

Correlation of the STC PROGRAM™ with

Missouri – The Show Me Standards K-5 Science



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Introduction

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

This document gives a quick visual guide to the alignment of STC® units with the Missouri Show-Me Standards, 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 levels are indicated in the chart below.

For more information about any of these instructional materials, visit www.carolinacurriculum.com

STC PROGRAM™ Units with Recommended Grade Levels

	Grades	Life Science	Earth Science	Physical Science	Technology
STC®	K		<i>Weather</i> (W)		
	1	<i>Organisms</i> (O)		<i>Solids and Liquids</i> (SL)	<i>Balancing and Weighing</i> (BW)
	2	<i>The Life Cycle of Butterflies</i> (LCB)	<i>Soils</i> (S) <i>Rocks and Minerals</i> (RM)		
	3	<i>Plant Growth and Development</i> (PGD)		<i>Changes</i> (C)	<i>Sound</i> (So)
	4		<i>Ecosystems</i> (E)	<i>Electric Circuits</i> (EC)	<i>Motion and Design</i> (MD)
	5		<i>Land and Water</i> (LW)		

Legend

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

- Unit abbreviations = noted in parentheses in the chart above
- TG = STC® Teacher’s Guide
- S-Sec3 = Section 3 (containing a section on safety) in the Teacher’s Guide
- Sec4 = Section 4 (containing the unit lessons) in the Teacher’s Guide
- L01, L02, etc. = Lesson 1, Lesson 2, etc.
- Exts = Extensions (found at the end of most lessons in the Teacher’s Guide)
- RB = STC BOOK™ (a science reading book included in the grades 4 and 5 STC® kits)
- App-A, App-B = Appendix A, Appendix B (found at the end of Section 4 in the Teacher’s Guide)

**Correlation of the STC PROGRAM™ with
Missouri – The Show Me Standards
K-5 Science**

KINDERGARTEN

STANDARD

MO.IN.7.1.

Scientific Inquiry: Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking

CONCEPT: GLE

IN.7.1.A.K.a.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Pose questions about objects, materials, organisms and events in the environment

Grade K

W - TG: L01-L16 (pp3-146)

CONCEPT: GLE

IN.7.1.A.K.b.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Conduct a simple investigation (fair test) to answer a question

Grade K

W - TG: L01-L15 (pp3-140)

CONCEPT: GLE

IN.7.1.B.K.a.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make qualitative observations using the five senses

Grade K

W - TG: L01-I15 (pp3-140)

CONCEPT: GLE

IN.7.1.B.K.b.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make observations using simple tools and equipment (e.g., magnifiers/hand lenses, magnets, equal arm balances, thermometers)

Grade K

W - TG: L01-I15 (pp3-140)

CONCEPT: GLE

IN.7.1.B.K.c.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Measure length and mass using non-standard units

Grade K

CONCEPT: GLE

IN.7.1.B.K.d.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Compare amounts/measurements

Grade K

CM - TG: L01-I05 (pp3-42)

W - TG: L07 (pp63-70)

W - TG: L12 (pp113-122)

W - TG: L15.Exts (p137)

CONCEPT: GLE

IN.7.1.C.K.a.

Evidence is used to formulate explanations: Use observations as support for reasonable explanations

Grade K

W - TG: L01-I15 (pp3-140)

CONCEPT: GLE

IN.7.1.C.K.b.

Evidence is used to formulate explanations: Use observations to describe relationships and patterns and to make predictions to be tested

Grade K

W - TG: L01 (pp3-10)

W - TG: L05.Exts (pp47-48)

W - TG: L08.Exts (p76)

W - TG: L11.Exts (p104)

W - TG: L15-17 (pp135-150)

CONCEPT: GLE

IN.7.1.D.K.a.

Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings): Compare explanations with prior knowledge

Grade K

W - TG: L12.Exts (pp116-117)

W - TG: L15 (pp135-140)

CONCEPT: GLE

IN.7.1.E.K.a.

The nature of science relies upon communication of results and justification of explanations:

Communicate observations using words, pictures, and numbers

Grade K

W - TG: L01-I13 (pp3-128)

W - TG: L15-17 (pp135-150)

STANDARD

MO.ST.8.3.

Impact of Science, Technology and Human Activity: Science and technology affect, and are affected by, society

CONCEPT: GLE

ST.8.3.A.K.a.

People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done: Identify a question that was asked, or could be asked, or a problem that needed to be solved when given a brief scenario (fiction or nonfiction of individuals solving everyday problems or learning through discovery)

Grade K

W - TG: L11 (pp101-112)

W - TG: L12 (pp113-122)

CONCEPT: GLE

ST.8.3.A.K.b.

People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done: Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member (Assess Locally)

Grade K

W - TG: L01-I16 (pp3-148)

GRADE 1

STANDARD

MO.ME.1.1.

Properties and Principles of Matter and Energy: Changes in properties and states of matter provide evidence of the atomic theory of matter

CONCEPT: GLE

ME.1.1.A.1.b.

Objects, and the materials they are made of, have properties that can be used to describe and classify them: Measure and compare the mass of objects (more/less)

Grade 1

BW - TG: L17 (pp137-138)

SL - TG: L01 (pp3-10)

CONCEPT: GLE

ME.1.1.A.1.c.

Objects, and the materials they are made of, have properties that can be used to describe and classify them: Order objects according to mass

Grade 1

BW - TG: L17 (pp137-138)

SL - TG: L01 (pp3-10)

STANDARD

MO.ME.1.2.

Properties and Principles of Matter and Energy: Energy has a source, can be transferred, and can be transformed into various forms but is conserved between and within systems

CONCEPT: GLE

ME.1.2.A.1.a.

Forms of energy have a source, a means of transfer (work and heat), and a receiver: Identify the source of energy that causes an increase in the temperature of an object (e.g., Sun, stove, flame, light bulb)

Grade 1

SL - TG: L13.Exts (pp104-105)

CONCEPT: GLE

ME.1.2.A.1.b.

Forms of energy have a source, a means of transfer (work and heat), and a receiver: Compare the temperature of hot and cold objects using a simple thermometer

Grade 1

SL - TG: L13.Exts (pp104-105)

CONCEPT: GLE

ME.1.2.A.1.c.

Forms of energy have a source, a means of transfer (work and heat), and a receiver: Describe the change in temperature of an object as warmer or cooler

Grade 1

SL - TG: L13.Exts (pp104-105)

STANDARD

MO.FM.2.1.

Properties and Principles of Force and Motion: The motion of an object is described by its change in position relative to another object or point

CONCEPT: GLE

FM.2.1.A.1.b.

The motion of an object is described as a change in position, direction, and speed relative to another object (frame of reference): Describe an object's motion as straight, circular, vibrational (back and forth), zigzag, stopping, starting, or falling

Grade 1

SL - TG: L04 (pp29-40)

CONCEPT: GLE

FM.2.1.A.1.c.

