts 3-4, pp. 165-175 Resources, pp. 63-78 CD, Vision: How the e Eye Looks CD, Brain	
The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by:		
[7] SC3.1 recognizing and explaining that organisms can cause physical and chemical changes (e.g., digestion, growth, respiration, photosynthesis) to matter and recognizing and explaining the importance of energy transfer in these changes.	Diversity of Life Resources, p. 36 Populations and Ecosystems Investigation 5, Parts 1-3, pp. 142-168 Resources, pp. 14-15	
[7] SC3.2 classifying organisms within a food web as producers, consumers, or decomposers.	Populations and Ecosystems Investigation 4, Part 2, pp. 122-129 Investigation 5, Parts 2-4, pp. 151-169 Resources, pp. 17-21	

CD, Mono Lake: Food Web

D1 – Concepts of Earth Science		
PERFORMANCE STANDARD	FOSS	
The student demonstrates an understanding of geochemical cycles by:		
[7] SD1.1 <u>describing</u> the rock cycle and its relationship to igneous, metamorphic, and sedimentary rocks.	Earth History Investigation 4, Parts 5-6, pp. 150-162 Investigation 8, Parts 1-2, pp. 254-265 Resources, pp. 93-97 CD, Geology Lab: Formation of Metamorphic, Sedimentary and Igneous Rocks	
[7] SD1.2 explaining the water cycle's connection to changes in the Earth's surface.	Weather and Water Investigation 7, Parts 1-2, pp. 232-243 CD: Cycles: Water Cycle	
The student demonstrates an understanding of the forces that shape Earth by:		
[7] SD2.1 identifying strategies (e.g., reforestation, dikes, wind breaks, off road activity guidelines) for minimizing erosion.		
[7] SD2.2 describing how the movement of tectonic plates results in both slow changes (e.g., formation of mountains, ocean floors, and basins) and short-term events (e.g., volcanic eruptions, seismic waves, and earthquakes) on the surface.	Earth History Resources, pp. 100-105	
The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by:		
[7] SD3.1 describing the weather using accepted meteorological terms (e.g., pressure systems, fronts, precipitation).	Weather and Water Investigation 1, Part 2, pp. 48-53 Investigation 6, Parts 2-4, pp. 194-213 Investigation 8, Parts 1-4, pp. 258-279 Investigation 9, Parts 1-2, pp. 296-310 Resources, pp. 37-42, 48-55	
[7] SD3.2 recognizing the relationship between phase changes (i.e., sublimation, condensation, evaporation) and energy transfer.	Chemical Interactions Investigation 7, Parts 1-5, pp. 204-234 Resources, pp. 42-48	
The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by:		
[7] SD4.1 <u>comparing</u> and contrasting characteristics of planets and stars (i.e., light reflecting, light emitting, orbiting, orbited, composition).	Planetary Science Investigation 10, Parts 1-3, pp. 312-324 Resources, pp. 84-89 CD, Planet Images	

	CD, Notebook: Solar System
[7] SD4.2 using light-years to describe distances between objects in the universe.	Planetary Science Resources, p. 97

E1 – Science and Technology

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how to integrate scientific knowledge and technology to address problems by:	. 333
[7] SE1.1 describing how public policy affects the student's life. (e.g., public waste disposal) (L)	
The student demonstrates an understanding that solving problems involves different ways of thinking, perspective, and curiosity by:	
[7] SE2.1 identifying, designing, testing and revising solutions to a local problem. (L)	Force and Motion Investigation 8, Part 2, pp. 294-301
[7] SE 2.2 comparing the student's work to the work of peers in order to identify multiple paths that can be used to investigate a question or problem. (L)	FOSS provides the opportunity to address this standard. See below: Planetary Science Investigation 5, Parts 2-3, pp. 158-167 Human Brain and Senses Investigation 7, Parts 1-2, pp. 210-225 Diversity of Life Investigation 8, Part 2, pp. 244-252 Force and Motion Investigation 8, Part 2, pp. 294-301
The student demonstrates an understanding of how scientific discoveries and technological innovations affect our lives and society by:	
[7] SE3.1 recognizing the effects of a past scientific discovery, invention, or scientific breakthrough (e.g., DDT, internal combustion engine).	Populations and Ecosystems Resources, pp. 46-55 Electronics Resources, pp. 34-36 Planetary Science Resources, pp. 90-95

