CAROLINA
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Carolina™ Curriculum correlation to

Washoe County School District Science Grade Level Units of Study

for Grades K-5

Prepared by

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Carolina™ Curriculum correlation to Washoe County School District Science Grade Level Units of Study

This document gives a quick visual guide to the alignment of selected units with the Washoe County School District Science Grade Level Units of Study, grades K–5.

Although each STC® unit was developed for use at a specific grade level, there is some flexibility in grade placement. Recommended grade ranges are indicated in the chart below.
Carolina publishes additional units in the STC PROGRAM™ that are not included in this document. For more information about any STC PROGRAM™ unit, visit www.carolinacurriculum.com

Units with Recommended Grade Ranges

	STC® Units	Kids Discover /GEMS®/ Building Blocks of Science™
K	**Weather**	**Eggs, Eggs Everywhere** **Sifting Through Science**
1	**Organisms** **Soils** **Solids and Liquids**	
2	**Changes** **The Life Cycle of Butterflies**	**On Sandy Shores** **Sky Watchers** **Weight and Balance**
3	**Animal Studies**	**Hot Water and Warm Homes** **Involving Dissolving** **Measure It!**
4	**Electric Circuits** **Land and Water** **Motion and Design**	
5	**Ecosystems** **Experiments with Plants**	**Life Through Time** **Secret Formulas** **Space Science**

THE CURRICULUM

The STC PROGRAM™ is made up of 2 research-based, inquiry-centered curriculums:

- Science and Technology for Children® (STC®) for grades K–6; and
- Science and Technology Concepts for Middle Schools™ (STC/MS™) for grades 6–8

KIDS DISCOVER are non-fiction science readers. They are in-depth topic specific readers that include activities and brainteasers.

Building Blocks of Science™ is a K-5 supplementary science curriculum that can be used as stand-alone instruction.

Great Explorations in Math and Science® GEMS Kits® are standards-based PreK-8 math and science supplemental kits. The kits have been tested for specific grade levels but can also be used at lower or higher levels.

GEMS Space Science Sequence is a research-based 3-5 science curriculum that teaches fundamental concepts in space science.

LEGEND

To save paper, the curriculum location information in this document has been abbreviated as follows:

- TG = Teacher's Guide
- S-Sec3 = Section 3 (containing a section on safety) in the STC® Teacher's Guide
- L01, L02, etc. = Lesson 1, Lesson 2, etc.
- p, pp = page, pages
- RB = STC BOOK™ (a science reading book included in some of the grades 3–5 STC® unit kits)
- Exts = Extensions (found at the end of most lessons in the Teacher's Guide)
- App-A, App-B = Appendix A, Appendix B (found at the end of Section 4 in the Teacher's Guide)

Carolina™ Curriculum correlation to Washoe County School District Science Grade Level Units of Study

Kindergarten - NATURE OF SCIENCE

Scientific Inquiry (Nature of Science Unifying Concept A)

Scientific inquiry is the process by which humans systematically examine the natural world. Scientific inquiry is a human endeavor and involves observation, reasoning, insight, energy, skill, and creativity. Scientific inquiry is used to formulate and test explanations of nature through observation, experiments, and theoretical or mathematical models. Scientific explanations and evidence are constantly reviewed and examined by others. Questioning, response to criticism and open communication are integral to the process of science.

N.2.A -Students understand that science is an active process of systematically examining the natural world.

N.2.A.1 – Students know how to make observations and give descriptions using words, numbers and drawings. E/S

Weather -TG: L01 (pp3-10), L02.Exts (pp15-16), L03-L17 (pp25-150)

N.2.A.2 – Students know tools (instruments) can be used safely to gather data and extend the senses. (i.e. using a magnifying glass to extend the observations).I/L

Weather -TG: L02 (pp11-24), L05-L10 (pp43-100), S-Sec3 (pp9-12)

N.2.A.3 -Students know observable patterns can be used to predict future events or sort two items. E/S

Weather -TG: L03 (pp25-32), L08.Exts (p76), L11.Exts (p104), L14 (pp129-134)

N.2.A.4 – Students know how to make predictions. I/L

Science, Technology, and Society (Nature of Science Unifying Concept B)

Technology defines a society or era. It can shape the environment in which people live, and it has increasingly become a larger part of people's lives. While many of technology's effects on society are regarded as desirable, other effects are seen as less desirable. These concepts are shared across subject areas such as science, math, technology, social studies and language arts. The development and use of technology affects society and the environment in which we live, and, at the same time, society influences the development of technology and its impact on culture.

N.2.B -Students understand that many people contribute to the field of science.

N.2.B.1 -Students know science engages men and women of all ages and backgrounds. E/S

Weather -TG: L11-12 (pp101-122)

N.2.B.2 -Students know that, in science, it is helpful to work in a team and share findings with others. E/L

Weather -TG: L01-L17 (pp3-150)

PHYSICAL SCIENCE

Matter (Physical Science Unifying Concept A)

Matter has various states with unique properties that can be used as a basis for organization. The relationship between the properties of matter and its structure is an essential component of study in the physical sciences. The understanding of matter and its properties leads to practical applications, such as the capability to liberate elements from ore, create new drugs, manipulate the structure of genes and synthesize polymers

P.2.A -Students understand that matter has observable properties.

P.2.A.3 -Students know matter can be categorized by observable properties, such as color, shape, and size. E/S

Weather -TG: L03 (pp25-32), L14 (pp129-134)

P.2.A.5 – Students will use the five senses to investigate the natural world. I/L

Forces and Motion (Physical Science Unifying Concept B)

The laws of motion are used to describe the effects of forces on the movement of objects.

P.2.B -Students understand that position and motion of objects can be described.

P.2.B.4 -Students know things fall to the ground unless something holds them up. (i.e. sink or float). E/S

GEMS® Sifting Through Science

LIFE SCIENCE

Heredity (Life Science Unifying Concept A)

Heredity is the genetic passing of a set of instructions from generation to generation. These instructions are encoded as DNA and may manifest themselves as characteristics. Some characteristics are inherited, and some result from interactions with the environment.

L.2.A -Students understand that offspring resemble their parents.

L.2.A.1 -Students know animals have offspring that are similar to their parents. E/S

GEMS® Eggs, Eggs Everywhere

L.2.A.2 -Students know differences exist among individuals of the same kind of animal. E/S

Structure of Life (Life Science Unifying Concept B)

All living things are composted of cells. Cells range from very simple to very complex and have structures which perform functions for the organism. Cells and structures can be damaged or fail because of intrinsic failures or disease.

L.2.B -Students understand that living things have identifiable characteristics.