The motion of an object is described as a change in position, direction, and speed relative to another object (frame of reference): Compare the speeds (faster vs. slower) of two moving objects

Grade 1

SL - TG: L03.Exts (pp22-23)

STANDARD

MO.FM.2.2.

Properties and Principles of Force and Motion: Forces affect motion

CONCEPT: GLE

FM.2.2.A.1.a.

Forces are classified as either contact (pushes, pulls, friction, buoyancy) or non-contact forces (gravity, magnetism), that can be described in terms of direction and magnitude: Identify the force (i.e., push or pull) required to do work (move an object)

Grade 1

SL - TG: L04 (pp29-40)

SL - TG: L06 (pp47-54)

SL - TG: L07.Exts (pp59-60)

SL - TG: L09 (pp69-80)

SL - TG: L11 (pp87-94)

SL - TG: L14.Exts (p114)

SL - TG: L15 (pp121-130)

STANDARD

MO.LO.3.1.

Characteristics and Interactions of Living Organisms: There is a fundamental unity underlying the diversity of all living things

CONCEPT: GLE

LO.3.1.A.1.a.

Organisms have basic needs for survival: Identify the basic needs of most animals (i.e., air, water, food, shelter)

Grade 1

O - TG: L07-L10 (pp75-118)

O - TG: L15-L16 (pp155-178)

CONCEPT: GLE

LO.3.1.A.1.b.

Organisms have basic needs for survival: Identify the basic needs of most plants (i.e., air, water, light)

Grade 1

O - TG: L03 (pp21-36)

O - TG: L04 (pp36-52)

O - TG: L06 (pp65-74)

O - TG: L13 (pp135-148)

O - TG: L15 (pp155-168)

O - TG: L16 (pp169-178)

CONCEPT: GLE

LO.3.1.A.1.c.

Organisms have basic needs for survival: Predict and investigate the growth of plants when growing conditions are altered (e.g., dark vs. light, water vs. no water)

Grade 1

O - TG: L03 (pp21-36)

O - TG: L06 (pp65-74)

O - TG: L11 (pp119-126)

O - TG: L12 (pp127-134)

O - TG: L16.Exts (pp172-173)

CONCEPT: GLE

LO.3.1.D.1.b.

Plants and animals have different structures that serve similar functions necessary for the survival of the organism: Identify and compare the physical structures of a variety of animals (e.g., sensory organs, beaks, appendages, body covering) (Do NOT assess terms: sensory organs, appendages)

Grade 1

O - TG: L07-L10 (pp75-118)

O - TG: L14 (pp149-154)

O - TG: L15 (pp155-168)

O - TG: L17 (pp179-182)

CONCEPT: GLE

LO.3.1.D.1.c.

Plants and animals have different structures that serve similar functions necessary for the survival of the organism: Identify the relationships between the physical structures of plants and the function of those structures (e.g., absorption of water, absorption of light energy, support, reproduction)

Grade 1

O - TG: L13 (pp135-148)

O - TG: L15 (pp155-168)

O - TG: L17 (pp179-182)

CONCEPT: GLE

LO.3.1.D.1.d.

Plants and animals have different structures that serve similar functions necessary for the survival of the organism: Identify the relationships between the physical structures of animals and the function of those structures (e.g., taking in water, support, movement, obtaining food, reproduction)

Grade 1

O - TG: L07-L10 (pp75-118)

O - TG: L14 (pp149-154)

O - TG: L15 (pp155-168)

O - TG: L17 (pp179-182)

CONCEPT: GLE

LO.3.1.E.1.a.

Biological classifications are based on how organisms are related: Distinguish between plants and animals based on observable structures and behaviors

Grade 1

O - TG: L04-6 (pp36-74)

O - TG: L12.Exts (p131)

O - TG: L13-15 (pp135-160)

STANDARD

MO.EC.4.1.

Changes in Ecosystems and Interactions of Organisms with their Environments: Organisms are interdependent with one another and with their environment

CONCEPT: GLE

EC.4.1.A.1.a.

All populations living together within a community interact with one another and with their environment in order to survive and maintain a balanced ecosystem: Identify ways man depends on plants and animals for food, clothing, and shelter

Grade 1

O - TG: L11 (pp119-126)

O - TG: L12 (pp127-134)

O - TG: L14.Exts (pp152-153)

O - TG: L16 (pp169-178)

STANDARD

MO.ES.5.3.

Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere):
Human activity is dependent upon and affects Earth's resources and systems

CONCEPT: GLE

ES.5.3.A.1.a.

Earth's materials are limited natural resources affected by human activity: Observe and describe ways water, both as a solid and liquid, is used in every day activities at different times of the year (e.g., bathe, drink, make ice cubes, build snowmen, cook, swim)

Grade 1

SL - TG: L10.Exts (p85)

STANDARD

MO.IN.7.1.

Scientific Inquiry: Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking

CONCEPT: GLE

IN.7.1.A.1.a.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Pose questions about objects, materials, organisms, and events in the environment

Grade 1

BW - TG: L17 (pp137-138)

O - TG: L01-L17 (pp3-182)

SL - TG: L01-L16 (pp3-136)

CONCEPT: GLE

IN.7.1.A.1.b.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Plan and conduct a simple investigation (fair test) to answer a question

Grade 1

BW - TG: L01.Exts (p6)

O - TG: L01-L17 (pp3-182)

SL - TG: L01-L16 (pp3-136)

CONCEPT: GLE

IN.7.1.B.1.a.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make qualitative observations using the five senses

Grade 1

BW - TG: L01.Exts (p6)

O - TG: L01.Exts (p6)

O - TG: L02-L16 (pp11-178)

SL - TG: L01-L16 (pp3-136)

CONCEPT: GLE

IN.7.1.B.1.b.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make observations using simple tools and equipment (e.g., magnifiers/hand lenses, magnets, equal arm balances, thermometers)

Grade 1

BW - TG: L01.Exts (p6)

O - TG: L02-L16 (pp11-178)

SL - TG: L01-L16 (pp3-136)

CONCEPT: GLE

IN.7.1.B.1.c.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Measure length, mass, and temperature using standard and non-standard units

Grade 1

- BW - TG: L01.Exts (p6)
- O - TG: L01.Exts (p6)
- O - TG: L02-L14 (pp11-154)
- O - TG: L15.Exts (pp159-160)
- O - TG: L16 (pp169-178)
- SL - TG: L01-L16 (pp3-136)

CONCEPT: GLE

IN.7.1.B.1.d.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Compare amounts/measurements

Grade 1

- BW - TG: L07.Exts (p58)

CONCEPT: GLE

IN.7.1.C.1.a.

Evidence is used to formulate explanations: Use observations as support for reasonable explanations

Grade 1

- BW - TG: L01.Exts (p6)
- O - TG: L01.Exts (p6)
- O - TG: L02-L16 (pp11-178)
- SL - TG: L01-L16 (pp3-13)

CONCEPT: GLE

IN.7.1.C.1.b.

