Science Standards

GRADE: K2

Body of Knowledge: COMPUTER SCIENCE - PERSONAL, COMMUNITY, GLOBAL, AND ETHICAL IMPACT (DISCONTINUED AFTER 2024-2025)	
Standard 1: Responsible use of technology and information	
BENCHMARK CODE	**BENCHMARK**
SC.K2.CS-PC.1.1 (Discontinued after 2024-2025)	Demonstrate proper care for electronic devices (e.g., handling devices carefully, logging off or shutting down correctly, and keeping devices away from water/food).
SC.K2.CS-PC.1.2 (Discontinued after 2024-2025)	Describe the attributes of a good digital citizen: one who protects private information, balances time online, reports cyberbullying, and recognizes inappropriate content/contact.
SC.K2.CS-PC.1.3 (Discontinued after 2024-2025)	Identify safe and unsafe examples of online communications.
SC.K2.CS-PC.1.4 (Discontinued after 2024-2025)	Explain that a password helps protect the privacy of information.

Standard 2: The impact of computing resources on local and global society	
BENCHMARK CODE	**BENCHMARK**
SC.K2.CS-PC.2.1 (Discontinued after 2024-2025)	Identify and describe how people use many types of technologies in their daily work and personal lives.
SC.K2.CS-PC.2.2 (Discontinued after 2024-2025)	Communicate about technology using developmentally appropriate terminology.
SC.K2.CS-PC.2.3 (Discontinued after 2024-2025)	Recognize that people use computing technology in the workplace to perform many important tasks and functions.

Standard 4: Security, privacy, information sharing, ownership, licensure and copyright	
BENCHMARK CODE	**BENCHMARK**
SC.K2.CS-PC.4.1 (Discontinued after 2024-2025)	Explain that some information is private and should not be shared online.

Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION AND COLLABORATION (DISCONTINUED AFTER 2024-2025)

Standard 1: Communication and collaboration	
BENCHMARK CODE	**BENCHMARK**
SC.K2.CS-CC.1.1 (Discontinued after 2024-2025)	Identify a variety of digital tools used for communication and collaboration (e.g., online library catalogs and databases).
SC.K2.CS-CC.1.2 (Discontinued after 2024-2025)	Conduct basic keyword searches, and exchange information and feedback with teachers and other students (e.g., e-mail and text messaging).
SC.K2.CS-CC.1.3 (Discontinued after 2024-2025)	Collaborate and cooperate with peers, teachers, and others using technology to solve problems.
SC.K2.CS-CC.1.4 (Discontinued after 2024-2025)	Provide and accept constructive criticism on a collaborative project.

Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION SYSTEMS AND COMPUTING (DISCONTINUED AFTER 2024-2025)

Standard 1: Modeling and simulations	
BENCHMARK CODE	**BENCHMARK**
SC.K2.CS-CS.1.1 (Discontinued after 2024-2025)	Define simulation and identify the concepts illustrated by a simple simulation (e.g., growth, human health, and the butterfly life cycle).
SC.K2.CS-CS.1.2 (Discontinued after 2024-2025)	Describe how models and simulations can be used to solve real-world issues in science and engineering.
SC.K2.CS-CS.1.3 (Discontinued after 2024-2025)	Describe how models represent a real-life system (e.g., globe or map).
SC.K2.CS-CS.1.4 (Discontinued after 2024-2025)	Solve questions individually and collaboratively using models.

Standard 2: Problem solving and algorithms	
BENCHMARK CODE	**BENCHMARK**
SC.K2.CS-CS.2.1 (Discontinued after 2024-2025)	Arrange or sort information into useful order, such as sorting students by birth date, with or without technology.
SC.K2.CS-CS.2.2 (Discontinued after 2024-2025)	Solve age-appropriate problems (e.g., puzzles and logical thinking programs) with or without technology (i.e., computational thinking).
SC.K2.CS-CS.2.3 (Discontinued after 2024-2025)	Solve real life issues in science and engineering using computational thinking.
SC.K2.CS-CS.2.4 (Discontinued after 2024-2025)	Define an algorithm as a sequence of defined steps.
SC.K2.CS-CS.2.5 (Discontinued after 2024-2025)	Create a simple algorithm, individually and collaboratively, without using computers to complete the task (e.g., making a sandwich, getting ready for school).
SC.K2.CS-CS.2.6 (Discontinued after 2024-2025)	Illustrate thoughts, ideas, and stories in a step-by-step manner using writing tools, digital cameras, and drawing tools.

SC.K2.CS-CS.2.7 (Discontinued after 2024-2025)	Develop and present an algorithm using tangible materials.
SC.K2.CS-CS.2.8 (Discontinued after 2024-2025)	Gather and organize information using concept-mapping tools.

Standard 3: Digital tools

BENCHMARK CODE	BENCHMARK
SC.K2.CS-CS.3.1 (Discontinued after 2024-2025)	Create a digital artifact (independently and collaboratively) that clearly expresses thoughts and ideas.
SC.K2.CS-CS.3.2 (Discontinued after 2024-2025)	Create, review, and revise artifacts that include text, images, and audio using digital tools.

Standard 4: Hardware and software

BENCHMARK CODE	BENCHMARK
SC.K2.CS-CS.4.1 (Discontinued after 2024-2025)	Recognize different kinds of computing devices in the classroom and other places (e.g., laptops, tablets, smart phones, desktops, printers).
SC.K2.CS-CS.4.2 (Discontinued after 2024-2025)	Recognize and operate different types of computers, applications and peripherals (e.g., use input/output devices such as a mouse, keyboard, or touch screen; find, navigate, launch a program).
SC.K2.CS-CS.4.3 (Discontinued after 2024-2025)	Explain that a computer program is running when a program or command is executed.

Standard 6: Human â€“ Computer interactions and Artificial Intelligence

BENCHMARK CODE	BENCHMARK
SC.K2.CS-CS.6.1 (Discontinued after 2024-2025)	Identify tasks that are made easier because of computers.

Body of Knowledge: COMPUTER SCIENCE - COMPUTER PRACTICES AND PROGRAMMING

Standard 1: Data analysis

BENCHMARK CODE	BENCHMARK
SC.K2.CS-CP.1.1 (Discontinued after 2024-2025)	Identify different kinds of data (e.g., text, charts, graphs, numbers, pictures, audio, video, and collections of objects).
SC.K2.CS-CP.1.2 (Discontinued after 2024-2025)	Collect and manipulate data using a variety of computing methods (e.g., sorting, totaling, and averaging).
SC.K2.CS-CP.1.3 (Discontinued after 2024-2025)	Propose a solution to a problem or question based on an analysis of the data and critical thinking, individually and collaboratively.
SC.K2.CS-CP.1.4 (Discontinued after 2024-2025)	Create data visualizations (e.g., charts and infographics), individually and collaboratively.

Standard 2: Computer programming basics	
BENCHMARK CODE	**BENCHMARK**
SC.K2.CS-CP.2.1 (Discontinued after 2024-2025)	Define a computer program as a set of commands created by people to do something.
SC.K2.CS-CP.2.2 (Discontinued after 2024-2025)	Perform a simple task (e.g., making a sandwich and brushing teeth) breaking it into small steps.
SC.K2.CS-CP.2.3 (Discontinued after 2024-2025)	Explain that computers only follow the program's instructions.
SC.K2.CS-CP.2.4 (Discontinued after 2024-2025)	Construct a simple program using tools that do not require a textual programming language (e.g. block-based programming language).

Standard 3: Programming applications	
BENCHMARK CODE	**BENCHMARK**
SC.K2.CS-CP.3.1 (Discontinued after 2024-2025)	Create developmentally appropriate multimedia products with support from teachers, family members, or student partners.
SC.K2.CS-CP.3.2 (Discontinued after 2024-2025)	Prepare a simple presentation of digital products and applications.

GRADE: K

Body of Knowledge: LIFE SCIENCE	
Big Idea 14: Organization and Development of Living Organisms A. All plants and animals, including humans, are alike in some ways and different in others. B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce. C. Humans can better understand the natural world through careful observation.	
BENCHMARK CODE	**BENCHMARK**
SC.K.L.14.1	Recognize the five senses and related body parts. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.K.L.14.In.1 Recognize the senses of sight, hearing, and smell and related body parts.
	SC.K.L.14.Su.1 Recognize the senses of sight and hearing and related body parts.
	SC.K.L.14.Pa.1 Recognize and respond to one type of sensory stimuli.
SC.K.L.14.2	Recognize that some books and other media portray animals and plants with characteristics and behaviors they do not have in real life. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)

	SC.K.L.14.In.2 Identify a behavior of an animal or plant in a book or other media that is not real.
	SC.K.L.14.Su.2 Distinguish a real animal and an animal that is not a living thing, such as a toy animal.
	SC.K.L.14.Pa.2 Distinguish between a plant and animal.
SC.K.L.14.3	Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.K.L.14.Pa.2 Distinguish between a plant and animal.
	SC.K.L.14.In.3 Identify differences in characteristics of plants and animals.
	SC.K.L.14.Su.3 Match identical animals and plants.

Body of Knowledge: PHYSICAL SCIENCE

Big Idea 10: Forms of Energy

A. Energy is involved in all physical processes and is a unifying concept in many areas of science.

B. Energy exists in many forms and has the ability to do work or cause a change.

BENCHMARK CODE	BENCHMARK
SC.K.P.10.1	Observe that things that make sound vibrate. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.K.P.10.In.1 Identify objects that create specific sounds.
	SC.K.P.10.Su.1 Match sounds to specific objects.
	SC.K.P.10.Pa.1 Recognize and respond to common sounds.