F1 – Cultural, Social, Personal Perspectives, and Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by:	
[7] SF1.1-SF3.1 investigating the basis of local knowledge (e.g., describing and predicting weather) and sharing that information. (L)	FOSS provides the opportunity to address this standard. See below: Diversity of Life

Weather and Water Investigation 1, Part 2, pp. 48-53 Investigation 4, Part 1, pp. 121-130 Investigation 6, Part 1, pp. 190-193	
Earth History	
	Investigation 1, Part 2, pp. 48-53 Investigation 4, Part 1, pp. 121-130 Investigation 6, Part 1, pp, 190-193

G1 – History and Nature of Science

	Nature of Science
PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the bases of the advancement of scientific knowledge by:	
[7] SG2.1 <u>explaining</u> differences in results of repeated experiments.	FOSS provides the opportunity to address this standard. See below: Planetary Science Investigation 5, Parts 2-3, pp. 158-167 Diversity of Life Investigation 8, Part 2, pp. 278-285 Force and Motion Investigation 2, Part 3, pp. 89-99 Weather and Water Investigation 4, Part 1, pp. 121-130
The student demonstrates an understanding that scientific knowledge is ongoing and subject to change by:	
[7] SG3.1 revising a personal idea when presented with experimental/observational data inconsistent with that personal idea (e.g., the rates of falling bodies of different masses). (L)	FOSS provides the opportunity to address this standard. See below: Planetary Science Investigation 5, Parts 2-3, pp. 158-167 Diversity of Life Investigation 8, Part 2, pp. 278-285 Force and Motion Investigation 2, Part 3, pp. 89-99 Weather and Water Investigation 4, Part 1, pp. 121-130

GRADE EIGHT

A1 – Science as Inquiry and Process

PERFORMANCE STANDARD	FOSS
The student develops an understanding of the processes of science by:	
[8] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.	FOSS uses an inquiry approach and develops science process skills in all investigations. See for example: Weather and Water Investigation 5, Part 1, pp. 152-162 Human Brain and Senses Investigation 7, Parts 1-2, pp. 210-225 Force and Motion Investigation 1, Part 1, pp. 47-56 Earth History Investigation 4, Part 3, pp. 138-146
[8] SA1.2 collaborating to design and conduct repeatable investigations, in order to record, analyze (i.e., range, mean, median, mode), interpret data, and present findings. (L)	Diversity of Life Investigation 8, Part 2, pp. 244-252 Planetary Science Investigation 5, Parts 2-3, pp. 153-167 Electronics Investigation 5, Parts 1-2, pp. 161-170 Chemical Interactions Investigation 5, Part 3, pp. 165-171
The student will demonstrate an understanding of attitudes and approaches to scientific inquiry by:	
[8] SA2.1 recognizing and analyzing differing scientific explanations and models.	Force and Motion Resources, pp. 50-52 Planetary Science
The student demonstrates an understanding that interactions with the environment provides an opportunity for understanding scientific concepts by:	Resources, pp. 59-62
[8] SA3.1 conducting research to learn how the local environment is used by a variety of competing interests (e.g., competition for habitat/resources, tourism, oil and mining companies, hunting groups). (L)	Populations an Ecosystems Investigation 7, pp. 210-215 Resources, pp. 30-41

B1 – Concepts of Physical Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the structure and properties of matter by:	
[8] SB1.1 using physical and chemical properties (i.e., density, boiling point, freezing point, conductivity, flammability) to differentiate among materials (i.e., elements, compounds, and mixtures).	Weather and Water Investigation 5, Part 1, pp. 152-162 Planetary Science Investigation 8, Parts 3-4, pp. 260-270 Chemical Interactions

The student demonstrates an understanding of how energy can be transformed, transferred, and conserved

Investigation 1, Parts 1-2, pp. 41-58 Investigation 8, Part 1, pp. 248-255

[8] SB2.1 identifying the initial source and resulting change in forms of energy in common phenomena (e.g., sun to tree to wood to stove to cabin heat).