Evidence is used to formulate explanations: Use observations to describe relationships and patterns and to make predictions to be tested

Grade 1

- BW - TG: L01.Exts (p6)
- O - TG: L01-L17 (pp3-182)
- SL - TG: L01-L17 (pp3-10)
- SL - TG: L02.Exts (pp15-140)

CONCEPT: GLE

IN.7.1.E.1.a.

The nature of science relies upon communication of results and justification of explanations: Communicate simple procedures and results of investigations and explanations through: oral presentations; drawings and maps; data tables; graphs (bar, pictograph); writings

Grade 1

- BW - TG: L01.Exts (p6)
- O - TG: L01-L17 (pp3-182)
- SL - TG: L01 (pp3-10)
- SL - TG: L03-L06 (pp19-54)
- SL - TG: L10.Exts (p85)
- SL - TG: L12 (pp95-100)
- SL - TG: L16 (pp131-136)
- SL - TG: L17 (pp137-140)

STANDARD

MO.ST.8.1.

Impact of Science, Technology and Human Activity: The nature of technology can advance, and is advanced by, science as it seeks to apply scientific knowledge in ways that meet human needs

CONCEPT: GLE

ST.8.1.B.1.a.

Advances in technology often result in improved data collection and an increase in scientific information: Describe how tools have helped scientists make better observations (e.g., magnifiers, balances, thermometers)

Grade 1

BW - TG: L02 (pp9-14)

SL - TG: L11 (pp87-94)

STANDARD

MO.ST.8.3.

Impact of Science, Technology and Human Activity: Science and technology affect, and are affected by, society

CONCEPT: GLE

ST.8.3.A.1.a.

People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done: Identify a question that was asked, or could be asked, or a problem that needed to be solved when given a brief scenario (fiction or nonfiction of individuals solving everyday problems or learning through discovery)

Grade 1

BW - TG: L01 (pp3-8)

O - TG: L01-L17 (pp3-182)

SL - TG: L01-L16 (pp3-136)

CONCEPT: GLE

ST.8.3.A.1.b.

People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done: Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member (Assess Locally)

Grade 1

BW - TG: L01 (pp3-8)

O - TG: L02-L16 (pp11-178)

SL - TG: L01-L16 (pp3-136)

GRADE 2

STANDARD

MO.ME.1.1.

Properties and Principles of Matter and Energy: Changes in properties and states of matter provide evidence of the atomic theory of matter

CONCEPT: GLE

ME.1.1.A.2.a.

Objects, and the materials they are made of, have properties that can be used to describe and classify them: Describe and compare the physical properties of objects by using simple tools (i.e., thermometer, magnifier, centimeter ruler, balance, magnet)

Grade 2

LCB - TG: L14 (pp85-88)

RM - TG: L16 (pp113-126)

S - TG: L15 (pp149-158)

CONCEPT: GLE

ME.1.1.B.2.a.

Properties of mixtures depend upon the concentrations, properties, and interactions of particles: Observe and describe how mixtures are made by combining solids

Grade 2

S - TG: L08 (pp73-86)

CONCEPT: GLE

ME.1.1.B.2.b.

Properties of mixtures depend upon the concentrations, properties, and interactions of particles: Describe ways to separate the components of a mixture by their physical properties (e.g., sorting, magnets, screening)

Grade 2

RM - TG: L02 (pp13-18)

S - TG: L08 (pp73-86)

STANDARD

MO.LO.3.1.

Characteristics and Interactions of Living Organisms: There is a fundamental unity underlying the diversity of all living organisms

CONCEPT: GLE

LO.3.1.B.2.a.

Organisms progress through life cycles unique to different types of organisms: Recognize that animals progress through life cycles of birth, growth and development, reproduction, and death

Grade 2

LCB - TG: App-A (pp97-100)

CONCEPT: GLE

LO.3.1.B.2.b.

Organisms progress through life cycles unique to different types of organisms: Record observations on the life cycle of different animals (e.g., butterfly, frog, chicken)

Grade 2

LCB - TG: App-A (pp97-100)

CONCEPT: GLE

LO.3.1.B.2.c.

Organisms progress through life cycles unique to different types of organisms: Sequence the stages in the life cycle of animals (i.e., butterfly, frog, chicken)

Grade 2

LCB - TG: App-A (pp97-100)

STANDARD

MO.ES.5.1.

Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere): Earth's systems (geosphere, atmosphere, and hydrosphere) have common components and unique structures

CONCEPT: GLE

ES.5.1.A.2.a.

The Earth's crust is composed of various materials, including soil, minerals, and rocks, with characteristic properties: Observe and describe the physical properties (e.g., odor, color, appearance, relative grain size, texture, absorption of water) and different components (i.e., sand, clay, humus) of soils

Grade 2

S - TG: L01 (pp3-16)

STANDARD

MO.IN.7.1.

Scientific Inquiry: Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking

CONCEPT: GLE

IN.7.1.A.2.a.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Pose questions about objects, materials, organisms and events in the environment

Grade 2

RM - TG: L16 (pp113-126)

S - TG: L17 (pp169-172)

CONCEPT: GLE

IN.7.1.A.2.b.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Plan and conduct a simple investigation (fair test) to answer a question

Grade 2

LCB - TG: L16 (pp95-96)

RM - TG: L16 (pp113-126)

S - TG: L16 (pp159-168)

CONCEPT: GLE

IN.7.1.B.2.a.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make qualitative observations using the five senses

Grade 2

LCB - TG: L16 (pp95-96)

RM - TG: L16 (pp113-126)

S - TG: L16 (pp159-168)

CONCEPT: GLE

IN.7.1.B.2.b.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make observations using simple tools and equipment (e.g., magnifiers/hand lenses, magnets, equal arm balances, thermometers)

Grade 2

LCB - TG: L16 (pp95-96)

RM - TG: L16 (pp113-126)

SL - TG: L01.Exts (pp7-8)

S - TG: L16 (pp159-168)

CONCEPT: GLE

IN.7.1.B.2.c.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Measure length, mass, and temperature using standard and non-standard units

Grade 2

LCB - TG: L16 (pp95-96)

RM - TG: L16 (pp113-126)

S - TG: L16 (pp159-168)

CONCEPT: GLE

IN.7.1.C.2.a.

Evidence is used to formulate explanations: Use observations as support for reasonable explanations

Grade 2

LCB - TG: L16 (pp95-96)

RM - TG: L17 (pp127-128)

S - TG: L16 (pp159-168)

CONCEPT: GLE

IN.7.1.C.2.b.

Evidence is used to formulate explanations: Use observations to describe relationships and patterns and to make predictions to be tested

Grade 2

LCB - TG: L16 (pp95-96)

RM - TG: L16 (pp113-126)

S - TG: L15 (pp149-158)

CONCEPT: GLE

IN.7.1.D.2.a.

Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings): Compare explanations with prior knowledge

Grade 2

LCB - TG: L16 (pp95-96)

CONCEPT: GLE

IN.7.1.E.2.a.

The nature of science relies upon communication of results and justification of explanations: Communicate simple procedures and results of investigations and explanations through: oral presentations; drawings and maps; data tables; graphs (bar, pictograph); writings

Grade 2

LCB - TG: L16 (pp95-96)

RM - TG: L17 (pp127-128)

S - TG: L17 (pp169-172)

STANDARD

MO.ST.8.1.

Impact of Science, Technology and Human Activity: The nature of technology can advance, and is advanced by, science as it seeks to apply scientific knowledge in ways that meet human needs

CONCEPT: GLE

ST.8.1.B.2.a.

Advances in technology often result in improved data collection and an increase in scientific information: Describe how tools have helped scientists make better observations, measurements, or equipment for investigations (e.g., magnifiers, balances, stethoscopes, thermometers)

Grade 2

RM - TG: L01.Exts (p9)

GRADE 3

STANDARD

MO.ME.1.1.

Properties and Principles of Matter and Energy: Changes in properties and states of matter provide evidence of the atomic theory of matter

CONCEPT: GLE

ME.1.1.D.3.a.

Physical changes in the state of matter that result from thermal changes can be explained by the Kinetic Theory of Matter: Compare the observable physical properties of solids, liquids, or gases (air) (i.e., visible vs. invisible, changes in shape, changes in the amount of space occupied)

Grade 3

C - TG: L11 (pp103-110)

CONCEPT: GLE

ME.1.1.D.3.c.

Physical changes in the state of matter that result from thermal changes can be explained by the Kinetic Theory of Matter: Recognize water evaporates (liquid water changes into a gas as it moves into the air)

Grade 3

C - TG: L02.Exts (pp26-27)

CONCEPT: GLE

Physical changes in the state of matter that result from thermal changes can be explained by the Kinetic Theory of Matter: Measure and compare the temperature of water when it exists as a solid to its temperature when it exists as a liquid

Grade 3

C - TG: L02.Exts (pp26-27)

CONCEPT: GLE

ME.1.1.D.3.e

Physical changes in the state of matter that result from thermal changes can be explained by the Kinetic Theory of Matter: Investigate and recognize water can change from a liquid to a solid (freeze), and back again to a liquid (melt), as the result of temperature changes

Grade 3

C - TG: L02.Exts (pp26-27)

CONCEPT: GLE

ME.1.1.D.3.f.

Physical changes in the state of matter that result from thermal changes can be explained by the Kinetic Theory of Matter: Describe the changes in the physical properties of water (i.e., shape, volume) when frozen or melted

Grade 3

C - TG: L02.Exts (pp26-27)

CONCEPT: GLE

ME.1.1.D.3.g.

Physical changes in the state of matter that result from thermal changes can be explained by the Kinetic Theory of Matter: Predict and investigate the effect of heat energy (i.e., change in temperature, melting, evaporation) on objects and materials

Grade 3

C - TG: L02-4 (pp21-52)

C - TG: L12 (pp111-118)

C - TG: L13.Exts (p123)

C - TG: L17 (pp155-158)

STANDARD

MO.ME.1.2.

Properties and Principles of Matter and Energy: Energy has a source, can be transferred, and can be transformed into various forms but is conserved between and within systems

CONCEPT: GLE

ME.1.2.A.3.a.

Forms of energy have a source, a means of transfer (work and heat), and a receiver: Identify sources of thermal energy (e.g., Sun, stove, fire, body) that can cause solids to change to liquids, and liquids to change to gas

Grade 3

C - TG: L03 (pp31-42)

C - TG: L06 (pp63-70)

C - TG: L08.Exts (p82)

C - TG: L09 (pp85-94)

C - TG: L13.Exts (p123)

C - TG: L17 (pp155-158)

CONCEPT: GLE

ME.1.2.C.3.a.

Electromagnetic energy from the Sun (solar radiation) is a major source of energy on Earth: Recognize the Sun is the primary source of light and food energy on Earth

Grade 3

PGD - TG: L01 (pp3-8)

STANDARD

MO.LO.3.1.

Characteristics and Interactions of Living Organisms: There is a fundamental unity underlying the diversity of all living organisms

CONCEPT: GLE

LO.3.1.A.3.a.

Organisms have basic needs for survival: Describe the basic needs of most plants (i.e., air, water, light, nutrients, temperature)

Grade 3

PGD - TG: L03 (pp13-24)

PGD - TG: L04 (pp25-28)

PGD - TG: L16.Exts (pp96-97)

CONCEPT: GLE

LO.3.1.B.3.a.

Organisms progress through life cycles unique to different types of organisms: Recognize plants progress through life cycles of seed germination, growth and development, reproduction, and death

Grade 3

PGD - TG: L01-L07 (pp3-42)

PGD - TG: L10-12 (pp55-70)

PGD - TG: L14.Exts (pp86-87)

PGD - TG: L15-17 (pp89-100)

CONCEPT: GLE

LO.3.1.B.3.b.

Organisms progress through life cycles unique to different types of organisms: Sequence and describe the stages in the life cycle of a flowering plant

Grade 3

PGD - TG: L10 (pp55-60)

PGD - TG: L12 (pp67-70)

PGD - TG: L15 (pp89-94)

PGD - TG: L16 (pp95-98)

CONCEPT: GLE

LO.3.1.D.3.a.

Plants and animals have different structures that serve similar functions necessary for the survival of the organism: Identify the major organs (roots, stems, flowers, leaves) and their functions in vascular plants (e.g., absorption, transport, reproduction) (Do NOT assess the term vascular)

Grade 3

PGD - TG: L02 (pp9-12)

PGD - TG: L04 (pp25-28)

PGD - TG: L05 (pp29-34)

PGD - TG: L10 (pp55-60)

PGD - TG: L13 (pp71-78)

STANDARD

MO.LO.3.2.

Characteristics and Interactions of Living Organisms: Living organisms carry out life processes in order to survive

CONCEPT: GLE

LO.3.2.C.3.a.

Complex multicellular organisms have systems that interact to carry out life processes through physical and chemical means: Illustrate and trace the path of water and nutrients as they move through the transport system of a plant

Grade 3

PGD - TG: L12 (pp67-70)

STANDARD

MO.LO.3.3.

Characteristic and Interactions of Living Organisms: There is a genetic basis for the transfer of biological characteristics from one generation to the next through reproductive processes

CONCEPT: GLE

LO.3.3.D.3.a.

There is heritable variation within every species of organism: Identify and relate the similarities and differences between plants and their offspring (i.e., seedlings)

Grade 3

PGD - TG: L10 (pp55-60)

PGD - TG: L12 (pp67-70)

PGD - TG: L15 (pp89-94)

PGD - TG: L16 (pp95-98)

STANDARD

MO.EC.4.2.