Big Idea 12: Motion of Objects

A. Motion is a key characteristic of all matter that can be observed, described, and measured.

B. The motion of objects can be changed by forces.

BENCHMARK CODE	BENCHMARK
SC.K.P.12.1	Investigate that things move in different ways, such as fast, slow, etc. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.K.P.12.In.1 Identify ways that things move, such as fast or slow.
	SC.K.P.12.Su.1 Recognize that things move.
	SC.K.P.12.Pa.1 Track objects in motion.

Big Idea 13: Forces and Changes in Motion

A. It takes energy to change the motion of objects.

B. Energy change is understood in terms of forces--pushes or pulls.

C. Some forces act through physical contact, while others act at a distance.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A, B, and C.

Clarification for grades 6-8: The target understanding for students in grades 6-8 should begin to transition the focus to a more specific definition of forces and changes in motion. Net forces create a change in motion. A change in momentum occurs when a net force is applied to an object over a time interval.

Grades 9-12, Standard 12: Motion - A. Motion can be measured and described qualitatively and quantitatively. Net forces create a change in motion. B. Momentum is conserved under well-defined conditions. A change in momentum occurs when a net force is applied to an object over a time interval.

BENCHMARK CODE	BENCHMARK
SC.K.P.13.1	Observe that a push or a pull can change the way an object is moving. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.K.P.13.In.1 Demonstrate pushing or pulling of an object to make it move.
	SC.K.P.13.Su.1 Recognize that pushing or pulling an object makes it move.
	SC.K.P.13.Pa.1 Track the movement of objects that are pushed or pulled.

Big Idea 8: Properties of Matter

A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.

B. Objects and substances can be classified by their physical and chemical properties.

Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.

The concepts of mass and weight are complicated and potentially confusing to elementary students. Hence, the more familiar term of "weight" is recommended for use to stand for both mass and weight in grades K-5. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.

Clarification for grades K-2: The use of the more familiar term "weight" instead of the term "mass" is recommended for grades K-2.

Clarification for grades 3-5: In grade 3, introduce the term *mass* as compared to the term *weight.* In grade 4, investigate the concept of *weight* versus *mass* of objects. In grade 5, discuss why mass (not weight) is used to compare properties of solids, liquids and gases.

BENCHMARK CODE	BENCHMARK
SC.K.P.8.1	Sort objects by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light) and texture. *Content Complexity:* Level 2: Basic Application of Skills & Concepts

Related Access Point(s)
SC.K.P.8.In.1 Sort objects by observable properties, such as size, shape, or color.
SC.K.P.8.Su.1 Match objects by an observable property, such as size or color.
SC.K.P.8.Pa.1 Recognize two common objects that are identical to each other.

Big Idea 9: Changes in Matter

A. Matter can undergo a variety of changes.

B. Matter can be changed physically or chemically.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A and B.

Clarification for Grades 6-8: The target understanding for students in middle grades should begin to transition the focus to: C. When matter changes chemically, a rearrangement of bonds between the atoms occurs. This results in new substances with new properties.

BENCHMARK CODE	BENCHMARK
SC.K.P.9.1	Recognize that the shape of materials such as paper and clay can be changed by cutting, tearing, crumpling, smashing, or rolling. *Content Complexity:* Level 1: Recall

Related Access Point(s)
SC.K.P.9.In.1 Recognize that the shape of objects, such as paper, changes when cut, torn, or crumpled.
SC.K.P.9.Su.1 Recognize that the shape of objects, such as paper, changes when cut or torn.
SC.K.P.9.Pa.1 Recognize a change in an object.

Body of Knowledge: EARTH AND SPACE SCIENCE

Big Idea 5: Earth in Space and Time

Humans continue to explore Earth's place in space. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the Solar System, and Earth. Humankind's need to explore continues to lead to the development of knowledge and understanding of our Solar System.

BENCHMARK CODE	BENCHMARK
SC.K.E.5.1	Explore the Law of Gravity by investigating how objects are pulled toward the ground unless something holds them up.

	Content Complexity: Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.K.E.5.In.1 Identify that objects can fall to the ground unless something stops them.
	SC.K.E.5.Su.1 Recognize that objects fall to the ground.
	SC.K.E.5.Pa.1 Track a falling object.
SC.K.E.5.2	Recognize the repeating pattern of day and night. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.K.E.5.In.2 Identify daily activities in a 24-hour period, such as eating breakfast and going to bed, and associate activities with morning and night.
	SC.K.E.5.Su.2 Identify one common activity that occurs in the day and one that occurs in the night.
	SC.K.E.5.Pa.2 Recognize one common activity that occurs during the day.
SC.K.E.5.3	Recognize that the Sun can only be seen in the daytime. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.K.E.5.In.3 Identify the Sun in the daytime.
	SC.K.E.5.Su.3 Recognize the Sun in the daytime.
	SC.K.E.5.Pa.3 Associate the Sun with daytime.
SC.K.E.5.4	Observe that sometimes the Moon can be seen at night and sometimes during the day. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.K.E.5.In.4 Identify the Moon in the sky at night.
	SC.K.E.5.Su.4 Recognize the Moon in the sky at night.
	SC.K.E.5.Pa.4 Associate the Moon with night.
SC.K.E.5.5	Observe that things can be big and things can be small as seen from Earth. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.K.E.5.In.5 Observe big and small things in the sky.
	SC.K.E.5.Su.5 Recognize the size of items as either big or small.
	SC.K.E.5.Pa.5 Recognize items that are big.
SC.K.E.5.6	Observe that some objects are far away and some are nearby as seen from Earth. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.K.E.5.In.6 Identify an item that is far away and an item that is nearby.
	SC.K.E.5.Su.6 Recognize familiar objects that are far away or nearby.

	SC.K.E.5.Pa.6 Recognize items as nearby.

Body of Knowledge: NATURE OF SCIENCE

Big Idea 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.K.N.1.1	Collaborate with a partner to collect information. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.K.N.1.In.1 Identify a partner to obtain information.
	SC.K.N.1.Su.1 Collect a designated item with a partner.
	SC.K.N.1.Pa.1 Share objects with a partner.
SC.K.N.1.2	Make observations of the natural world and know that they are descriptors collected using the five senses. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.K.N.1.In.2 Identify information about objects and actions in the natural world through observation.
	SC.K.N.1.Su.2 Identify information about objects in the natural world through observation.
	SC.K.N.1.Pa.2 Recognize common objects in the natural world through observation.
SC.K.N.1.3	Keep records as appropriate -- such as pictorial records -- of investigations conducted. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.K.N.1.Pa.2 Recognize common objects in the natural world through observation.
	SC.K.N.1.In.3 Observe, explore, and create a visual representation of real objects.
	SC.K.N.1.Su.3 Observe, explore, and match pictures to real objects.
SC.K.N.1.4	Observe and create a visual representation of an object which includes its major features.

	Content Complexity: Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.K.N.1.Pa.2 Recognize common objects in the natural world through observation.
	SC.K.N.1.In.3 Observe, explore, and create a visual representation of real objects.
	SC.K.N.1.Su.3 Observe, explore, and match pictures to real objects.
SC.K.N.1.5	Recognize that learning can come from careful observation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.K.N.1.In.2 Identify information about objects and actions in the natural world through observation.
	SC.K.N.1.Su.2 Identify information about objects in the natural world through observation.
	SC.K.N.1.Pa.2 Recognize common objects in the natural world through observation.
	SC.K.N.1.Su.3 Observe, explore, and match pictures to real objects.

GRADE: 1

Body of Knowledge: LIFE SCIENCE

Big Idea 14: Organization and Development of Living Organisms

A. All plants and animals, including humans, are alike in some ways and different in others.

B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.

C. Humans can better understand the natural world through careful observation.

BENCHMARK CODE	BENCHMARK
SC.1.L.14.1	Make observations of living things and their environment using the five senses. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.1.L.14.In.1 Use sight, hearing, and smell to make observations.
	SC.1.L.14.Su.1 Use sight and hearing to make observations.
	SC.1.L.14.Pa.1 Recognize and respond to different types of sensory stimuli.
SC.1.L.14.2	Identify the major parts of plants, including stem, roots, leaves, and flowers. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.1.L.14.In.2 Identify the leaf, flower, and stem of a plant.
	SC.1.L.14.Su.2 Recognize the leaf and flower of a plant.
	SC.1.L.14.Pa.2 Recognize that plants have leaves.

SC.1.L.14.3	Differentiate between living and nonliving things. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

Related Access Point(s)
SC.1.L.14.In.3 Identify characteristics of living and nonliving things, including whether they need food or water.
SC.1.L.14.Su.3 Distinguish common living and nonliving things in the environment.
SC.1.L.14.Pa.3 Recognize self and others as living things.

Big Idea 16: Heredity and Reproduction

A. Offspring of plants and animals are similar to, but not exactly like, their parents or each other.

B. Life cycles vary among organisms, but reproduction is a major stage in the life cycle of all organisms.

BENCHMARK CODE	BENCHMARK
SC.1.L.16.1	Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population. *Content Complexity:* Level 1: Recall

Related Access Point(s)
SC.1.L.16.In.1 Match offspring of specific animals to adult animals.
SC.1.L.16.Su.1 Recognize that baby plants and animals have parents.
SC.1.L.16.Pa.1 Recognize oneâ€™s own parents.

Big Idea 17: Interdependence

A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.

B. Both human activities and natural events can have major impacts on the environment.

C. Energy flows from the sun through producers to consumers.

BENCHMARK CODE	BENCHMARK
SC.1.L.17.1	Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space. *Content Complexity:* Level 1: Recall

Related Access Point(s)
SC.1.L.17.In.1 Observe and recognize that plants and animals need water and food.
SC.1.L.17.Su.1 Observe and recognize that plants and animals need water.
SC.1.L.17.Pa.1 Observe and recognize that people need water.