L.2.B.1 Students know humans and other animals use their senses to know their world. E/S

Organisms and Their Environment (Life Science Unifying Concept C) A variety of ecosystems and communities exist on Earth. Ecosystems are dynamic interactions of organisms and their environment. Ecosystems have distinct characteristics and components that allow certain organisms to thrive. Change in one or more components can affect the entire ecosystem.

L.2.C – Students understand that living things live in different places.

L.2.C.2 – Students know a habitat includes food, water, shelter and space. E/S
GEMS® Eggs, Eggs Everywhere

Diversity of Life (Life Science Unifying Concept D) Evidence suggests that living things change over periods of time. These changes can be attributed to genetic and/or environmental influences. This process of change over time is called biological evolution. The diversity of life on Earth is classified using objective characteristics. Scientific classification uses a hierarchy of groups and subgroups based on similarities that reflect evolutionary relationships

L.2.D -Students understand that there are many kinds of living things on Earth.

L.2.D.1 -Students know plants and animals can be sorted by observable characteristics and behaviors. E/S
GEMS® Eggs, Eggs Everywhere

L.2.D.2 -Students know some animals are extinct. E/S

EARTH SCIENCE

Atmospheric Processes and the Water Cycle (Earth and Space Science Unifying Concept A) Earth systems have internal and external sources of energy, both of which create heat. Driven by sunlight and Earth's internal heat, a variety of cycles connect and continually circulate energy and material through the components of the earth systems.

E.2.A – Students understand that changes in weather often involve water changing from one state to another.
E.2.A.3 -Students know weather changes from day to day and seasonally. I/S
Weather -TG: L15 (pp135-140), L17 (pp149-150)

E.2.A.4 -Students know weather can be described by measurable quantities such as temperature. I/L
Weather -TG: App-A (pp151-152), App-B (pp153-167), L03 (pp25-32), L05-7 (pp43-70)
L10 (pp91-100), L15 (pp135-140), L17 (pp149-150)

Earth's Composition and Structure (Earth and Space Science Unifying Concept C) Earth is composed of materials that move through the biogeochemical cycles. Earth’s features are shaped by ongoing and dynamic processes. These processes can be constructive or destructive and occur over geologic time scales.

E.2.C -Students understand that Earth materials include rocks, soils, and water.

E.2.C.1 -Students know Earth is composed of different kinds of materials (e.g., soils, and water) E/S

Carolina™ Curriculum correlation to Washoe County School District Science Grade Level Units of Study

First Grade - NATURE OF SCIENCE

Scientific Inquiry (Nature of Science Unifying Concept A)

Scientific inquiry is the process by which humans systematically examine the natural world. Scientific inquiry is a human endeavor and involves observation, reasoning, insight, energy, skill, and creativity. Scientific inquiry is used to formulate and test explanations of nature through observation, experiments, and theoretical or mathematical models. Scientific explanations and evidence are constantly reviewed and examined by others. Questioning, response to criticism and open communication are integral to the process of science.

N.2.A -Students understand that science is an active process of systematically examining the natural world.

N.2.A.1 – Students know how to make observations and give descriptions using words, numbers and drawings. E/S

Organisms TG: L01-L17 (pp3-182)
Solids and Liquids TG: L01.Exts (pp7-8), L02.Exts (pp15-16), L04.Exts (p34), L05.Exts (pp43-45) L06.Exts (pp51-52), L07.Exts (pp59-60), L08.Exts (pp66-67), L09.Exts (p73), L10.Exts (p85), L11 Exts (p92), L12.Exts (p98), L13.Exts (pp104-105), L14.Exts (p114), L15.Exts (p124), L16.Exts (pp135-136)
Soils - TG: L01.Exts (p12), L02-15 (pp17-158)

N.2.A.2 – Students know tools can be used safely to gather data and extend the senses. (i.e. magnifying glasses.) I/L

Organisms TG: L02 (pp11-20), S-Sec3 (pp19-24)
Solids and Liquids TG: L05.Exts (pp43-45), L11 (pp87-94), S-Sec3 (pp9-18)

N.2.A.3 -Students know observable patterns can be used to predict future events or sort items. E/S

Organisms TG: L01 (pp3-10), L02.Exts (pp15-16), L03 (pp21-36), L05.Exts (p59), L13-14 (pp135-154) L17 (pp179-182)
Solids and Liquids TG: L01-L17 (pp3-140)

N.2.A.4 – Students know how to make predictions and ask questions. I/L

N.2.A.5 – Students know how to record observations of investigations over time in a notebook or journal (e.g., growth of a plant, changes in weather.) I/L

Science, Technology, and Society (Nature of Science Unifying Concept B)

Technology defines a society or era. It can shape the environment in which people live, and it has increasingly become a larger part of people's lives. While many of technology's effects on society are regarded as desirable, other effects are seen as less desirable. These concepts are shared across subject areas such as science, math, technology, social studies and language arts. The development and use of technology affects society and the environment in which we live, and, at the same time, society influences the development of technology and its impact on culture.

N.2.B -Students understand that many people contribute to the field of science.

N.2.B.1 -Students know science engages men and women of all ages and backgrounds. E/S

N.2.B.2 -Students know that, in science, it is helpful to work in a team and share findings with others. E/L

Organisms TG: L03-16 (pp21-178), L08.Exts (p94)
Solids and Liquids TG: L01-L13 (pp3-128), L17 (pp137-140)
Soils - TG: L01-17 (pp3-172)

PHYSICAL SCIENCE

Matter (Physical Science Unifying Concept A)

Matter has various states with unique properties that can be used as a basis for organization. The relationship between the properties of matter and its structure is an essential component of study in the physical sciences. The understanding of matter and its properties leads to practical applications, such as the capability to liberate elements from ore, create new drugs, manipulate the structure of genes and synthesize polymers

P.2.A -Students understand that matter has observable properties.

P.2.A.1 – Students know matter can exist as solids and liquids. E/S
Solids and Liquids TG: L01-L17 (pp3-140)

P.2.A.3 -Students know matter can be categorized by observable properties, such as color, size, shape and weight. E/S
Organisms TG: L01 (pp3-10), L02.Exts (pp15-16), L05.Exts (p59), L13-14 (pp135-154), L17 (pp179-182)
Solids and Liquids TG: L01-L17 (pp3-140)
Soils - TG: L01 (pp3-16), L03-8 (pp27-86)

P.2.A.4 – Students know different objects are made of many different types of materials. E/S
Solids and Liquids TG: L02-L17 (pp11-140)
Soils - TG: L01-17 (pp3-172)

Forces and Motion (Physical Science Unifying Concept B)
The laws of motion are used to describe the effects of forces on the movement of objects.