Changes in Ecosystems and Interactions of Organisms with their Environments: Matter and energy flow through an ecosystem

CONCEPT: GLE

EC.4.2.A.3.a.

As energy flows through the ecosystem, all organisms capture a portion of that energy and transform it to a form they can use: Identify sunlight as the primary source of energy plants use to produce their own food

Grade 3

PGD - TG: L01 (pp3-8)

CONCEPT: GLE

EC.4.2.A.3.d.

As energy flows through the ecosystem, all organisms capture a portion of that energy and transform it to a form they can use: Predict the possible effects of removing an organism from a food chain

Grade 3

PGD - TG: L11 (pp61-66)

PGD - TG: L14.Exts (pp86-87)

STANDARD

MO.ES.5.1.

Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere):
Earth's systems (geosphere, atmosphere, and hydrosphere) have common components and unique structures

CONCEPT: GLE

ES.5.1.C.3.a.

The atmosphere (air) is composed of a mixture of gases, including water vapor, and minute particles:
Recognize liquid water can change into a gas (vapor) in the air

Grade 3

C - TG: L02 (pp21-30)

C - TG: L03 (pp31-42)

C - TG: L08 (pp79-84)

STANDARD

MO.IN.7.1.

Scientific Inquiry: Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking

CONCEPT: GLE

IN.7.1.A.3.a.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation:
Pose questions about objects, materials, organisms, and events in the environment

Grade 3

C - TG: L01-L17 (pp3-158)

PGD - TG: L02-L17 (pp9-100)

So - TG: L01-L17 (pp11-118)

CONCEPT: GLE

IN.7.1.A.3.b.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation:
Plan and conduct a fair test to answer a question

Grade 3

C - TG: L01-L17 (pp3-158)

PGD - TG: L01-L16 (pp3-98)

So - TG: L01-L17 (pp11-118)

CONCEPT: GLE

IN.7.1.B.3.a.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make qualitative observations using the five senses

C - TG: L01-L17 (pp3-158)

PGD - TG: L01-L16 (pp3-98)

So - TG: L01-L17 (pp11-118)

CONCEPT: GLE

IN.7.1.B.3.b.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make observations using simple tools and equipment (e.g., hand lenses, magnets, thermometers, metric rulers, balances, graduated cylinders)

Grade 3

C - TG: L01-L17 (pp3-158)

PGD - TG: L01-L16 (pp3-98)

So - TG: L01-L17 (pp11-118)

CONCEPT: GLE

IN.7.1.C.3.a.

Evidence is used to formulate explanations: Use quantitative and qualitative data as support for reasonable explanations

Grade 3

C - TG: L01-L17 (pp3-158)

PGD - TG: L01.Exts (p6)

PGD - TG: L01-L17 (pp3-100)

So - TG: L01-L17 (pp11-118)

CONCEPT: GLE

IN.7.1.C.3.b.

Evidence is used to formulate explanations: Use data as support for observed patterns and relationships, and to make predictions to be tested

Grade 3

C - TG: L01-L17(pp3-158)

PGD - TG: L01-L17 (pp3-100)

So - TG: L01-L17 (pp11-118)

CONCEPT: GLE

IN.7.1.D.3.a.

Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings): Evaluate the reasonableness of an explanation

Grade 3

PGD - TG: L13.Exts (p78)

CONCEPT: GLE

IN.7.1.E.3.a.

The nature of science relies upon communication of results and justification of explanations: Communicate simple procedures and results of investigations and explanations through: oral presentations; drawings and maps; data tables; graphs (bar, single line, pictograph); writings

Grade 3

C - TG: L02 (pp21-30)

C - TG: L04.Exts (p48)

C - TG: L05-L17 (pp53-158)

PGD - TG: App-A (pp101-103)

PGD - TG: L01-2 (pp3-12)

PGD - TG: L04-5 (pp25-34)

PGD - TG: L07 (pp39-42)

PGD - TG: L09.Exts (p50)

PGD - TG: L12 (pp67-70)

PGD - TG: L15 (pp89-94)

So - TG: L01.Exts (pp7-8)

So - TG: L03-6 (pp23-48)

So - TG: L09 (pp63-66)

So - TG: L11-13 (pp73-90)

So - TG: L15-L17 (pp103-118)

STANDARD

MO.ST.8.3.

Impact of Science, Technology and Human Activity: Science and technology affect, and are affected by, society

CONCEPT: GLE

ST.8.3.A.3.a.

People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done: Identify a question that was asked, or could be asked, or a problem that needed to be solved when given a brief scenario (fiction or nonfiction of people working alone or in groups solving everyday problems or learning through discovery)

Grade 3

C - TG: L01-L17 (pp3-158)

PGD - TG: L02-L17 (pp9-100)

So - TG: L01-L17 (pp11-118)

CONCEPT: GLE

ST.8.3.A.3.b.

People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done: Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member (Assess Locally)

Grade 3

C - TG: L01-L17 (pp3-158)

PGD - TG: L01-L16 (pp3-98)

So - TG: L01-L17 (pp11-118)

GRADE 4

STANDARD

MO.ME.1.1.

Properties and Principles of Matter and Energy: Changes in properties and states of matter provide evidence of the atomic theory of matter

CONCEPT: GLE

ME.1.1.A.4.a.

Objects, and the materials they are made of, have properties that can be used to describe and classify them: Describe and compare the masses of objects to the nearest gram using balances

Grade 4

MD - TG: L04 (pp35-46)

STANDARD

MO.ME.1.2.

Properties and Principles of Matter and Energy: Energy has a source, can be transferred, and can be transformed into various forms but is conserved between and within systems

CONCEPT: GLE

ME.1.2.A.4.a.

Forms of energy have a source, a means of transfer (work and heat), and a receiver: Construct and diagram a complete electric circuit by using a source (e.g., battery), means of transfer (e.g., wires), and receiver (e.g., resistance bulbs, motors, fans)

Grade 4

EC - RB: (pp13-16)

EC - RB: (pp29-44)

EC - TG: L01-L17 (pp3-86)

CONCEPT: GLE

ME.1.2.A.4.b.

Forms of energy have a source, a means of transfer (work and heat), and a receiver: Observe and describe the evidence of energy transfer in a closed series circuit (e.g., lit bulb, moving motor, fan)

Grade 4

EC - RB: (pp13-16)

EC - RB: (pp29-33)

EC - RB: (pp39-44)

EC - TG: L01-L17 (pp3-86)

CONCEPT: GLE

ME.1.2.A.4.c.

Forms of energy have a source, a means of transfer (work and heat), and a receiver: Classify materials as conductors or insulators of electricity when placed within a circuit (e.g., wood, pencil lead, plastic, glass, aluminum foil, lemon juice, air, water)

Grade 4

EC - RB: (pp13-21)

EC - RB: (pp29-33)

EC - RB: (pp39-44)

EC - TG: L01-L17 (pp3-86)

CONCEPT: GLE

ME.1.2.F.4.a.