Body of Knowledge: PHYSICAL SCIENCE

Big Idea 12: Motion of Objects

A. Motion is a key characteristic of all matter that can be observed, described, and measured.

B. The motion of objects can be changed by forces.

BENCHMARK CODE	BENCHMARK
SC.1.P.12.1	Demonstrate and describe the various ways that objects can move, such as in a straight line, zigzag, back-and-forth, round-and-round, fast, and slow. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.P.12.In.1 Demonstrate and identify that objects can move in different ways, such as up and down, in a straight line, and back and forth.
	SC.1.P.12.Su.1 Demonstrate that objects can move in different ways, such as up and down.
	SC.1.P.12.Pa.1 Track objects moving up and down.

Big Idea 13: Forces and Changes in Motion

A. It takes energy to change the motion of objects.

B. Energy change is understood in terms of forces--pushes or pulls.

C. Some forces act through physical contact, while others act at a distance.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A, B, and C.

Clarification for grades 6-8: The target understanding for students in grades 6-8 should begin to transition the focus to a more specific definition of forces and changes in motion. Net forces create a change in motion. A change in momentum occurs when a net force is applied to an object over a time interval.

Grades 9-12, Standard 12: Motion - A. Motion can be measured and described qualitatively and quantitatively. Net forces create a change in motion. B. Momentum is conserved under well-defined conditions. A change in momentum occurs when a net force is applied to an object over a time interval.

BENCHMARK CODE	BENCHMARK
SC.1.P.13.1	Demonstrate that the way to change the motion of an object is by applying a push or a pull. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.P.13.In.1 Identify the effect that a push or pull has on an object, such as changing the way an object moves.
	SC.1.P.13.Su.1 Demonstrate and recognize that pushing or pulling of an object makes it move.
	SC.1.P.13.Pa.1 Apply a push to move an object.

Big Idea 8: Properties of Matter

A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.

B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.

The concepts of mass and weight are complicated and potentially confusing to elementary students. Hence, the more familiar term of "weight" is recommended for use to stand for both mass and weight in grades K-5. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.

Clarification for grades K-2: The use of the more familiar term â€˜weightâ€™ instead of the term â€œmassâ€• is recommended for grades K-2.

Clarification for grades 3-5: In grade 3, introduce the term mass as compared to the term weight. In grade 4, investigate the concept of weight versus mass of objects. In grade 5, discuss why mass (not weight) is used to compare properties of solids, liquids and gases.

BENCHMARK CODE	BENCHMARK
SC.1.P.8.1	Sort objects by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light), texture, and whether objects sink or float. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.P.8.In.1 Sort objects by observable properties, such as size, shape, color, or texture.
	SC.1.P.8.Su.1 Sort objects by an observable property, such as size, shape, or color.
	SC.1.P.8.Pa.1 Identify common classroom objects by one observable property, such as size or color.

Body of Knowledge: EARTH AND SPACE SCIENCE

Big Idea 5: Earth in Space and Time

Humans continue to explore Earth's place in space. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the Solar System, and Earth. Humankind's need to explore continues to lead to the development of knowledge and understanding of our Solar System.

BENCHMARK CODE	BENCHMARK
SC.1.E.5.1	Observe and discuss that there are more stars in the sky than anyone can easily count and that they are not scattered evenly in the sky. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.E.5.Su.1 Recognize that there are many stars in the sky.
	SC.1.E.5.Pa.1 Associate stars with the night sky.

SC.1.E.5.2	Explore the Law of Gravity by demonstrating that Earth's gravity pulls any object on or near Earth toward it even though nothing is touching the object. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.E.5.In.2 Observe and recognize that an object will fall when it is dropped.
	SC.1.E.5.Su.2 Indicate the location of an object before and after it falls.
	SC.1.E.5.Pa.2 Track objects that fall to the ground.
SC.1.E.5.3	Investigate how magnifiers make things appear bigger and help people see things they could not see without them. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.E.5.In.3 Identify that magnifiers enlarge the appearance of objects.
	SC.1.E.5.Su.3 Match a magnified item to its original item.
	SC.1.E.5.Pa.3 Recognize a familiar object enlarged by magnification.
SC.1.E.5.4	Identify the beneficial and harmful properties of the Sun. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.E.5.In.4 Recognize positive and harmful effects of sunlight.
	SC.1.E.5.Su.4 Recognize a positive effect and a negative effect of sunlight.
	SC.1.E.5.Pa.4 Recognize effects of sunlight, such as warming and giving light.

Big Idea 6: Earth Structures

Humans continue to explore the composition and structure of the surface of the Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's water and natural resources.

BENCHMARK CODE	BENCHMARK
SC.1.E.6.1	Recognize that water, rocks, soil, and living organisms are found on Earth's surface. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.1.E.6.In.1 Identify rocks, water, and living things in the environment.
	SC.1.E.6.Su.1 Recognize rocks and living things in the environment.
	SC.1.E.6.Pa.1 Recognize living things in the environment.
SC.1.E.6.2	Describe the need for water and how to be safe around water. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.E.6.In.2 Identify reasons people need water and safe practices around water.
	SC.1.E.6.Su.2 Identify reasons people need water.

	SC.1.E.6.Pa.2 Recognize one way people use water.
SC.1.E.6.3	Recognize that some things in the world around us happen fast and some happen slowly. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.1.E.6.In.3 Distinguish between events that happen slowly and those that happen fast.
	SC.1.E.6.Su.3 Distinguish between actions that are fast or slow.
	SC.1.E.6.Pa.3 Recognize an action as fast or slow.

Body of Knowledge: NATURE OF SCIENCE

Big Idea 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.1.N.1.1	Raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.1.N.1.In.1 Request information about the environment.
	SC.1.N.1.Su.1 Ask questions about common objects in the environment.
	SC.1.N.1.Pa.1 Recognize common objects in the environment.
SC.1.N.1.2	Using the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations with others. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.N.1.In.2 Use careful observation to identify objects based on size, shape, color, or texture.
	SC.1.N.1.Su.2 Recognize differences in objects through observation of size, shape, or color

	SC.1.N.1.Pa.2 Recognize common objects as the same.
SC.1.N.1.3	Keep records as appropriate - such as pictorial and written records - of investigations conducted. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.N.1.Pa.1 Recognize common objects in the environment.
	SC.1.N.1.In.3 Draw pictures about investigations conducted.
	SC.1.N.1.Su.3 Contribute to group recordings of observations.
SC.1.N.1.4	Ask "how do you know?" in appropriate situations. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.1.N.1.Su.1 Ask questions about common objects in the environment.
	SC.1.N.1.Pa.1 Recognize common objects in the environment.
	SC.1.N.1.In.4 Ask a question about a science investigation.

GRADE: 2

Body of Knowledge: LIFE SCIENCE

Big Idea 14: Organization and Development of Living Organisms

A. All plants and animals, including humans, are alike in some ways and different in others.

B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.

C. Humans can better understand the natural world through careful observation.

BENCHMARK CODE	BENCHMARK
SC.2.L.14.1	Distinguish human body parts (brain, heart, lungs, stomach, muscles, and skeleton) and their basic functions. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.L.14.In.1 Identify major external body parts, such as hands and legs, and their uses.
	SC.2.L.14.Su.1 Match external body parts, such as a foot, to their uses.
	SC.2.L.14.Pa.1 Recognize one or more external body parts.

Big Idea 16: Heredity and Reproduction

A. Offspring of plants and animals are similar to, but not exactly like, their parents or each other.

B. Life cycles vary among organisms, but reproduction is a major stage in the life cycle of all organisms.

BENCHMARK CODE	BENCHMARK
SC.2.L.16.1	Observe and describe major stages in the life cycles of plants and animals, including beans and butterflies. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.L.16.In.1 Observe and recognize the major stages in the life cycles of plants and animals.
	SC.2.L.16.Su.1 Observe and recognize the sequence of stages in the life cycles of common animals.
	SC.2.L.16.Pa.1 Recognize that offspring can be matched with their parents, such as a human baby with adult humans and a puppy with dogs.

Big Idea 17: Interdependence

A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.

B. Both human activities and natural events can have major impacts on the environment.

C. Energy flows from the sun through producers to consumers.

BENCHMARK CODE	BENCHMARK
SC.2.L.17.1	Compare and contrast the basic needs that all living things, including humans, have for survival. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.L.17.In.1 Identify the basic needs of living things, including water, food, and air.
	SC.2.L.17.Su.1 Recognize that living things have basic needs, including water and food.
	SC.2.L.17.Pa.1 Recognize that animals need water.
SC.2.L.17.2	Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.L.17.In.2 Recognize that many different kinds of living things are found in different habitats.
	SC.2.L.17.Su.2 Recognize that many kinds of living things are found in the environment.
	SC.2.L.17.Pa.2 Recognize common living things in the immediate environment.

Body of Knowledge: PHYSICAL SCIENCE

Big Idea 10: Forms of Energy

A. Energy is involved in all physical processes and is a unifying concept in many areas of science.

B. Energy exists in many forms and has the ability to do work or cause a change.

BENCHMARK CODE	BENCHMARK
SC.2.P.10.1	Discuss that people use electricity or other forms of energy to cook their food, cool or warm their homes, and power their cars. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.2.P.10.In.1 Identify ways people use electricity in their lives.
	SC.2.P.10.Su.1 Recognize a way people use electricity in their lives.
	SC.2.P.10.Pa.1 Activate a device that uses electricity.

Big Idea 13: Forces and Changes in Motion

A. It takes energy to change the motion of objects.

B. Energy change is understood in terms of forces--pushes or pulls.

C. Some forces act through physical contact, while others act at a distance.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A, B, and C.