P.2.B -Students understand that position and motion of objects can be described.
P.2.B.3 -Students know magnets can be used to make some things move without being touched. E/S
Solids and Liquids TG: L07 (pp55-62)

P.2.B.4 -Students know things fall to the ground unless something holds them up. (i.e., gravity.) E/S

Energy (Physical Science Unifying Concept C)
The total energy of the universe is constant. All events involve the transfer of energy in one form or another. In all energy transfers, the overall effect is that the energy is spread out uniformly

P.2.C -Students know heat, light, and sound can be produced.
P.2.C.1 – Students know sound is produced by vibrating objects. I/L

P.2.C.2 – Students know objects can be described as hot or cold relative to another object. I/L

LIFE SCIENCE

Heredity (Life Science Unifying Concept A)
Heredity is the genetic passing of a set of instructions from generation to generation. These instructions are encoded as DNA and may manifest themselves as characteristics. Some characteristics are inherited, and some result from interactions with the environment.

L.2.A -Students understand that offspring resemble their parents.

L.2.A.1 -Students know plants have offspring that are similar to their parents. E/S

L.2.A.2 -Students know differences exist among individuals of the same kind of plant. E/S
Organisms TG: L12.Exts (p131), L13.Exts (pp139-140)

Structure of Life (Life Science Unifying Concept B)
All living things are composed of cells. Cells range from very simple to very complex and have structures which perform functions for the organism. Cells and structures can be damaged or fail because of intrinsic failures or disease.

L.2.B – Students understand that living things have identifiable characteristics.
L.2.B.1 – Students know humans and other animals use their senses to know their world. E/S
Solids and Liquids TG: L05.Exts (pp43-45)

Organisms and Their Environment (Life Science Unifying Concept C)
A variety of ecosystems and communities exist on Earth. Ecosystems are dynamic interactions of organisms and their environment. Ecosystems have distinct characteristics and components that allow certain organisms to thrive. Change in one or more components can affect the entire ecosystem

L.2.C -Students understand that living things live in different places.
L.2.C.1 – Students know plants and animals need certain resources for energy and growth. E/S
Organisms TG: L03-4 (pp21-52), L06-10 (pp65-118), L13 (pp135-148), L15-16 (pp155-178)
Soils - TG: L09-10 (pp87-108)

L.2.C.2 -Students know a habitat includes food, water, shelter and space. E/S

Organisms TG: L04 (pp36-52), L05.Exts (p59), L11-12 (pp119-134), L15.Exts (pp159-160)

L.2.C.3 – Students know living things are found almost everywhere in the world. E/S

Organisms TG: L12.Exts (p131), L13.Exts (pp139-140)

Soils - TG: L03.Exts (pp32-33), L09.Exts (p92)

Diversity of Life (Life Science Unifying Concept D)

Evidence suggests that living things change over periods of time. These changes can be attributed to genetic and/or environmental influences. This process of change over time is called biological evolution. The diversity of life on Earth is classified using objective characteristics. Scientific classification uses a hierarchy of groups and subgroups based on similarities that reflect evolutionary relationships

L.2.D -Students understand that there are many kinds of living things on Earth.

L.2.D.1 -Students know plants can be sorted by observable characteristics and behaviors. E/S

Organisms TG: L01 (pp3-10), L02.Exts (pp15-16), L05.Exts (p59), L17 (pp179-182)

L.2.D.2 -Students know some plants are extinct. E/S

EARTH SCIENCE

Atmospheric Processes and the Water Cycle (Earth and Space Science Unifying Concept A)

Earth systems have internal and external sources of energy, both of which create heat. Driven by sunlight and Earth's internal heat, a variety of cycles connect and continually circulate energy and material through the components of the earth systems.

E.2.A – Students understand that changes in weather often involve water changing from one state to another.

E.2.A.1 -Students know the Sun is a source of heat and light. E/S

E.2.A.2 -Students know water on Earth can be a liquid (rain) or a solid (snow and ice), and can go back and forth from one form to the other. E/S

Solids and Liquids TG: L10.Exts (p85)

Soils - TG: L11.Exts (p113), L12 (pp115-124)

E.2.A.3 -Students know weather changes from day to day and seasonally. I/S

E.2.A.4 -Students know weather can be described by measurable quantities such as temperature, wind direction, and precipitation. I/L

Earth's Composition and Structure (Earth and Space Science Unifying Concept C)

Earth is composed of materials that move through the biogeochemical cycles. Earth’s features are shaped by ongoing and dynamic processes. These processes can be constructive or destructive and occur over geologic time scales.

E.2.C -Students understand that Earth materials include rocks, soils, and water.

E.2.C.1 -Students know Earth is composed of different kinds of materials (e.g., rocks, soils, and water) E/S

Solids and Liquids TG: L04.Exts (p34)

Soils - TG: L01-17 (pp3-172)

E.2.C.3 – Students know soils have different colors or textures. E/S

Soils - TG: L01-17 (pp3-172)

Carolina™ Curriculum correlation to Washoe County School District Science Grade Level Units of Study

Second Grade - NATURE OF SCIENCE

Scientific Inquiry (Nature of Science Unifying Concept A)

Scientific inquiry is the process by which humans systematically examine the natural world. Scientific inquiry is a human endeavor and involves observation, reasoning, insight, energy, skill, and creativity. Scientific inquiry is used to formulate and test explanations of nature through observation, experiments, and theoretical or mathematical models. Scientific explanations and evidence are constantly reviewed and examined by others. Questioning, response to criticism and open communication are integral to the process of science.

N.2.A -Students understand that science is an active process of systematically examining the natural world.

N.2.A.1 – Students know how to make observations and give descriptions using words, sentences, numbers and drawings. E/S
Changes - TG: L01-17 (pp3-158)
The Life Cycle of Butterflies TG: L01-16 (pp3-96)

N.2.A.2 – Students know tools and instruments can be used safely to gather data and extend the senses. (i.e. thermometers, magnifying glass, rulers, etc.) I/L
Changes - TG: S-Sec3 (pp9-29)
The Life Cycle of Butterflies TG: L01.Exts (p7), L02-9 (pp11-62), TG: L09 (pp53-62) L11.Exts (pp71-73), L12 (pp75-80), L14 (pp85-88), S-Sec3 (pp17-22)

N.2.A.3 -Students know observable patterns can be used to predict future events or sort and compare items. E/S
Changes - TG: L01.Exts (pp10-11), L02-3 (pp21-42), L06.Exts (pp67-69), L09 (pp85-94), L11 (pp103-110), L13.Exts (p123), L14 (pp129-136), L16 (pp147-154)
The Life Cycle of Butterflies TG: L01-2 (pp3-18) 4, L04 (pp23-28), L07.Exts (p43), L08-12 (pp47-80) L14-15 (pp85-94)

N.2.A.4 – Students know how to make predictions, ask questions, and draw conclusions. I/L
Changes - TG: L01-17 (pp3-158)
The Life Cycle of Butterflies TG: L01-16 (pp3-96)

N.2.A.5 – Students will be able to record observations of investigations, over time, in a notebook or journal. I/L
Changes - TG: L01-17 (pp3-158)
The Life Cycle of Butterflies TG: L01-16 (pp3-96)

Science, Technology, and Society (Nature of Science Unifying Concept B)

Technology defines a society or era. It can shape the environment in which people live, and it has increasingly become a larger part of people's lives. While many of technology's effects on society are regarded as desirable, other effects are seen as less desirable. These concepts are shared across subject areas such as science, math, technology, social studies and language arts. The development and use of technology affects society and the environment in which we live, and, at the same time, society influences the development of technology and its impact on culture.