Energy can change from one form to another within systems, but the total amount remains the same: Identify the evidence of energy transformations (temperature change, light, sound, motion, and magnetic effects) that occur in electrical circuits

Grade 4

EC - RB: (pp13-16)

EC - RB: (pp24-33)

EC - RB: (pp36-44)

EC - TG: L01-L17 (pp3-86)

MD - TG: L06-7 (pp57-72)

MD - TG: L12 (pp109-116)

MD - TG: L15 (pp139-144)

STANDARD

MO.FM.2.1.

Properties and Principles of Force and Motion: The motion of an object is described by its change in position relative to another object or point

CONCEPT: GLE

FM.2.1.A.4.a.

The motion of an object is described as a change in position, direction, and speed relative to another object (frame of reference): Classify different types of motion (straight line, curved, back and forth)

Grade 4

MD - TG: L03-5-L5 (pp25-56)

MD - TG: L07.Exts (pp68-69)

MD - TG: L08-13 (pp73-124)

MD - TG: L15 (pp139-144)

MD - TG: L17 (pp153-156)

CONCEPT: GLE

FM.2.1.A.4.b.

The motion of an object is described as a change in position, direction, and speed relative to another object (frame of reference): Describe an object's motion in terms of distance and time

Grade 4

MD - TG: L03-L5 (pp25-56)

MD - TG: L07-L13 (pp65-124)

MD - TG: L15-L17 (pp139-156)

STANDARD

MO.FM.2.2.

Properties and Principles of Force and Motion: Forces affect motion

CONCEPT: GLE

FM.2.2.A.4.a.

Forces are classified as either contact forces (pushes, pulls, friction, buoyancy) or noncontact forces (gravity, magnetism), that can be described in terms of direction and magnitude: Identify the forces acting on the motion of objects traveling in a straight line

Grade 4

MD - RB: (pp23-28)

MD - TG: L03-L5 (pp25-56)

MD - TG: L07.Exts (pp68-69)

MD - TG: L08-L13 (pp73-124)

MD - TG: L15 (pp139-144)

MD - TG: L17 (pp153-156)

CONCEPT: GLE

FM.2.2.A.4.b.

Forces are classified as either contact forces (pushes, pulls, friction, buoyancy) or noncontact forces (gravity, magnetism), that can be described in terms of direction and magnitude: Recognize friction as a force that slows down or stops a moving object that is touching another object or surface

Grade 4

MD - RB: (pp23-28)

MD - TG: L07.Exts (pp68-69)

MD - TG: L08 (pp73-80)

MD - TG: L10-L13 (pp91-124)

MD - TG: L15 (pp139-144)

CONCEPT: GLE

FM.2.2.A.4.c.

Forces are classified as either contact forces (pushes, pulls, friction, buoyancy) or noncontact forces (gravity, magnetism), that can be described in terms of direction and magnitude: Compare the forces (measured by a spring scale in Newtons) required to overcome friction when an object moves over different surfaces (i.e., rough/smooth)

Grade 4

MD - RB: (pp23-28)

MD - TG: L07.Exts (pp68-69)

MD - TG: L08 (pp73-80)

MD - TG: L10-13 (pp91-124)

MD - TG: L15 (pp139-144)

CONCEPT: GLE

FM.2.2.D.4.a.

Newton's Laws of Motion explain the interaction of mass and forces, and are used to predict changes in motion: Recognize that balanced forces do not affect an object's motion

Grade 4

MD - TG: L03-5 (pp25-56)

MD - TG: L07.Exts (pp68-69)

MD - TG: L08-13 (pp73-124)

MD - TG: L15 (pp139-144)

MD - TG: L17 (pp153-156)

CONCEPT: GLE

FM.2.2.D.4.b.

Newton's Laws of Motion explain the interaction of mass and forces, and are used to predict changes in motion: Describe how unbalanced forces acting on an object changes its speed (faster/slower), direction of motion, or both

Grade 4

MD - TG: L03-5 (pp25-56)

MD - TG: L07-13.Exts (pp68-124)

MD - TG: L15 (pp139-144)

MD - TG: L17 (pp153-156)

CONCEPT: GLE

FM.2.2.D.4.c.

Newton's Laws of Motion explain the interaction of mass and forces, and are used to predict changes in motion: Explain how increasing or decreasing the amount of force on an object affects the motion of that object

Grade 4

MD - TG: L03-L5 (pp25-56)

MD - TG: L07.Exts (pp68-69)

MD - TG: L08-L13(pp73-124)

MD - TG: L15 (pp139-144)

MD - TG: L17 (pp153-156)

CONCEPT: GLE

FM.2.2.D.4.d.

Newton's Laws of Motion explain the interaction of mass and forces, and are used to predict changes in motion: Explain how the mass of an object (e.g., cars, marbles, rocks, boulders) affects the force required to move it

Grade 4

MD - TG: L04-5 (pp35-56)

CONCEPT: GLE

FM.2.2.D.4.e.

Newton's Laws of Motion explain the interaction of mass and forces, and are used to predict changes in motion: Predict how the change in speed of an object (i.e., faster/slower/remains the same) is affected by the amount of force applied to an object and the mass of the object

Grade 4

MD - TG: L04-5 (pp35-56)

STANDARD

MO.EC.4.3.

Changes in Ecosystems and Interactions of Organisms with their Environments: Genetic variation sorted by the natural selection process explains evidence of biological evolution

CONCEPT: GLE

EC.4.3.C.4.b.

Natural selection is the process of sorting individuals based on their ability to survive and reproduce within their ecosystem: Identify specialized structures and senses and describe how they help animals survive in their environment (e.g., antennae, body covering, teeth, beaks, whiskers, appendages)

Grade 4

EC - RB: (pp47-49)

MD - RB: (pp14-17)

CONCEPT: GLE

EC.4.3.C.4.d.

Natural selection is the process of sorting individuals based on their ability to survive and reproduce within their ecosystem: Predict which plant or animal will be able to survive in a specific environment based on its special structures or behaviors

Grade 4

EC - RB: (pp47-49)

MD - RB: (pp14-17)

STANDARD

MO.IN.7.1.

Scientific Inquiry: Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking

CONCEPT: GLE

IN.7.1.A.4.c.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Conduct a fair test to answer a question

Grade 4

EC - TG: L01-L17 (pp3-86)

MD - TG: L01 (pp1-14)

MD - TG: L03-L13 (pp25-124)

MD - TG: L15 (pp139-144)

MD - TG: L17 (pp153-156)

CONCEPT: GLE

IN.7.1.B.4.a.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make qualitative observations using the five senses

Grade 4

EC - TG: L01-L17 (pp3-86)

MD - TG: L01-L17 (pp1-156)

CONCEPT: GLE

IN.7.1.B.4.b.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make observations using simple tools and equipment (e.g., hand lenses, magnets, thermometers, metric rulers, balances, graduated cylinders, spring scale)

Grade 4

EC - TG: L01-L17 (pp3-86)

MD - TG: L01-L17 (pp1-156)

CONCEPT: GLE

IN.7.1.C.4.a.