Clarification for grades 6-8: The target understanding for students in grades 6-8 should begin to transition the focus to a more specific definition of forces and changes in motion. Net forces create a change in motion. A change in momentum occurs when a net force is applied to an object over a time interval.

Grades 9-12, Standard 12: Motion - A. Motion can be measured and described qualitatively and quantitatively. Net forces create a change in motion. B. Momentum is conserved under well-defined conditions. A change in momentum occurs when a net force is applied to an object over a time interval.

BENCHMARK CODE	BENCHMARK
SC.2.P.13.1	Investigate the effect of applying various pushes and pulls on different objects. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.2.P.13.In.1 Observe and identify that pushing or pulling an object can change the direction of movement of the object.
	SC.2.P.13.Su.1 Identify that pushing or pulling an object makes it move.
	SC.2.P.13.Pa.1 Recognize that pushing and pulling an object makes it move.
SC.2.P.13.2	Demonstrate that magnets can be used to make some things move without touching them. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.2.P.13.Pa.1 Recognize that pushing and pulling an object makes it move.

	SC.2.P.13.In.2 Observe and recognize that magnets can move some objects.
	SC.2.P.13.Su.2 Use magnets to cause objects to move.
SC.2.P.13.3	Recognize that objects are pulled toward the ground unless something holds them up. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.2.P.13.Pa.2 Indicate that an object has fallen.
	SC.2.P.13.In.3 Identify and demonstrate that an object will fall to the ground when dropped.
	SC.2.P.13.Su.3 Recognize that an object will fall to the ground when dropped.
SC.2.P.13.4	Demonstrate that the greater the force (push or pull) applied to an object, the greater the change in motion of the object. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.P.13.Pa.1 Recognize that pushing and pulling an object makes it move.
	SC.2.P.13.In.4 Identify that pushing or pulling an object with more force will make the object go faster or farther.
	SC.2.P.13.Su.4 Recognize that pushing or pulling an object with more force will make the object go faster or farther.

Big Idea 8: Properties of Matter

A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.

B. Objects and substances can be classified by their physical and chemical properties.

Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.

The concepts of mass and weight are complicated and potentially confusing to elementary students. Hence, the more familiar term of "weight" is recommended for use to stand for both mass and weight in grades K-5. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.

Clarification for grades K-2: The use of the more familiar term â€˜weightâ€™ instead of the term â€œmassâ€• is recommended for grades K-2.

Clarification for grades 3-5: In grade 3, introduce the term mass as compared to the term weight. In grade 4, investigate the concept of weight versus mass of objects. In grade 5, discuss why mass (not weight) is used to compare properties of solids, liquids and gases.

BENCHMARK CODE	BENCHMARK
SC.2.P.8.1	Observe and measure objects in terms of their properties, including size, shape, color, temperature, weight, texture, sinking or floating in water, and attraction and repulsion of

	magnets. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.2.P.8.In.1 Identify objects by observable properties, such as, size, shape, color,
	SC.2.P.8.Su.1 Identify objects by observable properties, such as size, shape, and color.
	SC.2.P.8.Pa.1 Match objects by one observable property, such as size or color.
SC.2.P.8.2	Identify objects and materials as solid, liquid, or gas. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.2.P.8.In.2 Identify objects and materials as solid or liquid.
	SC.2.P.8.Su.2 Recognize water in solid or liquid states.
	SC.2.P.8.Pa.2 Recognize water as a liquid.
SC.2.P.8.3	Recognize that solids have a definite shape and that liquids and gases take the shape of their container. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.2.P.8.In.3 Recognize that solids have a definite shape and liquids take the shape of their container.
	SC.2.P.8.Su.3 Recognize that solids have a definite shape.
	SC.2.P.8.Pa.3 Recognize different containers that hold liquids.
SC.2.P.8.4	Observe and describe water in its solid, liquid, and gaseous states. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.2.P.8.In.2 Identify objects and materials as solid or liquid.
	SC.2.P.8.Su.2 Recognize water in solid or liquid states.
	SC.2.P.8.Pa.2 Recognize water as a liquid.
SC.2.P.8.5	Measure and compare temperatures taken every day at the same time. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.P.8.In.4 Describe and compare outside daily temperatures as warm or cold.
	SC.2.P.8.Su.4 Identify outside temperatures as warm or cold.
	SC.2.P.8.Pa.4 Recognize common objects or materials as warm or cold.
SC.2.P.8.6	Measure and compare the volume of liquids using containers of various shapes and sizes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.P.8.Pa.3 Recognize different containers that hold liquids.

	SC.2.P.8.In.5 Compare the volume of liquid in a variety of containers.
	SC.2.P.8.Su.5 Recognize different volumes of liquids in identical containers.

Big Idea 9: Changes in Matter

A. Matter can undergo a variety of changes.

B. Matter can be changed physically or chemically.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A and B.

Clarification for Grades 6-8: The target understanding for students in the middle grades should begin to transition the focus to: C. When matter changes chemically, a rearrangement of bonds between the atoms occurs. This results in new substances with new properties.

BENCHMARK CODE	BENCHMARK
SC.2.P.9.1	Investigate that materials can be altered to change some of their properties, but not all materials respond the same way to any one alteration. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.2.P.9.In.1 Explore and identify that observable properties of materials can be changed.
	SC.2.P.9.Su.1 Recognize changes in observable properties of materials.
	SC.2.P.9.Pa.1 Recognize that the appearance of an object or material has changed.

Body of Knowledge: EARTH AND SPACE SCIENCE

Big Idea 6: Earth Structures

Humans continue to explore the composition and structure of the surface of Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earthâ€™s water and natural resources.

BENCHMARK CODE	BENCHMARK
SC.2.E.6.1	Recognize that Earth is made up of rocks. Rocks come in many sizes and shapes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.E.6.In.1 Sort rocks according to size and shape.
	SC.2.E.6.Su.1 Sort rocks according to size.
	SC.2.E.6.Pa.1 Recognize the ground in the environment.
SC.2.E.6.2	Describe how small pieces of rock and dead plant and animal parts can be the basis of soil and explain the process by which soil is formed. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)

	SC.2.E.6.Pa.1 Recognize the ground in the environment.
	SC.2.E.6.In.2 Identify components of soil, such as dead plants and pieces of rock.
	SC.2.E.6.Su.2 Identify small pieces of rock in the soil.
SC.2.E.6.3	Classify soil types based on color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.2.E.6.Pa.2 Distinguish examples of soil from other substances.
	SC.2.E.6.In.3 Recognize soil types based on color (dark or light) and texture (size of particles).
	SC.2.E.6.Su.3 Sort soil samples according to physical properties, such as color (dark or light) or texture (size of particles).

Big Idea 7: Earth Systems and Patterns

Humans continue to explore the interactions among water, air, and land. Air and water are in constant motion that results in changing conditions that can be observed over time.

BENCHMARK CODE	BENCHMARK
SC.2.E.7.1	Compare and describe changing patterns in nature that repeat themselves, such as weather conditions including temperature and precipitation, day to day and season to season. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.E.7.In.1 Identify common weather patterns associated with each season.
	SC.2.E.7.Su.1 Recognize types of weather and match to the weather outdoors.
	SC.2.E.7.Pa.1 Recognize daily outdoor temperature as hot or cold.
SC.2.E.7.2	Investigate by observing and measuring, that the Sun's energy directly and indirectly warms the water, land, and air. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.2.E.7.Pa.1 Recognize daily outdoor temperature as hot or cold.
	SC.2.E.7.In.2 Identify that the Sun heats the outside air and water.
	SC.2.E.7.Su.2 Recognize that items outside are heated by the Sun.
SC.2.E.7.3	Investigate, observe and describe how water left in an open container disappears (evaporates), but water in a closed container does not disappear (evaporate). *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.2.E.7.Pa.2 Distinguish between items that are wet and items that are dry.
	SC.2.E.7.In.3 Recognize that water in an open container will disappear (evaporate).
	SC.2.E.7.Su.3 Recognize that wet things will dry when they are left in the air.

SC.2.E.7.4	Investigate that air is all around us and that moving air is wind. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.2.E.7.Pa.3 Indicate awareness of air moving.
	SC.2.E.7.In.4 Identify effects of wind.
	SC.2.E.7.Su.4 Recognize effects of wind.
SC.2.E.7.5	State the importance of preparing for severe weather, lightning, and other weather related events. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.2.E.7.Pa.4 Recognize where to go to avoid severe weather, such as thunder and lightning.
	SC.2.E.7.In.5 Identify harmful consequences of being outside in severe weather, such as lightning, hurricanes, or tornados.
	SC.2.E.7.Su.5 Recognize reasons for staying inside during severe weather, such as hurricanes and thunderstorms.

Body of Knowledge: NATURE OF SCIENCE

Big Idea 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.2.N.1.1	Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.2.N.1.In.1 Ask questions and make observations about things in the natural world.
	SC.2.N.1.Su.1 Answer yes and no questions and make observations about common objects and actions in the natural world.
	SC.2.N.1.Pa.1 Request a change or help to solve a problem in the environment.