N.2.B -Students understand that many people contribute to the field of science.

N.2.B.1 -Students know science engages men and women of all ages and backgrounds. E/S

N.2.B.2 -Students know that, in science, it is helpful to work in a team and share findings with others. E/L
The Life Cycle of Butterflies TG: L01-16 (pp3-96)

PHYSICAL SCIENCE

Matter (Physical Science Unifying Concept A)

Matter has various states with unique properties that can be used as a basis for organization. The relationship between the properties of matter and its structure is an essential component of study in the physical sciences. The understanding of matter and its properties leads to practical applications, such as the capability to liberate elements from ore, create new drugs, manipulate the structure of genes and synthesize polymers

P.2.A -Students understand that matter has observable properties.

P.2.A.2 -Students know some properties of materials can be changed by heating, freezing, mixing, cutting, or bending. E/S
Changes TG: L01-4 (pp3-52), L12 (pp111-118), L13.Exts (p123), L17 (pp155-158)

P.2.A.3 -Students know matter can be categorized by observable properties, such as color, size, shape and weight. E/S
Changes TG: L01 (pp3-20), L06.Exts (pp67-69), L09.Exts (pp89-90), L11 (pp103-110)
L13.Exts (p123), L14.Exts (p134)
The Life Cycle of Butterflies TG: L02 (pp11-18), L10 (pp63-68), .L14-15 (pp85-94)

P.2.A.4 – Students know different objects are made of many different types of materials. E/S
KIDS DISCOVER: Weight and Balance

Forces and Motion (Physical Science Unifying Concept B)
The laws of motion are used to describe the effects of forces on the movement of objects.

P.2.B -Students understand that position and motion of objects can be described.

P.2.B.1 -Students know the position and motion of an object can be changed by pushing or pulling. E/S
Changes TG: L01.Exts (pp10-11), L17 (pp155-158)

P.2.B.2 -Students know things move in many different ways and at different speeds (e.g., straight line, zigzag, vibration, circular motion, fast/slow). E/S

P.2.B.4 -Students know things fall to the ground unless something holds them up. E/S
KIDS DISCOVER: Weight and Balance

Energy (Physical Science Unifying Concept C)
The total energy of the universe is constant. All events involve the transfer of energy in one form or another. In all energy transfers, the overall effect is that the energy is spread out uniformly

P.2.C -Students know heat, light, and sound can be produced.

P.2.C.1 – Students know sound is produced by vibrating objects. I/L

LIFE SCIENCE

Heredity (Life Science Unifying Concept A)
Heredity is the genetic passing of a set of instructions from generation to generation. These instructions are encoded as DNA and may manifest themselves as characteristics. Some characteristics are inherited, and some result from interactions with the environment.

L.2.A -Students understand that offspring resemble their parents.

L.2.A.1 -Students know animals and plants have offspring that are similar to their parents. E/S

L.2.A.2 -Students know differences exist among individuals of the same kind of plant or animal. E/S

Organisms and Their Environment (Life Science Unifying Concept C)
A variety of ecosystems and communities exist on Earth. Ecosystems are dynamic interactions of organisms and their environment. Ecosystems have distinct characteristics and components that allow certain organisms to thrive. Change in one or more components can affect the entire ecosystem

L.2.C -Students understand that living things live in different places.

L.2.C.1 – Students know plants and animals need certain resources for energy and growth. E/S
The Life Cycle of Butterflies -TG:L02-3 (pp11-22), L05-8 (pp29-52), L10-12 (pp63-80), L15-16 (pp89-96)

L.2.C.2 -Students know a habitat includes food, water, shelter and space and can identify different habitats. E/S
The Life Cycle of Butterflies - TG: L01-3 (pp3-22), L12 (pp75-80)
L.2.C.3 – Students know living things are found almost everywhere in the world. E/S

Diversity of Life (Life Science Unifying Concept D)
Evidence suggests that living things change over periods of time. These changes can be attributed to genetic and/or environmental influences. This process of change over time is called biological evolution. The diversity of life on Earth is classified using objective characteristics. Scientific classification uses a hierarchy of groups and subgroups based on similarities that reflect evolutionary relationships

L.2.D -Students understand that there are many kinds of living things on Earth.

L.2.D.1 -Students know plants or animals can be sorted by observable characteristics and behaviors (i.e., mammals, reptiles, etc.) E/S

The Life Cycle of Butterflies TG: L02 (pp11-18), L10 (pp63-68), L14-15 (pp85-94)

L.2.D.2 -Students know some plants and animals are extinct (or endangered). E/S

EARTH SCIENCE

Atmospheric Processes and the Water Cycle (Earth and Space Science Unifying Concept A)

Earth systems have internal and external sources of energy, both of which create heat. Driven by sunlight and Earth's internal heat, a variety of cycles connect and continually circulate energy and material through the components of the earth systems.

E.2.A – Students understand that changes in weather often involve water changing from one state to another.

E.2.A.1 -Students know the Sun is a source of heat and light. E/S

BBS: Sky Watchers

E.2.A.2 -Students know water on Earth can be a liquid (rain) or a solid (snow and ice), and can go back and forth from one form to the other. E/S

Changes TG: L02-3 (pp21-42), L08 (pp79-84)

E.2.A.3 -Students know weather changes from day to day and seasonally. I/S

E.2.A.4 -Students know weather can be described by measurable quantities such as temperature, wind direction and speed, and precipitation. I/L

Solar System and Universe (Earth and Space Science Unifying Concept B)

The universe is a dynamic system of matter and energy. The universe is extremely large and massive with its components separated by vast distances. Tools of technology will continue to aid in the investigation of the components, origins, processes and age of the universe. Earth is one part in our solar system, which is within the Milky Way galaxy. The Sun is the energy-producing star for our solar system. Most objects in our solar system are in predictable motion, resulting in phenomena such as day/night, year, phases of the moon, tides, and eclipses.

E.2.B – Students understand there are objects in the sky, which display patterns.