FOSS provides the opportunity to address this standard. See below:

Populations and Ecosystems

Investigation 5, Parts 1-2, pp. 142-155 Resources, pp. 14-15

Force and Motion

Investigation 1, Part 1, pp. 47-56

Electronics

Investigation 1, Parts 1-3, pp. 55-70 Resources, pp. 1-2, 12-13

The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by:

[8] SB3.1 exploring changes of state with increase or decrease of particle speed

associated with heat transfer. (L)

Weather and Water

Resources, pp. 25-26 CD, Matter and Energy: Molecules in Solids,

Liquids and Gases **Chemical Interactions**

Investigation 4, Parts 1-3, pp. 122-141 Investigation 7, Parts 1-5, pp. 204-234 Resources, pp. 23-27, 42-48 CD, Particles in Solid, Liquid and Gas

[8] SB3.2 exploring through a variety of models (e.g., gumdrops and toothpicks) how atoms may bond together into well defined molecules

or bond together in large arrays. (L)

The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects

[8] SB4.1 demonstrating (L) and explaining circular motion.

[8] SB4.2 describing the interactions between charges.

Chemical Interactions

Investigation 9, Parts 1-2, pp. 280-297 Video: Atoms and Molecules

Electronics

CD, Tech Manual: Atoms and Charge

CD, Static Electricity

C1 – Concepts of Life Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution by:	

[8] SC1.1 describing the role of genes in sexual reproduction (i.e., traits of the offspring).

The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by:

[8] SC2.1 placing vertebrates into correct classes of taxonomy based on external, observable features.

[8] SC2.2 explaining that most organisms utilize inherited and learned behaviors to meet the basic requirements of life.

[8] SC2.3 describing the functions and interdependence of human body systems (i.e., circulatory, respiratory, nervous).

The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by:

[8] SC3.1 stating that energy flows and that matter cycles but is conserved within an ecosystem.

[8] SC3.2 organizing a food web that shows the cycling of matter.

Populations and Ecosystems

Investigation 9, Parts 2-4, pp. 267-291 Resources, pp. 46-55

Populations and Ecosystems

Investigation 1, Part 3, pp. 55-59 Investigation 3, Part 3, pp. 103-107 Resources, pp. 42-45

Diversity of Life

Investigation 9, Parts 1-2, pp. 273-285 Resources, pp. 51-54, 58-64

Human Brain and Senses

Investigation 2, Parts 2-3, pp. 73-83 Investigation 5, Parts 3-4, pp. 165-175 Resources, pp. 43-46, 63-74

FOSS provides the opportunity to address this standard. See below:

Populations and Ecosystems

Investigation 4, Part 2, pp. 122-129 Investigation 5, Parts 2-4, pp. 151-169 Resources, pp. 17-21 CD, Mono Lake: Food Web

Populations and Ecosystems

Investigation 4, Part 2, pp. 122-129 Investigation 5, Parts 3-4, pp. 151-169 Resources, pp. 17-21 CD, Mono Lake: Food Web

D1 - Concepts of Earth Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of geochemical cycles by:	
[8] SD1.1 making connections between components of the locally observable geologic environment and the rock cycle. (L)	Earth History Investigation 4, Parts 5-6, pp. 150-162 Investigation 8, Parts 1-2, pp. 254-265 Resources, pp. 93-97 CD, Geology Lab: Formation of Metamorphic, Sedimentary and Igneous Rocks
[8] SD1.2 applying knowledge of the water	Weather and Water

cycle to explain changes in the Earth's surface.

Investigation 7, Parts 1-2, pp. 232-243 Resources, pp. 45-47 CD, Cycles: Water Cycle

The student demonstrates an understanding of the forces that shape Earth by:

[8] SD2.1 interpreting topographical maps to identify features (i.e., rivers, lakes, mountains, valleys, islands, and tundra).