SC.2.N.1.2	Compare the observations made by different groups using the same tools. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.N.1.In.2 Identify information about objects based on observation.
	SC.2.N.1.Su.2 Identify characteristics of objects based on observation.
	SC.2.N.1.Pa.2 Use senses to recognize objects.
SC.2.N.1.3	Ask "how do you know?" in appropriate situations and attempt reasonable answers when asked the same question by others. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.2.N.1.In.1 Ask questions and make observations about things in the natural world.
	SC.2.N.1.Su.1 Answer yes and no questions and make observations about common objects and actions in the natural world.
	SC.2.N.1.Pa.1 Request a change or help to solve a problem in the environment.
SC.2.N.1.4	Explain how particular scientific investigations should yield similar conclusions when repeated. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.2.N.1.In.3 Recognize that the results of a scientific activity should be the same when repeated
	SC.2.N.1.Su.3 Recognize that science activities can be repeated.
	SC.2.N.1.Pa.3 Recognize common objects in different environments.
SC.2.N.1.5	Distinguish between empirical observation (what you see, hear, feel, smell, or taste) and ideas or inferences (what you think). *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.N.1.In.2 Identify information about objects based on observation.
	SC.2.N.1.Su.2 Identify characteristics of objects based on observation.
	SC.2.N.1.Pa.2 Use senses to recognize objects.
SC.2.N.1.6	Explain how scientists alone or in groups are always investigating new ways to solve problems. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.2.N.1.Pa.1 Request a change or help to solve a problem in the environment.
	SC.2.N.1.In.4 Recognize that scientists work to solve problems.
	SC.2.N.1.Su.4 Recognize that people work in science.

Body of Knowledge: COMPUTER SCIENCE - PERSONAL, COMMUNITY, GLOBAL, AND ETHICAL IMPACT (DISCONTINUED AFTER 2024-2025)

Standard 1: Responsible use of technology and information

BENCHMARK CODE	BENCHMARK
SC.35.CS-PC.1.1 (Discontinued after 2024-2025)	Identify appropriate and inappropriate uses of technology when posting to social media, sending e-mail, and browsing the Internet.
SC.35.CS-PC.1.2 (Discontinued after 2024-2025)	Describe responsible uses of modern communication media and devices.
SC.35.CS-PC.1.3 (Discontinued after 2024-2025)	Explain the proper use and operation of security technologies (e.g., passwords, virus protection software, spam filters, pop-up blockers, and cookies).
SC.35.CS-PC.1.4 (Discontinued after 2024-2025)	Define plagiarism and understand the impacts of plagiarized materials.

Standard 2: The impact of computing resources on local and global society

BENCHMARK CODE	BENCHMARK
SC.35.CS-PC.2.1 (Discontinued after 2024-2025)	Explain how computers and computing devices are used to communicate with others on a daily basis.
SC.35.CS-PC.2.2 (Discontinued after 2024-2025)	Describe types of cyberbullying and explain what actions should be taken if students are either victims or witnesses of these behaviors.
SC.35.CS-PC.2.3 (Discontinued after 2024-2025)	Identify the legal and social consequences of cyberbullying/harassment in social media.
SC.35.CS-PC.2.4 (Discontinued after 2024-2025)	Explain how access to technology helps empower individuals and groups (e.g., gives them access to information, the ability to communicate with others around the world, and allows them to buy and sell things).
SC.35.CS-PC.2.5 (Discontinued after 2024-2025)	Identify ways in which people with special needs access and use adaptive technology.
SC.35.CS-PC.2.6 (Discontinued after 2024-2025)	Communicate about technology using appropriate terminology.
SC.35.CS-PC.2.7 (Discontinued after 2024-2025)	Identify and describe how computing knowledge is essential to performing important tasks and functions.

Standard 3: Evaluation of digital information resources

BENCHMARK CODE	BENCHMARK
SC.35.CS-PC.3.1 (Discontinued after 2024-2025)	Identify digital information resources used to answer research questions (e.g., online library catalog, online encyclopedias, databases, and websites).
SC.35.CS-PC.3.2 (Discontinued after 2024-2025)	Gather, organize, and analyze information from digital resources.
SC.35.CS-PC.3.3 (Discontinued after 2024-2025)	Compare digital resources for accuracy, relevancy, and appropriateness.

Standard 4: Security, privacy, information sharing, ownership, licensure and copyright	
BENCHMARK CODE	**BENCHMARK**
SC.35.CS-PC.4.1 (Discontinued after 2024-2025)	Describe the difference between digital artifacts that are open or free and those that are protected by copyright.
SC.35.CS-PC.4.2 (Discontinued after 2024-2025)	Explain fair use for using copyrighted materials (e.g., images, music, video, and text).
SC.35.CS-PC.4.3 (Discontinued after 2024-2025)	Describe the purpose of copyright and the possible consequences for inappropriate use of digital materials that are protected by copyright.
SC.35.CS-PC.4.4 (Discontinued after 2024-2025)	Describe the threats to safe and efficient use of devices (e.g., SPAM, spyware, phishing, and viruses) associated with various forms of technology use (e.g., downloading and executing software programs, following hyperlinks, and opening files).

Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION AND COLLABORATION (DISCONTINUED AFTER 2024-2025)	
Standard 1: Communication and collaboration	
BENCHMARK CODE	**BENCHMARK**
SC.35.CS-CC.1.1 (Discontinued after 2024-2025)	Identify technology tools for individual and collaborative data collection, writing, communication, and publishing activities.
SC.35.CS-CC.1.2 (Discontinued after 2024-2025)	Describe key ideas and details while working individually or collaboratively using digital tools and media-rich resources in a way that informs, persuades, and/or entertains.
SC.35.CS-CC.1.3 (Discontinued after 2024-2025)	Identify ways that technology can foster teamwork, and collaboration can support problem solving and innovation.
SC.35.CS-CC.1.4 (Discontinued after 2024-2025)	Describe how collaborating with others can be beneficial to a digital project.
SC.35.CS-CC.1.5 (Discontinued after 2024-2025)	Explain that providing and receiving feedback from others can improve performance and outcomes for collaborative digital projects.

Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION SYSTEMS AND COMPUTING (DISCONTINUED AFTER 2024-2025)	
Standard 1: Modeling and simulations	
BENCHMARK CODE	**BENCHMARK**
SC.35.CS-CS.1.1 (Discontinued after 2024-2025)	Identify the concepts illustrated by a simulation (e.g., ecosystem, predator/prey, and invasive species).
SC.35.CS-CS.1.2 (Discontinued after 2024-2025)	Describe how models and simulations can be used to solve real-world issues in science and engineering.
SC.35.CS-CS.1.3 (Discontinued after 2024-2025)	Answer a question, individually and collaboratively, using data from a simulation.
SC.35.CS-CS.1.4 (Discontinued after 2024-2025)	Create a simple model of a system (e.g., flower or solar system) and explain what the model shows and does not show.

Standard 2: Problem solving and Algorithms	
BENCHMARK CODE	**BENCHMARK**
SC.35.CS-CS.2.1 (Discontinued after 2024-2025)	Solve age-appropriate problems using information organized using digital graphic organizers (e.g., concept maps and Venn-diagrams).
SC.35.CS-CS.2.2 (Discontinued after 2024-2025)	Describe how computational thinking can be used to solve real life issues in science and engineering.
SC.35.CS-CS.2.3 (Discontinued after 2024-2025)	Explain the process of arranging or sorting information into useful order as well as the purpose for doing so.
SC.35.CS-CS.2.4 (Discontinued after 2024-2025)	Solve real-world problems in science and engineering using computational thinking skills.
SC.35.CS-CS.2.5 (Discontinued after 2024-2025)	Explain that there are several possible algorithms for searching within a dataset (such as finding a specific word in a word list or card in a deck of cards).
SC.35.CS-CS.2.6 (Discontinued after 2024-2025)	Write an algorithm to solve a grade-level appropriate problem (e.g., move a character through a maze, instruct a character to draw a specific shape, have a character start, repeat or end activity as required or upon a specific event), individually or collaboratively.
SC.35.CS-CS.2.7 (Discontinued after 2024-2025)	Identify and correct logical errors in algorithms; written, mapped, live action, or digital.
SC.35.CS-CS.2.8 (Discontinued after 2024-2025)	Systematically test and identify logical errors in algorithms.
SC.35.CS-CS.2.9 (Discontinued after 2024-2025)	Explain how to correct logical errors in algorithms; written, mapped, live action, or digital.

Standard 3: Digital tools	
BENCHMARK CODE	**BENCHMARK**
SC.35.CS-CS.3.1 (Discontinued after 2024-2025)	Manipulate and publish multimedia artifacts using digital tools (local and online).
SC.35.CS-CS.3.2 (Discontinued after 2024-2025)	Create an artifact (independently and collaboratively) that answers a research question clearly communicating thoughts and ideas.

Standard 4: Hardware and software	
BENCHMARK CODE	**BENCHMARK**
SC.35.CS-CS.4.1 (Discontinued after 2024-2025)	Identify the basic components of a computer (e.g., monitor, keyboard, mouse, controller, speakers).
SC.35.CS-CS.4.2 (Discontinued after 2024-2025)	Describe the function and purpose of various input/output devices and peripherals (e.g., monitor, screen, keyboard, controller, speakers).
SC.35.CS-CS.4.3 (Discontinued after 2024-2025)	Compare and contrast hardware and software.
SC.35.CS-CS.4.4 (Discontinued after 2024-2025)	Identify and solve simple hardware and software problems that may occur during everyday use (e.g., power, connections, application window or toolbar).

Standard 6: Human â€“ Computer interactions and Artificial Intelligence

BENCHMARK CODE	BENCHMARK
SC.35.CS-CS.6.1 (Discontinued after 2024-2025)	Describe how hardware applications (e.g., Global Positioning System (GPS) navigation for driving directions, text-to-speech translation, and language translation) can enable everyone to do things they could not do otherwise.
SC.35.CS-CS.6.2 (Discontinued after 2024-2025)	Compare and contrast human and computer performance on similar tasks (e.g., sorting alphabetically or finding a path across a cluttered room) to understand which is best suited to the task.
SC.35.CS-CS.6.3 (Discontinued after 2024-2025)	Explain that computers model intelligent behavior (as found in robotics, speech and language recognition, and computer animation).