E.2.B.1 -Students know objects in the sky display patterns in how they look, where they are located, and how they move. I/S

E.2.B.2 -Students know the Sun rises every day, and the Moon can rise during the day and/or the night. E/S

BBS: Sky Watchers

E.2.B.3 -Students know the Sun and Moon appear to move across the sky. I/L

BBS: Sky Watchers

E.2.B.4 -Students know the Moon appears to change shape over the course of a month. I/L

BBS: Sky Watchers

Earth's Composition and Structure (Earth and Space Science Unifying Concept C)

Earth is composed of materials that move through the biogeochemical cycles. Earth’s features are shaped by ongoing and dynamic processes. These processes can be constructive or destructive and occur over geologic time scales.

E.2.C -Students understand that Earth materials include rocks, soils, and water.

E.2.C.1 -Students know Earth is composed of different kinds of materials (e.g., rocks, soils, and water) E/S

GEMS: On Sandy Shores

E.2.C.2 -Students know rocks come in many sizes and shapes, with various textures and colors. E/S

GEMS: On Sandy Shores

E.2.C.3 – Students know soils have different colors or textures. E/S

GEMS: On Sandy Shores

Carolina™ Curriculum correlation to Washoe County School District Science Grade Level Units of Study

Third Grade - NATURE OF SCIENCE

Scientific Inquiry (Nature of Science Unifying Concept A)

Scientific inquiry is the process by which humans systematically examine the natural world. Scientific inquiry is a human endeavor and involves observation, reasoning, insight, energy, skill, and creativity. Scientific inquiry is used to formulate and test explanations of nature through observation, experiments, and theoretical or mathematical models. Scientific explanations and evidence are constantly reviewed and examined by others. Questioning, response to criticism and open communication are integral to the process of science.

N.5.A -Students understand that science involves asking and answering questions and comparing the answers to what scientists know about the world.

N.5.A.1 -Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method. E/S

Animal Studies TG: L04-12 (pp37-134), L17 (pp169-172)

N.5.A.2 -Students know how to compare the results of their experiments to what scientists already know about the world. I/L

N.5.A.4 -Students know graphic representations of recorded data can be used to make predictions. E/S

Animal Studies TG: L02-6 (pp11-74), L08-9 (pp87-106), L15 (pp157-164)

N.5.A.5 -Students know how to plan and conduct a safe and simple investigation. E/S

Animal Studies TG: L04 (pp37-48), L06 (pp65-74), S-Sec3 (pp16-26)

N.5.A.6 -Students know models are tools for learning about the things they are meant to resemble. I/S

Science, Technology, and Society (Nature of Science Unifying Concept B)

Technology defines a society or era. It can shape the environment in which people live, and it has increasingly become a larger part of people's lives. While many of technology's effects on society are regarded as desirable, other effects are seen as less desirable. These concepts are shared across subject areas such as science, math, technology, social studies and language arts. The development and use of technology affects society and the environment in which we live, and, at the same time, society influences the development of technology and its impact on culture.

N.5.B -Students understand that many people, from all cultures and levels of ability, contribute to the fields of science and technology.

N.5.B.2 -Students know technologies impact society, both positively and negatively. E/S

Animal Studies TG: L03.Exts (p32)

N.5.B.1 -Students know that, throughout history, people of diverse cultures have provided scientific knowledge and technologies. E/S

Animal Studies RB: (pp45-52), RB: (pp56-57), TG: L08.Exts (p94), L12.Exts (p129), L16.Exts (p167)

N.5.B.3 -Students know the benefits of working with a team and sharing findings. E/L

Animal Studies RB: (pp58-61), TG: L17 (pp169-172)

PHYSICAL SCIENCE

Matter (Physical Science Unifying Concept A)

Matter has various states with unique properties that can be used as a basis for organization. The relationship between the properties of matter and its structure is an essential component of study in the physical sciences. The understanding of matter and its properties leads to practical applications, such as the capability to liberate elements from ore, create new drugs, manipulate the structure of genes and synthesize polymers

P.5.A -Students understand properties of objects and materials.

P.5.A.1 -Students know matter exists in different states (i.e., solid, liquid, gas) which have distinct physical properties. E/S

GEMS® Involving Dissolving

P.5.A.2 -Students know heating or cooling can change some common materials, such as water, from one state to another. E/S

GEMS® Involving Dissolving

Forces and Motion (Physical Science Unifying Concept B)

The laws of motion are used to describe the effects of forces on the movement of objects.

P.5.B -Students understand that forces can change the position and motion of an object.

P.5.B.1 -Students know that, when an unbalanced force is applied to an object, the object either speeds up, slows down, or goes in a different direction. E/S

P.5.B.2 -Students know how the strength of a force and mass of an object influence the amount of change in an object's motion. E/S

BBS: Measure It! TG: L03

P.5.B.5 -Students know Earth's gravity pulls any object toward it without touching it. E/S

LIFE SCIENCE

Heredity (Life Science Unifying Concept A)

Heredity is the genetic passing of a set of instructions from generation to generation. These instructions are encoded as DNA and may manifest themselves as characteristics. Some characteristics are inherited, and some result from interactions with the environment.

L.5.A -Students understand that some characteristics are inherited and some are not.

L.5.A.1 -Students know some physical characteristics and behaviors that are inherited in animals and plants. E/S

Animal Studies TG: L11.Exts (p119), L13.Exts (p138)

Structure of Life (Life Science Unifying Concept B)

All living things are composed of cells. Cells range from very simple to very complex and have structures which perform functions for the organism. Cells and structures can be damaged or fail because of intrinsic failures or disease.

L.5.B -Students understand that living things have specialized structures that perform a variety of life functions.

L.5.B.2 -Students know living things have predictable life cycles. E/S

Animal Studies RB: (pp06-08), (pp12-15), (pp35-37), L04.Exts (pp41-42), L07.Exts (pp79-80)

Organisms and Their Environment (Life Science Unifying Concept C)

A variety of ecosystems and communities exist on Earth. Ecosystems are dynamic interactions of organisms and their environment. Ecosystems have distinct characteristics and components that allow certain organisms to thrive. Change in one or more components can affect the entire ecosystem

L.5.C -Students understand that there is a variety of ecosystems on Earth and organisms interact within their ecosystems.

L.5.C.1 -Students know the organization of simple food webs. E/S

L.5.C.2 -Students know organisms interact with each other and with the non-living parts of their ecosystem. E/S

Animal Studies TG: L01-17 (pp3-172)

L.5.C.3 -Students know changes to an environment can be beneficial or detrimental to different organisms. E/S

L.5.C.4 -Students know all organisms, including humans, can cause changes in their environments. E/S

Animal Studies RB: (pp09-11)

L.5.C.5 -Students know plants and animals have adaptations allowing them to survive in specific ecosystems. E/S

Animal Studies RB: (pp06-11), (pp16-19), (pp30-32), (pp40-42), (pp45-49), TG: L01-16 (pp3-168)

Diversity of Life (Life Science Unifying Concept D)

Evidence suggests that living things change over periods of time. These changes can be attributed to genetic and/or environmental influences. This process of change over time is called biological evolution. The diversity of life on Earth is classified using objective characteristics. Scientific classification uses a hierarchy of groups and subgroups based on similarities that reflect evolutionary relationships

L.5.D -Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.