[8] SD2.2 using models to show the relationship between convection currents within the mantle and the large-scale movement of the surface.

The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by:

[8] SD3.1 recognizing the relationship between the seasons and Earth's tilt relative to the sun and describing the day/night cycle as caused by the rotation of the Earth every 24 hrs.

[8] SD3.2 recognizing types of energy transfer (convection, conduction, and radiation) and how they affect weather.

The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by:

[8] SD4.1 creating models of the solar system illustrating size, location/position, composition, moon/rings, and conditions. (L)

[8] SD4.2 comparing the brightness of a star to its distance and size.

Earth History

Resources, pp. 100-103

Weather and Water

Investigation 3, Parts 2-3, pp. 97-110 Resources, pp. 17-19 CD, Cycles: Seasons **Planetary Science** Investigation 3, Parts 1-2, pp. 89-98 CD, Day/Night Simulation

Weather and Water

Investigation 4, Part 2, pp. 131-139 Investigation 5, Parts 2-3, pp. 163-174 Resources, pp. 32, 53-55

Planetary Science

Investigation 10, Parts 2-3, pp. 318-324

E1 - Science and Technology

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PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of how to integrate scientific knowledge and technology to address problems by:	
[8] SE1.1 describing how public policy affects their live and participating diplomatically in evidence-based discussions relating to their community. (L)	

The student demonstrates an understanding that solving problems involves different ways of thinking, perspective, and curiosity by:

[8] SE2.1 identifying, designing, testing and revising solutions to a local problem. (L)

[8] SE 2.2 comparing the student's work to the work of peers in order to identify multiple paths that can be used to investigate <u>and evaluate</u> potential solutions to a question or problem. (L)

The student demonstrates an understanding of how scientific discoveries and technological innovations affect our lives and society by:

[8] SE3.1 <u>predicting the possible effects of a recent</u> scientific discovery, invention, or scientific breakthrough. (L)

Force and Motion

Investigation 8, Part 2, pp. 294-301

FOSS provides the opportunity to address this standard. See below:

Planetary Science

Investigation 5, Parts 2-3, pp. 158-167

Human Brain and Senses

Investigation 7, Parts 1-2, pp. 210-225

Diversity of Life

Investigation 8, Part 2, pp. 244-252

Force and Motion

Investigation 8, Part 2, pp. 294-301

FOSS resources provide the opportunity to address this standard. See below:

Populations and Ecosystems

Resources, p. 55

Weather and Water

Investigation 9, Part 4, pp. 315-318

Resources, pp. 63-66

F1 - Cultural, Social, Personal Perspectives, and Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by:	
[8] SF1.1-SF3.1 describing how local knowledge, culture, and the technologies of various activities (e.g., hunting, fishing, subsistence) influence the development of scientific knowledge. (L) Cross referenced with SA3.1,grade 8	Force and Motion Investigation 8, Part 2, pp. 294-301

G1 – History and Nature of Science

PERFORMANCE STANDARD	FOSS
The student demonstrates an understanding of the bases of the advancement of scientific knowledge by:	
[8] SG2.1 describing how repeating experiments improves the likelihood of accurate results.	FOSS provides the opportunity to address this standard. See below: Planetary Science Investigation 5, Parts 2-3, pp. 158-167 Diversity of Life

The student demonstrates an understanding that scientific knowledge is ongoing and subject to change by:

[8] SG3.1 revising a personal idea when presented with experimental/observational data inconsistent with that personal idea (e.g., the rates of falling bodies of different masses). (L)

Investigation 8, Part 2, pp. 278-285
Force and Motion
Investigation 2, Part 3, pp. 89-9
Weather and Water
Investigation 4, Part 1, pp. 121-130

FOSS provides the opportunity to address this standard. See below:

Planetary Science

Investigation 5, Parts 2-3, pp. 158-167

Diversity of Life

Investigation 8, Part 2, pp. 278-285

Force and Motion

Investigation 2, Part 3, pp. 89-9

Weather and Water

Investigation 4, Part 1, pp. 121-130