Body of Knowledge: COMPUTER SCIENCE - COMPUTER PRACTICES AND PROGRAMMING

Standard 1: Data analysis

BENCHMARK CODE	BENCHMARK
SC.35.CS-CP.1.1 (Discontinued after 2024-2025)	Explain that searches may be enhanced by using Boolean logic (e.g., using “not”, “or”, “and”).
SC.35.CS-CP.1.2 (Discontinued after 2024-2025)	Identify and describe examples of databases from everyday life (e.g., library catalogs, school records, telephone directories, and contact lists).
SC.35.CS-CP.1.3 (Discontinued after 2024-2025)	Identify, research, and collect a data set on a topic, issue, problem, or question using age-appropriate technologies.
SC.35.CS-CP.1.4 (Discontinued after 2024-2025)	Collect, organize, graph, and analyze data to answer a question using a database or spreadsheet.

Standard 2: Computer programming basics

BENCHMARK CODE	BENCHMARK
SC.35.CS-CP.2.1 (Discontinued after 2024-2025)	Perform keyboarding skills for communication and the input of data and information.
SC.35.CS-CP.2.2 (Discontinued after 2024-2025)	Create, test, and modify a program in a graphical environment (e.g., block-based visual programming language), individually and collaboratively.
SC.35.CS-CP.2.3 (Discontinued after 2024-2025)	Create a program using arithmetic operators, conditionals, and repetition in programs.
SC.35.CS-CP.2.4 (Discontinued after 2024-2025)	Explain that programs need known initial conditions (e.g., set initial score to zero in a game, initialize variables, or initial values set by hardware input).
SC.35.CS-CP.2.5 (Discontinued after 2024-2025)	Detect and correct program errors, including those involving arithmetic operators, conditionals, and repetition, using interactive debugging.

Standard 3: Programming applications

BENCHMARK CODE	BENCHMARK

SC.35.CS-CP.3.1 (Discontinued after 2024-2025)	Write, communicate and publish activities using technology tools.
SC.35.CS-CP.3.2 (Discontinued after 2024-2025)	Present digitally created products, either individually and collaboratively, where a topic, concept, or skill is carefully analyzed or thoughtfully explored.

GRADE: 3

Body of Knowledge: LIFE SCIENCE

Big Idea 14: Organization and Development of Living Organisms

A. All plants and animals, including humans, are alike in some ways and different in others.

B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.

C. Humans can better understand the natural world through careful observation.

BENCHMARK CODE	BENCHMARK
SC.3.L.14.1	Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.L.14.In.1 Identify the major parts of a plant, including seed, root, stem, leaf, and flower, and their functions.
	SC.3.L.14.Su.1 Identify the major parts of a plant, such as the root, stem, leaf, and flower.
	SC.3.L.14.Pa.1 Recognize the leaf and flower of a plant.
SC.3.L.14.2	Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.L.14.In.2 Identify behaviors of plants that show they are growing.
	SC.3.L.14.Su.2 Recognize that plants grow toward light and roots grow down in the soil.
	SC.3.L.14.Pa.2 Recognize that plants grow.

Big Idea 15: Diversity and Evolution of Living Organisms

A. Earth is home to a great diversity of living things, but changes in the environment can affect their survival.

B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.

BENCHMARK CODE	BENCHMARK

SC.3.L.15.1	Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.L.15.In.1 Classify animals by a similar physical characteristic, such as fur, feathers, and number of legs.
	SC.3.L.15.Su.1 Sort common animals by observable characteristics.
	SC.3.L.15.Pa.1 Match animals that are the same.
SC.3.L.15.2	Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.L.15.In.2 Classify parts of plants into groups based on physical characteristics, such as classifying leaves by shape.
	SC.3.L.15.Su.2 Sort common plants by observable characteristics.
	SC.3.L.15.Pa.2 Match plants that are the same.

Big Idea 17: Interdependence

A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.

B. Both human activities and natural events can have major impacts on the environment.

C. Energy flows from the sun through producers to consumers.

BENCHMARK CODE	BENCHMARK
SC.3.L.17.1	Describe how animals and plants respond to changing seasons. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.L.17.In.1 Identify changes in the appearance of animals and plants throughout the year.
	SC.3.L.17.Su.1 Recognize that the appearance of some plants in the environment changes throughout the year.
	SC.3.L.17.Pa.1 Recognize clothing worn by humans in different weather (seasons).
SC.3.L.17.2	Recognize that plants use energy from the Sun, air, and water to make their own food. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.3.L.17.In.2 Recognize that most plants make their own food.
	SC.3.L.17.Su.2 Recognize that plants need light to grow.
	SC.3.L.17.Pa.2 Recognize that plants need water.

Body of Knowledge: PHYSICAL SCIENCE

Big Idea 10: Forms of Energy

A. Energy is involved in all physical processes and is a unifying concept in many areas of science.

B. Energy exists in many forms and has the ability to do work or cause a change.

BENCHMARK CODE	BENCHMARK
SC.3.P.10.1	Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.3.P.10.In.1 Recognize forms of energy, such as light, heat, electrical, and energy of motion.
	SC.3.P.10.Su.1 Recognize objects that use electricity (television) and the energy of motion (bowling ball).
	SC.3.P.10.Pa.1 Recognize the change in the motion of an object.
SC.3.P.10.2	Recognize that energy has the ability to cause motion or create change. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.3.P.10.Su.1 Recognize objects that use electricity (television) and the energy of motion (bowling ball).
	SC.3.P.10.Pa.1 Recognize the change in the motion of an object.
	SC.3.P.10.In.2 Recognize examples of the use of energy, such as electrical (radio, freezer) and energy of motion (bowling, wind).
SC.3.P.10.3	Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.P.10.Su.2 Recognize examples of sources of light, such as the Sun or a flashlight.
	SC.3.P.10.Pa.2 Distinguish light and dark.
	SC.3.P.10.In.3 Identify that light may come from different sources, such as the Sun or electric lamp.
SC.3.P.10.4	Demonstrate that light can be reflected, refracted, and absorbed. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.P.10.Su.2 Recognize examples of sources of light, such as the Sun or a flashlight.
	SC.3.P.10.Pa.2 Distinguish light and dark.
	SC.3.P.10.In.3 Identify that light may come from different sources, such as the Sun or electric lamp.

Big Idea 11: Energy Transfer and Transformations

A. Waves involve a transfer of energy without a transfer of matter.

B. Water and sound waves transfer energy through a material.

C. Light waves can travel through a vacuum and through matter.

Clarification for grades 5-8: The target understanding for Big Idea 11: Energy Transfer and Transformations, is the Law of Conservation of Energy: Energy is conserved as it transfers from one object to another and from one form to another.

BENCHMARK CODE	BENCHMARK
SC.3.P.11.1	Investigate, observe, and explain that things that give off light often also give off heat. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.P.11.In.1 Identify that objects that give off light often give off heat.
	SC.3.P.11.Su.1 Recognize objects that give off both heat and light, such as a light bulb.
	SC.3.P.11.Pa.1 Recognize sources of light.
SC.3.P.11.2	Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.P.11.In.2 Observe and identify that heat is produced when objects are rubbed together.
	SC.3.P.11.Su.2 Observe and recognize that rubbing objects together causes heat.
	SC.3.P.11.Pa.2 Recognize sources of heat.

Big Idea 8: Properties of Matter

A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.

B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.

The concepts of mass and weight are complicated and potentially confusing to elementary students. Hence, the more familiar term of "weight" is recommended for use to stand for both mass and weight in grades K-5. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.

Clarification for grades K-2: The use of the more familiar term â€˜weightâ€™ instead of the term â€œmassâ€• is recommended for grades K-2.

Clarification for grades 3-5: In grade 3, introduce the term mass as compared to the term weight. In grade 4, investigate the concept of weight versus mass of objects. In grade 5,

discuss why mass (not weight) is used to compare properties of solids, liquids and gases.

BENCHMARK CODE	BENCHMARK
SC.3.P.8.1	Measure and compare temperatures of various samples of solids and liquids. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.P.8.In.1 Observe and identify the colder/hotter temperature measured on a thermometer.
	SC.3.P.8.Su.1 Recognize that a thermometer measures temperature (cold and hot).
	SC.3.P.8.Pa.1 Recognize the temperature of items, such as food, as cool or warm.
SC.3.P.8.2	Measure and compare the mass and volume of solids and liquids. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.P.8.In.2 Measure the weight of solids or liquids.
	SC.3.P.8.Su.2 Sort solid objects by weight (heavy and light).
	SC.3.P.8.Pa.2 Recognize the larger of two objects.
SC.3.P.8.3	Compare materials and objects according to properties such as size, shape, color, texture, and hardness. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.P.8.In.3 Group objects by two observable properties, such as size and shape or color and texture.
	SC.3.P.8.Su.3 Sort objects by an observable property, such as size, shape, color, and texture.
	SC.3.P.8.Pa.3 Match objects by an observable property, such as size, shape, and color.

Big Idea 9: Changes in Matter

A. Matter can undergo a variety of changes.

B. Matter can be changed physically or chemically.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A and B.

Clarification for Grades 6-8: The target understanding for students in the middle grades should begin to transition the focus to: C. When matter changes chemically, a rearrangement of bonds between the atoms occurs. This results in new substances with new properties.

BENCHMARK CODE	BENCHMARK
SC.3.P.9.1	Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)

	SC.3.P.9.In.1 Describe changes in the state of water as a result of freezing and melting.
	SC.3.P.9.Su.1 Identify that water can change from solid to liquid state by heating.
	SC.3.P.9.Pa.1 Recognize that ice can change to water.