L.5.D.1 -Students know animals and plants can be classified according to their observable characteristics. E/S

Animal Studies RB: (pp26-29), TG: L01-3 (pp3-36), L17 (pp169-172)

EARTH SCIENCE

Atmospheric Processes and the Water Cycle (Earth and Space Science Unifying Concept A)

Earth systems have internal and external sources of energy, both of which create heat. Driven by sunlight and Earth's internal heat, a variety of cycles connect and continually circulate energy and material through the components of the earth systems.

E.5.A -Students understand the water cycle's relationship to weather.

E.5.A.1 -Students know the Sun is the main source of energy for planet Earth. E/S

GEMS® Hot Water and Warm Homes

E.5.A.2 -Students know the processes of the water cycle, including the role of the Sun. E/S

GEMS® Hot Water and Warm Homes

E.5.A.3 -Students know most of Earth’s surface is covered with fresh or salt water. W/L

Solar System and Universe (Earth and Space Science Unifying Concept B)

The universe is a dynamic system of matter and energy. The universe is extremely large and massive with its components separated by vast distances. Tools of technology will continue to aid in the investigation of the components, origins, processes and age of the universe. Earth is one part in our solar system, which is within the Milky Way galaxy. The Sun is the energy-producing star for our solar system. Most objects in our solar system are in predictable motion, resulting in phenomena such as day/night, year, phases of the moon, tides, and eclipses.

E.5.B -Students understand that there are many components in the solar system including Earth.

E.5.B.2 -Students know the solar system includes the Sun, planets, and moons. E/S

Carolina™ Curriculum correlation to Washoe County School District Science Grade Level Units of Study

Fourth Grade - NATURE OF SCIENCE

Scientific Inquiry (Nature of Science Unifying Concept A)

Scientific inquiry is the process by which humans systematically examine the natural world. Scientific inquiry is a human endeavor and involves observation, reasoning, insight, energy, skill, and creativity. Scientific inquiry is used to formulate and test explanations of nature through observation, experiments, and theoretical or mathematical models. Scientific explanations and evidence are constantly reviewed and examined by others. Questioning, response to criticism and open communication are integral to the process of science.

N.5.A -Students understand that science involves asking and answering questions and comparing the answers to what scientists know about the world.

N.5.A.1 -Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method. E/S

Electric Circuits RB: (pp07-10), (pp13-16), (pp60-61), TG: L01-17 (pp3-86)
Land and Water RB: (pp47-49), TG: L01-17 (pp3-186)
Motion and Design RB: (pp23-28), TG: L01 (pp1-14), L03-15 (pp25-144), L17 (pp153-156)

N.5.A.2 -Students know how to compare the results of their experiments to what scientists already know about the world. I/L

Land and Water TG: L06 (pp63-74), L08 (pp85-98), L10-12 (pp109-142), L15-16 (pp163-182)
Motion and Design TG: L04-5 (pp35-56), L07 (pp65-72), L10 (pp91-100), L12 (pp109-116) L15-16 (pp139-152)

N.5.A.4 -Students know graphic representations of recorded data can be used to make predictions. E/S

Electric Circuits TG: L02-16 (pp7-84)
Land and Water TG: L01-2 (pp3-28), L04-5 (pp37-62), L07-9 (pp75-108), L12-13 (pp129-152)
Motion and Design TG: L04 (pp35-46)

N.5.A.5 -Students know how to plan and conduct a safe and simple investigation. E/S

Electric Circuits RB: (pp29-33), (pp42-44), L01-2 (pp3-14), L08 (pp45-48) TG: S-Sec3 (pp16-19)
Land and Water TG: L02 (pp11-28), L04 (pp37-50), L06 (pp63-74), L15 (pp163-172), S-Sec3 (pp13-18)
Motion and Design TG: L02-12 (pp15-116), L15 (pp139-144), L17 (pp153-156), S-Sec3 (pp8-11)

N.5.A.6 -Students know models are tools for learning about the things they are meant to resemble. I/S

Electric Circuits TG: L02-16 (pp7-84)
Land and Water TG: L02-4 (pp11-50), L09 (pp99-108), L10 (pp109-118), L12 (pp129-142)

Science, Technology, and Society (Nature of Science Unifying Concept B)

Technology defines a society or era. It can shape the environment in which people live, and it has increasingly become a larger part of people's lives. While many of technology's effects on society are regarded as desirable, other effects are seen as less desirable. These concepts are shared across subject areas such as science, math, technology, social studies and language arts. The development and use of technology affects society and the environment in which we live, and, at the same time, society influences the development of technology and its impact on culture.

N.5.B -Students understand that many people, from all cultures and levels of ability, contribute to the fields of science and technology.

N.5.B.2 -Students know technologies impact society, both positively and negatively. E/S

Electric Circuits RB: (pp17-21)
Land and Water TG: L13.Exts (pp147-148)
Motion and Design RB: (pp29-36)

N.5.B.1 -Students know that, throughout history, people of diverse cultures have provided scientific knowledge and technologies. E/S

Electric Circuits RB: (pp07-21)
Land and Water RB: (pp07-09), (pp32-38), (pp41-44), (pp57-58)
Motion and Design RB: (pp23-28), (pp41-43)

N.5.B.3 -Students know the benefits of working with a team and sharing findings. E/L

Electric Circuits TG: L01-17 (pp3-86)
Land and Water TG: L01-5 (pp3-62), L08 (pp85-98), L10-14 (pp109-162), L16-17 (pp173-186)
Motion and Design TG: L01-17 (pp1-156)

PHYSICAL SCIENCE

Matter (Physical Science Unifying Concept A)

Matter has various states with unique properties that can be used as a basis for organization. The relationship between the properties of matter and its structure is an essential component of study in the physical sciences. The understanding of matter and its properties leads to practical applications, such as the capability to liberate elements from ore, create new drugs, manipulate the structure of genes and synthesize polymers

P.5.A -Students understand properties of objects and materials.

P.5.A.3 -Students know materials can be classified by their observable physical properties (e.g., magnetism and conductivity). E/S

Forces and Motion (Physical Science Unifying Concept B)

The laws of motion are used to describe the effects of forces on the movement of objects.

P.5.B -Students understand that forces can change the position and motion of an object.