Evidence is used to formulate explanations: Use quantitative and qualitative data as support for reasonable explanations

Grade 4

EC - TG: L01-L17 (pp3-186)

MD - TG: L01-L17 (pp1-156)

CONCEPT: GLE

IN.7.1.C.4.b.

Evidence is used to formulate explanations: Use data as support for observed patterns and relationships, and to make predictions to be tested

Grade 4

EC - TG: L01-L17 (pp3-86)

MD - TG: L01-L15 (pp1-144)

MD - TG: L17 (pp153-156)

CONCEPT: GLE

IN.7.1.D.4.a.

Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings): Evaluate the reasonableness of an explanation

Grade 4

EC - TG: L11.Exts (p63)

EC - TG: L17 (pp85-86)

MD - TG: L05 (pp47-56)

MD - TG: L06 (pp57-64)

MD - TG: L08 (pp73-80)

MD - TG: L13-L16 (pp117-152)

CONCEPT: GLE

IN.7.1.D.4.b.

Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings): Analyze whether evidence supports proposed explanations

Grade 4

EC - TG: L17 (pp85-86)

CONCEPT: GLE

IN.7.1.E.4.a.

The nature of science relies upon communication of results and justification of explanations: Communicate the procedures and results of investigations and explanations through: oral presentations; drawings and maps; data tables; graphs (bar, single line, pictograph); writings

Grade 4

EC - TG: L02-L17 (pp7-86)

MD - TG: L02-4 (pp15-46)

MD - TG: L16 (pp145-152)

STANDARD

MO.ST.8.1.

Impact of Science, Technology and Human Activity: The nature of technology can advance, and is advanced by, science as it seeks to apply scientific knowledge in ways that meet human needs

CONCEPT: GLE

ST.8.1.B.4.a.

Advances in technology often result in improved data collection and an increase in scientific information: Describe how new technologies have helped scientists make better observations and measurements for investigations (e.g., telescopes, magnifiers, balances, microscopes, computers, stethoscopes, thermometers)

Grade 4

EC - RB: (pp17-21)

MD - RB: (pp29-36)

MD - TG: L02 (pp15-24)

STANDARD

MO.ST.8.2.

Impact of Science, Technology and Human Activity: Historical and cultural perspectives of scientific explanations help to improve understanding of the nature of science and how science knowledge and technology evolve over time

CONCEPT: GLE

ST.8.2.A.4.a.

People of different gender and ethnicity have contributed to scientific discoveries and the invention of technological innovations: Research biographical information about various scientists and inventors from different gender and ethnic backgrounds, and describe how their work contributed to science and technology (Assess Locally)

Grade 4

EC - RB: (pp07-21)

EC - RB: (pp50-52)

EC - RB: (pp56-59)

EC - TG: L04.Exts (p24)

MD - RB: (pp07-09)

MD - RB: (pp23-46)

MD - RB: (pp52-57)

STANDARD

MO.ST.8.3.

Impact of Science, Technology and Human Activity: Science and technology affect, and are affected by, society

CONCEPT: GLE

ST.8.3.A.4.b.

People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done: Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member (Assess Locally)

Grade 4

EC - TG: L02.Exts (p13)

EC - TG: L06.Exts (p36)

EC - TG: L16.Exts (p83)

MD - TG: L05 (pp47-56)

GRADE 5

STANDARD

MO.ME.1.1.

Properties and Principles of Matter and Energy: Changes in properties and states of matter provide evidence of the atomic theory of matter

CONCEPT: GLE

ME.1.1.C.5.a.

Properties of matter can be explained in terms of moving particles too small to be seen without tremendous magnification: Recognize how changes in state (i.e., freezing/melting, condensation/evaporation) provide evidence that matter is made of particles too small to be seen

Grade 5

LW - TG: L02.Exts (p19)

STANDARD

MO.FM.2.2.

Properties and Principles of Force and Motion: Forces affect motion

CONCEPT: GLE

FM.2.2.D.5.a.

Newton's Laws of Motion explain the interaction of mass and forces, and are used to predict changes in motion: Describe how friction affects the amount of force needed to do work over different surfaces or through different media

Grade 5

MD - TG: L04 (pp35-46)

STANDARD

MO.ES.5.1.

Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere): Earth's systems (geosphere, atmosphere, and hydrosphere) have common components and unique structures

CONCEPT: GLE

ES.5.1.B.5.a.

The hydrosphere is composed of water (a material with unique properties) and other materials: Classify major bodies of surface water (e.g., rivers, lakes, oceans, glaciers) as fresh or salt water, flowing or stationary, large or small, solid or liquid, surface or groundwater

Grade 5

LW - RB: (pp21-25)

LW - TG: L06.Exts (pp67-68)

CONCEPT: GLE

ES.5.1.B.5.b.

The hydrosphere is composed of water (a material with unique properties) and other materials: Relate the type of water body to the process by which it was formed

Grade 5

LW - RB: (pp21-25)

LW - TG: L02 (pp11-28)

LW - TG: L03 (pp29-36)

LW - TG: L06 (pp63-74)

LW - TG: L09.Exts (p103)

LW - TG: L14.Exts (p156)

LW - TG: L15.Exts (p167)

STANDARD

MO.ES.5.2.

Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere):
Earth's systems (geosphere, atmosphere, and hydrosphere) interact with one another as they undergo change by common processes

CONCEPT: GLE

ES.5.2.E.5.a.

Changes in the form of water as it moves through Earth's systems are described as the water cycle: Describe and trace the path of water as it cycles through the hydrosphere, geosphere, and atmosphere (i.e., the water cycle: evaporation, condensation, precipitation, surface run-off/groundwater flow)

Grade 5

LW - TG: L01-L3 (pp3-36)

LW - TG: L06 (pp63-74)

LW - TG: L09.Exts (p103)

LW - TG: L14.Exts (p156)

LW - TG: L15.Exts (p167)

CONCEPT: GLE

ES.5.2.E.5.b.

Changes in the form of water as it moves through Earth's systems are described as the water cycle: Identify the different forms water can take (e.g., snow, rain, sleet, fog, clouds, dew) as it moves through the water cycle

Grade 5

LW - TG: L02 (pp11-28)

LW - TG: L03 (pp29-36)

LW - TG: L06 (pp63-74)

LW - TG: L09.Exts (p103)

LW - TG: L14.Exts (p156)

LW - TG: L15.Exts (p167)

CONCEPT: GLE

ES.5.2.F.5.a.

Constantly changing properties of the atmosphere occur in patterns which are described as weather: Identify and use appropriate tools (i.e., thermometer, anemometer, wind vane, hygrometer, barometer, rain gauge, satellite images, weather maps) to collect weather data (i.e., temperature, wind speed and direction, relative humidity, air pressure, precipitation, cloud type and cover)

Grade 5

LW - RB: (pp59-61)

STANDARD

MO.ES.5.3.

Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere):
Human activity is dependent upon and affects Earth's resources and systems

CONCEPT: GLE

ES.5.3.A.5.b.

Earth's materials are limited natural resources affected by human activity: Describe how human needs and activities (e.g., irrigation, damming of rivers, waste treatment, sources of drinking water) have affected the quantity and quality of major bodies of fresh water

Grade 5

LW - RB: (pp21-29)

CONCEPT: GLE

ES.5.3.A.5.c.

Earth's materials are limited natural resources affected by human activity: Propose solutions to problems related to water quality and availability that result from human activity

Grade 5

LW - RB: (pp21-29)

LW - RB: (pp36-38)

STANDARD

MO.IN.7.1.

Scientific Inquiry: Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking

CONCEPT: GLE

IN.7.1.A.5.a.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation:

Formulate testable questions and explanations (hypotheses)

Grade 5

LW - TG: L01 (pp3-10)

LW - TG: L04 (pp37-50)

LW - TG: L09 (pp99-108)

LW - TG: L17 (pp182-186)

CONCEPT: GLE

IN.7.1.A.5.b.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation:

Recognize the characteristics of a fair and unbiased test

Grade 5

LW - RB: (pp07-09)

LW - TG: L02 (pp11-28)

LW - TG: L03 (pp29-36)

LW - TG: L09 (pp99-108)

LW - TG: L13 (pp143-152)

LW - TG: L17 (pp182-186)

CONCEPT: GLE

IN.7.1.A.5.c.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation:

Conduct a fair test to answer a question

Grade 5

LW - TG: L01 (pp3-10)

LW - TG: L02 (pp11-28)

LW - TG: L07-L13 (pp75-152)

LW - TG: L16 (pp173-182)

LW - TG: L17 (pp182-186)

CONCEPT: GLE

IN.7.1.A.5.d.

Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation:

Make suggestions for reasonable improvements or extensions of a fair test

Grade 5

LW - RB: (pp41-44)

LW - TG: L12 (pp129-142)

CONCEPT: GLE

IN.7.1.B.5.a.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make qualitative observations using the five senses

Grade 5

LW - RB: (pp07-18)

LW - RB: (pp21-38)

LW - RB: (pp41-61)

LW - TG: L01-L17 (pp3-186)

CONCEPT: GLE

IN.7.1.B.5.b.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations:
Determine the appropriate tools and techniques to collect data

Grade 5

LW - TG: L01 (pp3-62)

LW - TG: L07 (pp75-84)

LW - TG: L09 (pp99-108)

LW - TG: L13 (pp143-162)

LW - TG: L17 (pp182-186)

CONCEPT: GLE

IN.7.1.B.5.c.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Use a variety of tools and equipment to gather data (e.g., hand lenses, magnets, thermometers, metric rulers, balances, graduated cylinders, spring scales)

Grade 5

LW - RB: (pp07-18)

LW - RB: (pp21-38)

LW - RB: (pp41-61)

LW - TG: L01-L17 (pp3-186)

CONCEPT: GLE

IN.7.1.B.5.d.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations:
Measure length to the nearest centimeter, mass to the nearest gram, volume to the nearest milliliter, temperature to the nearest degree Celsius, weight to the nearest Newton

Grade 5

LW - TG: L02 (pp11-28)

LW - TG: L03 (pp29-36)

LW - TG: L05 (pp51-62)

LW - TG: L07 (pp75-84)

LW - TG: L10-L14 (pp109-162)

LW - TG: L16 (pp173-182)

CONCEPT: GLE

IN.7.1.B.5.e.

Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations:
Compare amounts/measurements

Grade 5

LW - TG: L02 (pp11-28)

LW - TG: L03 (pp29-36)

LW - TG: L05 (pp51-62)

LW - TG: L07 (pp75-84)

LW - TG: L10-L14 (pp109-162)

LW - TG: L16 (pp173-182)

CONCEPT: GLE

IN.7.1.C.5.a.

Evidence is used to formulate explanations: Use quantitative and qualitative data as support for reasonable explanations

Grade 5

LW - RB: (pp07-18)

LW - RB: (pp21-38)

LW - RB: (pp41-61)

LW - TG: L01-L17 (pp3-186)

CONCEPT: GLE

IN.7.1.C.5.b.

Evidence is used to formulate explanations: Use data as support for observed patterns and relationships, and to make predictions to be tested

Grade 5

LW - RB: (pp07-18)

LW - RB: (pp21-38)

LW - RB: (pp41-61)

LW - TG: L01-L17 (pp3-186)

CONCEPT: GLE

IN.7.1.D.5.a.

Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings): Evaluate the reasonableness of an explanation

Grade 5

LW - TG: L16 (pp173-182)

CONCEPT: GLE

IN.7.1.D.5.b.

Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings): Analyze whether evidence and scientific principles support proposed explanations

Grade 5

LW - RB: (pp07-09)

LW - TG: L02 (pp11-28)

LW - TG: L03 (pp29-36)

LW - TG: L09 (pp99-108)

LW - TG: L13 (pp143-152)

LW - TG: L17 (pp182-186)

CONCEPT: GLE

IN.7.1.E.5.a.

The nature of science relies upon communication of results and justification of explanations: Communicate the procedures and results of investigations and explanations through: oral presentations; drawings and maps; data tables; graphs (bar, single line, pictograph); writings

Grade 5

LW - TG: L01-L05 (pp3-62)

LW - TG: L07-9 (pp75-108)

LW - TG: L08 (pp85-98)

LW - TG: L09 (pp99-108)

LW - TG: L12 (pp129-142)

LW - TG: L13 (pp143-152)

LW - TG: L16 (pp173-182)

LW - TG: L17 (pp182-186)

STANDARD

MO.ST.8.2.

Impact of Science, Technology and Human Activity: Historical and cultural perspectives of scientific explanations help to improve understanding of the nature of science and how science knowledge and technology evolve over time

CONCEPT: GLE

ST.8.2.A.5.a.

People of different gender and ethnicity have contributed to scientific discoveries and the invention of technological innovations: Research biographical information about various scientists and inventors from different gender and ethnic backgrounds, and describe how their work contributed to science and technology (Assess Locally)

Grade 5

LW - RB: (pp07-09)

LW - RB: (pp32-35)

LW - RB: (pp57-58)

STANDARD

MO.ST.8.3.

Impact of Science, Technology and Human Activity: Science and technology affect, and are affected by, society

CONCEPT: GLE

ST.8.3.A.5.a.

People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done: Identify a question that was asked, or could be asked, or a problem that needed to be solved when given a brief scenario (fiction or nonfiction of people working alone or in groups solving everyday problems or learning through discovery)

Grade 5

LW - TG: L01 (pp3-10)

LW - TG: L17 (pp182-186)