Body of Knowledge: EARTH AND SPACE SCIENCE

Big Idea 5: Earth in Space and Time

Humans continue to explore Earth's place in space. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the Solar System, and Earth. Humankind's need to explore continues to lead to the development of knowledge and understanding of our Solar System.

BENCHMARK CODE	BENCHMARK
SC.3.E.5.1	Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.E.5.In.1 Recognize that stars in the sky look different from each other.
	SC.3.E.5.Su.1 Recognize that all stars except the Sun appear very small.
	SC.3.E.5.Pa.1 Recognize stars in the sky.
SC.3.E.5.2	Identify the Sun as a star that emits energy; some of it in the form of light. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.E.5.In.2 Recognize that the Sun is a star that gives off its own light.
	SC.3.E.5.Su.2 Recognize that the Sun gives off light.
	SC.3.E.5.Pa.2 Recognize that the Sun is bright.
SC.3.E.5.3	Recognize that the Sun appears large and bright because it is the closest star to Earth. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.E.5.Pa.2 Recognize that the Sun is bright.
	SC.3.E.5.In.3 Recognize that the Sun is the closest star to Earth.
	SC.3.E.5.Su.3 Recognize that the Sun is a star.
SC.3.E.5.4	Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.E.5.Pa.3 Recognize that an object can be stopped from falling.
	SC.3.E.5.In.4 Observe and describe ways to keep an object from falling due to gravity.

	SC.3.E.5.Su.4 Observe and recognize ways to stop a falling object, such as catching a ball.
SC.3.E.5.5	Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.E.5.Pa.4 Match a familiar object enlarged by magnification.
	SC.3.E.5.In.5 Recognize that stars appear larger and closer when seen through a telescope.
	SC.3.E.5.Su.5 Recognize a telescope as a tool to view stars in space.

Big Idea 6: Earth Structures

Humans continue to explore the composition and structure of the surface of Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earthâ€™s water and natural resources.

BENCHMARK CODE	BENCHMARK
SC.3.E.6.1	Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present, heat may be lost. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.E.6.In.1 Identify that energy from the Sun heats objects.
	SC.3.E.6.Su.1 Recognize that many things will get hot when left in the Sun.
	SC.3.E.6.Pa.1 Distinguish between hot and cold objects.

Body of Knowledge: NATURE OF SCIENCE

Big Idea 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.3.N.1.1	Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate

	explanations based on those explorations. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.N.1.In.1 Ask questions, explore, observe, and identify outcomes.
	SC.3.N.1.Su.1 Ask literal questions, explore, observe, and share information.
	SC.3.N.1.Pa.1 Explore, observe, and recognize common objects in the natural world.
SC.3.N.1.2	Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.N.1.In.2 Work with a group to make observations and identify results.
	SC.3.N.1.Su.2 Work with a partner to make observations.
	SC.3.N.1.Pa.2 Assist with investigations with a partner.
SC.3.N.1.3	Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations conducted. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.N.1.Pa.1 Explore, observe, and recognize common objects in the natural world.
	SC.3.N.1.In.3 Record observations to describe findings using written or visual formats, such as picture stories.
	SC.3.N.1.Su.3 Record observations to describe findings using dictated words and phrases and pictures.
SC.3.N.1.4	Recognize the importance of communication among scientists. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.N.1.Pa.3 Recognize that people share information.
	SC.3.N.1.In.4 Recognize that scientists share their knowledge and results with each other.
	SC.3.N.1.Su.4 Recognize that people work in different kinds of jobs related to science.
SC.3.N.1.5	Recognize that scientists question, discuss, and check each other's evidence and explanations. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.N.1.Pa.3 Recognize that people share information.
	SC.3.N.1.In.4 Recognize that scientists share their knowledge and results with each other.
	SC.3.N.1.Su.4 Recognize that people work in different kinds of jobs related to science.
SC.3.N.1.6	Infer based on observation. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)

	SC.3.N.1.In.1 Ask questions, explore, observe, and identify outcomes.
	SC.3.N.1.Su.1 Ask literal questions, explore, observe, and share information.
	SC.3.N.1.Pa.1 Explore, observe, and recognize common objects in the natural world.
SC.3.N.1.7	Explain that empirical evidence is information, such as observations or measurements, that is used to help validate explanations of natural phenomena. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.3.N.1.In.1 Ask questions, explore, observe, and identify outcomes.
	SC.3.N.1.Su.1 Ask literal questions, explore, observe, and share information.
	SC.3.N.1.Pa.1 Explore, observe, and recognize common objects in the natural world.

Big Idea 3: The Role of Theories, Laws, Hypotheses, and Models

The terms that describe examples of scientific knowledge, for example; "theory," "law," "hypothesis," and "model" have very specific meanings and functions within science.

BENCHMARK CODE	BENCHMARK
SC.3.N.3.1	Recognize that words in science can have different or more specific meanings than their use in everyday language; for example, energy, cell, heat/cold, and evidence. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.N.3.In.1 Recognize meanings of words used in science, such as energy, temperature, and gravity.
	SC.3.N.3.Su.1 Recognize meanings of words used in science, such as telescope, environment, and solid.
	SC.3.N.3.Pa.1 Recognize common objects related to science by name, such as ice, animal, and plant.
SC.3.N.3.2	Recognize that scientists use models to help understand and explain how things work. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.3.N.3.In.2 Use models to identify how things work.
	SC.3.N.3.Su.2 Recognize that models represent real things.
	SC.3.N.3.Pa.2 Recognize a model of a real object.
SC.3.N.3.3	Recognize that all models are approximations of natural phenomena; as such, they do not perfectly account for all observations. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.3.N.3.Su.2 Recognize that models represent real things.
	SC.3.N.3.Pa.2 Recognize a model of a real object.
	SC.3.N.3.In.3 Identify that models are representations of things found in the real world.

GRADE: 4

Body of Knowledge: LIFE SCIENCE

Big Idea 16: Heredity and Reproduction

A. Offspring of plants and animals are similar to, but not exactly like, their parents or each other.

B. Life cycles vary among organisms, but reproduction is a major stage in the life cycle of all organisms.

BENCHMARK CODE	BENCHMARK
SC.4.L.16.1	Identify processes of sexual reproduction in flowering plants, including pollination, fertilization (seed production), seed dispersal, and germination. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.L.16.In.1 Identify that insects spread pollen to help flowering plants make seeds.
	SC.4.L.16.Su.1 Recognize that many flowering plants grow from their own seeds.
	SC.4.L.16.Pa.1 Recognize that many plants have flowers and leaves.
SC.4.L.16.2	Explain that although characteristics of plants and animals are inherited, some characteristics can be affected by the environment. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.L.16.In.2 Identify behaviors that animals have naturally (inherit) and behaviors that animals learn.
	SC.4.L.16.Su.2 Recognize behaviors of common animals.
	SC.4.L.16.Pa.2 Recognize similarities between self and parents.
SC.4.L.16.3	Recognize that animal behaviors may be shaped by heredity and learning. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.L.16.In.2 Identify behaviors that animals have naturally (inherit) and behaviors that animals learn.
	SC.4.L.16.Pa.2 Recognize similarities between self and parents.
	SC.4.L.16.Su.2 Recognize behaviors of common animals.
SC.4.L.16.4	Compare and contrast the major stages in the life cycles of Florida plants and animals, such as those that undergo incomplete and complete metamorphosis, and flowering and nonflowering seed-bearing plants. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.L.16.In.3 Identify similarities in the major stages in the life cycles of common Florida plants and animals.
	SC.4.L.16.Su.3 Recognize the major stages in life cycles of common plants and animals.

	SC.4.L.16.Pa.3 Match offspring of animals with parents.

Big Idea 17: Interdependence

A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.

B. Both human activities and natural events can have major impacts on the environment.

C. Energy flows from the sun through producers to consumers.

BENCHMARK CODE	BENCHMARK
SC.4.L.17.1	Compare the seasonal changes in Florida plants and animals to those in other regions of the country. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.L.17.In.1 Identify seasonal changes in Florida plants and animals.
	SC.4.L.17.Su.1 Recognize seasonal changes in some Florida plants, such as the presence of flowers and change in leaf color.
	SC.4.L.17.Pa.1 Recognize a seasonal change in the appearance of a common plant.
SC.4.L.17.2	Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.L.17.In.2 Recognize that animals cannot make their own food and they must eat plants or other animals to survive.
	SC.4.L.17.Su.2 Recognize that animals (consumers) eat plants or other animals for their food.
	SC.4.L.17.Pa.2 Recognize that animals eat food.
SC.4.L.17.3	Trace the flow of energy from the Sun as it is transferred along the food chain through the producers to the consumers. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.L.17.Su.2 Recognize that animals (consumers) eat plants or other animals for their food.
	SC.4.L.17.Pa.2 Recognize that animals eat food.
	SC.4.L.17.In.3 Recognize that plants (producers) use energy from the Sun to make their food and animals (consumers) eat plants or other animals for their food.
SC.4.L.17.4	Recognize ways plants and animals, including humans, can impact the environment. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.L.17.Su.3 Recognize ways that people can help improve the environment, such as cleaning up trash.

	SC.4.L.17.Pa.3 Recognize ways that people can help improve the immediate environment, such as cleaning up trash.
	SC.4.L.17.In.4 Recognize things that people do to help or hurt the environment, such as recycling and pollution.