P.5.B.3 -Students know a magnetic force causes certain kinds of objects to attract and repel each other. E/S

P.5.B.4 -Students know electrically charged particles can attract or repel other electrically-charged material (e.g. static electricity). E/S

Energy (Physical Science Unifying Concept C)

The total energy of the universe is constant. All events involve the transfer of energy in one form or another. In all energy transfers, the overall effect is that the energy is spread out uniformly

P.5.C -Students understand that energy exists in different forms.

P.5.C.1 -Students know light can be described in terms of simple properties (e.g., color, brightness, reflection). I/S

P.5.C.2 -Students know the wave characteristics of sound. E/S

P.5.C.3 -Students know heat is often produced as a byproduct when one form of energy is converted to another form (e.g. when machines and living organisms convert stored energy to motion). E/S

Electric Circuits RB: (pp24-28), (pp36-38)
Motion and Design TG: L06-7 (pp57-72), L12 (pp109-116), L15 (pp139-144)

P.5.C.4 -Students know heat can move from one object to another by conduction, and some materials conduct heat better than others. E/S

P.5.C.5 -Students know the organization of a simple electrical circuit (i.e., battery or generator, wire, a complete loop through which the electrical current can pass). I/L

Electric Circuits RB: (pp13-16), (pp29-33), (pp39-44), TG: L01-17 (pp3-86)

LIFE SCIENCE

Heredity (Life Science Unifying Concept A)

Heredity is the genetic passing of a set of instructions from generation to generation. These instructions are encoded as DNA and may manifest themselves as characteristics. Some characteristics are inherited, and some result from interactions with the environment.

L.5.A -Students understand that some characteristics are inherited and some are not.

L.5.A.1 -Students know some physical characteristics and behaviors that are inherited in animals and plants. E/S

EARTH SCIENCE

Atmospheric Processes and the Water Cycle (Earth and Space Science Unifying Concept A)

Earth systems have internal and external sources of energy, both of which create heat. Driven by sunlight and Earth's internal heat, a variety of cycles connect and continually circulate energy and material through the components of the earth systems.

E.5.A -Students understand the water cycle's relationship to weather.

E.5.A.2 -Students know the processes of the water cycle, including the role of the Sun. E/S

Land and Water TG: L01-3 (pp3-36), L06 (pp63-74), L09.Exts (p103), L14.Exts (p156), L15.Exts (p167)

E.5.A.4 -Students know the role of water in many phenomena related to weather (e.g., thunderstorms, snowstorms, flooding, drought). E/S

Land and Water RB: (pp21-25), .TG: L01-3 (pp3-36), L06 (pp63-74)

E.5.A.5 -Students know air is a substance that surrounds us, takes up space, and moves around us as wind. I/S

Earth's Composition and Structure (Earth and Space Science Unifying Concept C)

Earth is composed of materials that move through the biogeochemical cycles. Earth's features are shaped by ongoing and dynamic processes. These processes can be constructive or destructive and occur over geologic time scales.

E.5.C -Students understand that features on the Earth's surface are constantly changed by a combination of slow and rapid processes.

E.5.C.2 -Students know water, wind, and ice constantly change the Earth's land surface by eroding rock and soil in some places and depositing them in other areas. E/S

Land and Water RB: (pp36-38), (pp50-52), TG: L03-16 (pp29-182)

E.5.C.3 -Students know landforms may result from slow processes (e.g. erosion and deposition) and fast processes (e.g. volcanoes, earthquakes, landslides, flood, and human activity). E/S

Land and Water RB: (pp10-14), (pp36-38), TG: L03-10 (pp29-118), L14 (pp153-162), L15 (pp163-172)

E.5.C.4 -Students know rock is composed of different combinations of minerals. E/S

Land and Water TG: L14 (pp153-162)

E.5.C.5 -Students know soil varies from place to place and has both biological and mineral components. E/S

Electric Circuits RB: (pp47-49)
Land and Water TG: L05-6 (pp51-74), L14.Exts (p156)
Motion and Design RB: (pp14-17)

Carolina™ Curriculum correlation to Washoe County School District Science Grade Level Units of Study

Fifth Grade - NATURE OF SCIENCE

Scientific Inquiry (Nature of Science Unifying Concept A)

Scientific inquiry is the process by which humans systematically examine the natural world. Scientific inquiry is a human endeavor and involves observation, reasoning, insight, energy, skill, and creativity. Scientific inquiry is used to formulate and test explanations of nature through observation, experiments, and theoretical or mathematical models. Scientific explanations and evidence are constantly reviewed and examined by others. Questioning, response to criticism and open communication are integral to the process of science.

N.5.A -Students understand that science involves asking and answering questions and comparing the answers to what scientists know about the world.

N.5.A.1 -Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method. E/S

Ecosystems RB: (pp43-44), TG: L02-17 (pp13-171)
Experiment with Plants RB: (pp14-17), (pp36-40), (pp54-56), TG: L01-16 (pp9-128)

N.5.A.2 -Students know how to compare the results of their experiments to what scientists already know about the world. I/L

Ecosystems TG: L13 (pp125-132)
Experiment with Plants RB: (pp57-59), (pp62), TG: L09-10 (pp75-84), L13 (pp101-104), L15 (pp115-122)

N.5.A.4 -Students know graphic representations of recorded data can be used to make predictions. E/S

Ecosystems TG: L02-12 (pp13-124), L14 (pp133-144)
Experiment with Plants TG: L02 (pp21-30), L05 (pp51-56), L08 (pp71-74), L09.Exts (p78)
L10-11 (pp81-90), L11 (pp85-90), L14 (pp105-114)

N.5.A.5 -Students know how to plan and conduct a safe and simple investigation. E/S

Ecosystems RB: (pp43-44), L06 (pp61-74), S-Sec3 (pp34-44)
Experiment with Plants TG: L01-16 (pp9-128)

N.5.A.6 -Students know models are tools for learning about the things they are meant to resemble. I/S

Ecosystems TG: L02-7 (pp13-82)
Experiment with Plants TG: L06.Exts (p62)

Science, Technology, and Society (Nature of Science Unifying Concept B)

Technology defines a society or era. It can shape the environment in which people live, and it has increasingly become a larger part of people's lives. While many of technology's effects on society are regarded as desirable, other effects are seen as less desirable. These concepts are shared across subject areas such as science, math, technology, social studies and language arts. The development and use of technology affects society and the environment in which we live, and, at the same time, society influences the development of technology and its impact on culture.

N.5.B -Students understand that many people, from all cultures and levels of ability, contribute to the fields of science and technology.

N.5.B.2 -Students know technologies impact society, both positively and negatively. E/S

Ecosystems RB: (pp35-37), TG: L08-9 (pp83-98), L12-16 (pp117-168)

N.5.B.1 -Students know that, throughout history, people of diverse cultures have provided scientific knowledge and technologies. E/S

Ecosystems RB: (pp07-10), (pp54-61)
Experiment with Plants RB: (pp11-13), (pp36-46)

N.5.B.3 -Students know the benefits of working with a team and sharing findings. E/L

Ecosystems RB: (pp07-23), (pp26-37), (pp40-51), (pp54-61), TG: L02-10 (pp13-110)
L12-17 (pp117-171)
Experiment with Plants TG: L09-11 (pp75-90), L15.Exts (p117), L16 (pp123-128)

PHYSICAL SCIENCE

Matter (Physical Science Unifying Concept A)

Matter has various states with unique properties that can be used as a basis for organization. The relationship between the properties of matter and its structure is an essential component of study in the physical sciences. The understanding of matter and its properties leads to practical applications, such as the capability to liberate elements from ore, create new drugs, manipulate the structure of genes and synthesize polymers

P.5.A -Students understand properties of objects and materials.

P.5.A.3 -Students know materials can be classified by their observable chemical properties (e.g., density, and solubility). E/S
GEMS® Secret Formulas

P.5.A.4 -Students know that, by combining two or more materials, the properties of that material can be different from the original materials. E/S
Ecosystems TG: L13.Exts (p127)
GEMS® Secret Formulas

P.5.A.5 -Students know the mass of a material remains constant whether it is together, in parts, or in a different state. E/S

P.5.A.6 -Students know materials are composed of parts that are too small to be seen without magnification. E/S
GEMS® Secret Formulas

LIFE SCIENCE

Heredity (Life Science Unifying Concept A)

Heredity is the genetic passing of a set of instructions from generation to generation. These instructions are encoded as DNA and may manifest themselves as characteristics. Some characteristics are inherited, and some result from interactions with the environment.

L.5.A -Students understand that some characteristics are inherited and some are not.

L.5.A.1 -Students know some physical characteristics and behaviors that are inherited in animals and plants. E/S
Experiment with Plants RB: (pp11-13), (pp36-40), (pp44-46), (pp54-56)

L.5.A.2 -Students know reproduction is an essential characteristic for the continuation of every species. E/S
Experiment with Plants RB: (pp07-13), (pp62), TG: L05-9 (pp51-80), L13 (pp101-104)

L.5.A.3 -Students know that, while offspring resemble their parents and each other, they also exhibit differences in characteristics. E/S
Experiment with Plants RB: (pp11-13), (pp36-40), (pp44-46), (pp54-56)

L.5.A.4 -Students know how to observe and describe variations among individuals within the human population. E/S
Experiment with Plants RB: (pp11-13), (pp36-40), (pp44-46), (pp54-56)

L.5.A.5 -Students know some animal behaviors are learned. E/S
Experiment with Plants RB: (pp26-33)

Structure of Life (Life Science Unifying Concept B)

All living things are composed of cells. Cells range from very simple to very complex and have structures which perform functions for the organism. Cells and structures can be damaged or fail because of intrinsic failures or disease.

L.5.B -Students understand that living things have specialized structures that perform a variety of life functions.

L.5.B.1 -Students know plants and animals have structures that enable them to grow, reproduce, and survive. E/S
Experiment with Plants RB: (pp07-13), (pp26-33), TG: L01-2 (pp9-30), L05-7 (pp51-70), L09 (pp75-80) L12-16 (pp91-128)
GEMS® Life Through Time

Organisms and Their Environment (Life Science Unifying Concept C)

A variety of ecosystems and communities exist on Earth. Ecosystems are dynamic interactions of organisms and their environment. Ecosystems have distinct characteristics and components that allow certain organisms to thrive. Change in one or more components can affect the entire ecosystem

L.5.C -Students understand that there is a variety of ecosystems on Earth and organisms interact within their ecosystems.

L.5.C.5 -Students know plants and animals have adaptations allowing them to survive in specific ecosystems. E/S

Ecosystems RB: (pp11-13)
Experiment with Plants RB: (pp07-13), (pp20-21), (pp26-33), TG: L04 (pp39-50)
L07 (pp65-70), L15.Exts (p117)
GEMS® Life Through Time

Diversity of Life (Life Science Unifying Concept D)

Evidence suggests that living things change over periods of time. These changes can be attributed to genetic and/or environmental influences. This process of change over time is called biological evolution. The diversity of life on Earth is classified using objective characteristics. Scientific classification uses a hierarchy of groups and subgroups based on similarities that reflect evolutionary relationships

L.5.D -Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.

L.5.D.2 -Students know fossils are evidence of past life. E/S

GEMS® Life Through Time

L.5.D.3 -Students know differences among individuals within a species give them advantages and/or disadvantages in surviving and reproducing. E/S

GEMS® Life Through Time

EARTH SCIENCE

Atmospheric Processes and the Water Cycle (Earth and Space Science Unifying Concept A)

Earth systems have internal and external sources of energy, both of which create heat. Driven by sunlight and Earth's internal heat, a variety of cycles connect and continually circulate energy and material through the components of the earth systems.

E.5.A -Students understand the water cycle's relationship to weather.

E.5.A.2 -Students know the processes of the water cycle, including the role of the Sun. E/S

Solar System and Universe (Earth and Space Science Unifying Concept B)

The universe is a dynamic system of matter and energy. The universe is extremely large and massive with its components separated by vast distances. Tools of technology will continue to aid in the investigation of the components, origins, processes and age of the universe. Earth is one part in our solar system, which is within the Milky Way galaxy. The Sun is the energy-producing star for our solar system. Most objects in our solar system are in predictable motion, resulting in phenomena such as day/night, year, phases of the moon, tides, and eclipses.

E.5.B -Students understand that there are many components in the solar system including Earth.

E.5.B.1 -Students know there are more stars than anyone can easily count, but they are not scattered evenly, and they are not all the same in brightness or color. W/L

GEMS® Space Science

E.5.B.3 -Students know stars are like the Sun, but they are so far away that they look like points of light. W/L

GEMS® Space Science

E.5.B.4 -Students know there are cyclical patterns of observable objects in the solar system. I/S

GEMS® Space Science

E.5.B.5 -Students know the patterns of stars in the sky stay the same (e.g., the constellations), although they appear to move across the sky nightly, and different stars can be seen in different seasons. (14.5.2) W/S

GEMS® Space Science

Earth's Composition and Structure (Earth and Space Science Unifying Concept C)

Earth is composed of materials that move through the biogeochemical cycles. Earth’s features are shaped by ongoing and dynamic processes. These processes can be constructive or destructive and occur over geologic time scales.

E.5.C -Students understand that features on the Earth's surface are constantly changed by a combination of slow and rapid processes.

E.5.C.1 -Students know fossils are evidence of past life. E/S

GEMS® Life Through Time