Body of Knowledge: PHYSICAL SCIENCE

Big Idea 10: Forms of Energy

A. Energy is involved in all physical processes and is a unifying concept in many areas of science.

B. Energy exists in many forms and has the ability to do work or cause a change.

BENCHMARK CODE	BENCHMARK
SC.4.P.10.1	Observe and describe some basic forms of energy, including light, heat, sound, electrical, and the energy of motion. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.P.10.In.1 Identify forms of energy, such as light, heat, electrical, and energy of motion.
	SC.4.P.10.Su.1 Recognize uses of different forms of energy, including electricity (computer, freezer); heat (camp fire, stove); and energy of motion (rollercoaster, pinball machine).
	SC.4.P.10.Pa.1 Recognize a source of heat energy (fire, heater).
SC.4.P.10.2	Investigate and describe that energy has the ability to cause motion or create change. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.P.10.Pa.1 Recognize a source of heat energy (fire, heater).
	SC.4.P.10.In.2 Describe the results of applying electrical energy (turn on lights, make motors run); heat energy (burn wood, change temperature); and energy of motion (go faster, change direction).
	SC.4.P.10.Su.2 Recognize the results of using electrical energy (turning on television); heat energy (burning wood); and energy of motion (rolling ball).
SC.4.P.10.3	Investigate and explain that sound is produced by vibrating objects and that pitch depends on how fast or slow the object vibrates. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.P.10.Pa.2 Recognize objects that create sounds.
	SC.4.P.10.In.3 Recognize that vibrations cause sound and identify sounds as high or low (pitch).
	SC.4.P.10.Su.3 Recognize sounds as high or low (pitch).
SC.4.P.10.4	Describe how moving water and air are sources of energy and can be used to move things. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)

	SC.4.P.10.Pa.3 Recognize that moving air can move objects.
	SC.4.P.10.In.4 Identify machines that use energy from moving water or air, including a windmill and a waterwheel.
	SC.4.P.10.Su.4 Identify objects that use energy from moving air, such as a pinwheel or sailboat.

Big Idea 11: Energy Transfer and Transformations

A. Waves involve a transfer of energy without a transfer of matter.

B. Water and sound waves transfer energy through a material.

C. Light waves can travel through a vacuum and through matter.

Clarification for grades 5-8: The target understanding for Big Idea 11: Energy Transfer and Transformations, is the Law of Conservation of Energy: Energy is conserved as it transfers from one object to another and from one form to another.

BENCHMARK CODE	BENCHMARK
SC.4.P.11.1	Recognize that heat flows from a hot object to a cold object and that heat flow may cause materials to change temperature. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.4.P.11.In.1 Identify that a hot object will make a cold object warm when they touch.
	SC.4.P.11.Su.1 Recognize that a hot object can make a cold object warm when they touch.
	SC.4.P.11.Pa.1 Recognize a temperature change from cold to warm.
SC.4.P.11.2	Identify common materials that conduct heat well or poorly. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.4.P.11.In.2 Identify materials that are strong conductors of heat, such as metal.
	SC.4.P.11.Su.2 Recognize a common material that is a strong conductor of heat, such as metal.
	SC.4.P.11.Pa.2 Recognize common objects that conduct heat.

Big Idea 12: Motion of Objects

A. Motion is a key characteristic of all matter that can be observed, described, and measured.

B. The motion of objects can be changed by forces.

BENCHMARK CODE	BENCHMARK
SC.4.P.12.1	Recognize that an object in motion always changes its position and may change its direction. *Content Complexity:* Level 1: Recall
	Related Access Point(s)

	SC.4.P.12.In.1 Identify that the position of an object changes when the object is in motion.
	SC.4.P.12.Su.1 Recognize that movement causes an object to change position.
	SC.4.P.12.Pa.1 Recognize that an object can move in different directions, such as left to right, straight line, and zigzag.
SC.4.P.12.2	Investigate and describe that the speed of an object is determined by the distance it travels in a unit of time and that objects can move at different speeds. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.P.12.In.2 Identify speed as how long it takes to travel a certain distance.
	SC.4.P.12.Su.2 Identify objects that move at different speeds.
	SC.4.P.12.Pa.2 Recognize an object as moving fast or slow.

Big Idea 8: Properties of Matter

A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.

B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.

The concepts of mass and weight are complicated and potentially confusing to elementary students. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.

Clarification for grades K-2: The use of the more familiar term ‘weight’ instead of the term “mass” is recommended for grades K-2.

Clarification for grades 3-5: In grade 3, introduce the term mass as compared to the term weight. In grade 4, investigate the concept of weight versus mass of objects. In grade 5, discuss why mass (not weight) is used to compare properties of solids, liquids and gases.

BENCHMARK CODE	BENCHMARK
SC.4.P.8.1	Measure and compare objects and materials based on their physical properties including: mass, shape, volume, color, hardness, texture, odor, taste, attraction to magnets. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.P.8.In.1 Compare objects and materials based on physical properties, such as size, shape, color, texture, weight, hardness, odor, taste, and temperature.
	SC.4.P.8.Su.1 Sort objects by physical properties, such as size, shape, color, texture, weight (heavy or light), and temperature (hot or cold).
	SC.4.P.8.Pa.1 Match objects with similar observable properties, such as size, shape, color, or texture.

SC.4.P.8.2	Identify properties and common uses of water in each of its states. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.4.P.8.In.2 Identify properties and uses of water in solid and liquid states.
	SC.4.P.8.Su.2 Identify uses of water in solid or liquid states.
	SC.4.P.8.Pa.2 Identify ice as a solid.
SC.4.P.8.3	Explore the Law of Conservation of Mass by demonstrating that the mass of a whole object is always the same as the sum of the masses of its parts. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.P.8.In.3 Identify that a whole object weighs the same as all of its parts together.
	SC.4.P.8.Su.3 Recognize that the parts of an object can be put together to make a whole.
	SC.4.P.8.Pa.3 Recognize that some objects have parts.
SC.4.P.8.4	Investigate and describe that magnets can attract magnetic materials and attract and repel other magnets. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.P.8.In.4 Identify objects a magnet will attract.
	SC.4.P.8.Su.4 Demonstrate that magnets can attract other magnets.
	SC.4.P.8.Pa.4 Recognize that objects can stick together.

Big Idea 9: Changes in Matter

A. Matter can undergo a variety of changes.

B. Matter can be changed physically or chemically.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A and B.

Clarification for Grades 6-8: The target understanding for students in the middle grades should begin to transition the focus to: C. When matter changes chemically, a rearrangement of bonds between the atoms occurs. This results in new substances with new properties.

BENCHMARK CODE	BENCHMARK
SC.4.P.9.1	Identify some familiar changes in materials that result in other materials with different characteristics, such as decaying animal or plant matter, burning, rusting, and cooking. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.4.P.9.In.1 Observe and describe properties of materials that have been changed into other materials, such as decayed leaves of a plant.

	SC.4.P.9.Su.1 Indicate differences in materials that have been changed into other materials, such as rust on a can.
	SC.4.P.9.Pa.1 Recognize changes in observable properties of materials.

Body of Knowledge: EARTH AND SPACE SCIENCE

Big Idea 5: Earth in Space and Time

Humans continue to explore Earth's place in space. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the Solar System, and Earth. Humankind's need to explore continues to lead to the development of knowledge and understanding of our Solar System.

BENCHMARK CODE	BENCHMARK
SC.4.E.5.1	Observe that the patterns of stars in the sky stay the same although they appear to shift across the sky nightly, and different stars can be seen in different seasons. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.E.5.In.1 Identify that there are many stars in the sky with some that create patterns.
	SC.4.E.5.Su.1 Recognize a pattern of stars in the sky, such as the Big Dipper.
	SC.4.E.5.Pa.1 Recognize that there are many stars in the sky.
SC.4.E.5.2	Describe the changes in the observable shape of the moon over the course of about a month. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.E.5.In.2 Label three phases of the moon, including full, half (quarter), and crescent.
	SC.4.E.5.Su.2 Identify a full moon and a half (quarter) moon.
	SC.4.E.5.Pa.2 Recognize a full moon as a circle.
SC.4.E.5.3	Recognize that Earth revolves around the Sun in a year and rotates on its axis in a 24-hour day. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.E.5.In.3 Recognize that Earth revolves around the Sun.
	SC.4.E.5.Su.3 Recognize that Earth is always turning (rotating).
	SC.4.E.5.Pa.3 Identify morning, noon, and night.
SC.4.E.5.4	Relate that the rotation of Earth (day and night) and apparent movements of the Sun, Moon, and stars are connected. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.E.5.Pa.3 Identify morning, noon, and night.
	SC.4.E.5.In.4 Recognize that the Sun appears to rise and set because of Earthâ€™s rotation in a 24-hour day.

	SC.4.E.5.Su.4 Recognize that the side of Earth facing the Sun has daylight.
SC.4.E.5.5	Investigate and report the effects of space research and exploration on the economy and culture of Florida. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.E.5.Pa.4 Recognize a space-related object.
	SC.4.E.5.In.5 Identify objects and people related to the space program in Florida.
	SC.4.E.5.Su.5 Recognize an object or person related to the space program in Florida.

Big Idea 6: Earth Structures

Humans continue to explore the composition and structure of the surface of Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earthâ€™s water and natural resources.

BENCHMARK CODE	BENCHMARK
SC.4.E.6.1	Identify the three categories of rocks: igneous, (formed from molten rock); sedimentary (pieces of other rocks and fossilized organisms); and metamorphic (formed from heat and pressure). *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.4.E.6.In.1 Recognize that rocks are classified by the way they are formed, such as sedimentary.
	SC.4.E.6.Su.1 Sort rocks according to observable characteristics, including color, shape, and size.
	SC.4.E.6.Pa.1 Distinguish rocks from other substances found on the Earthâ€™s surface.
SC.4.E.6.2	Identify the physical properties of common earth-forming minerals, including hardness, color, luster, cleavage, and streak color, and recognize the role of minerals in the formation of rocks. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.E.6.In.2 Identify physical properties (hardness, streak color, and luster) of common minerals, such as rock salt, talc, gold, and silver.
	SC.4.E.6.Su.2 Sort common minerals, such as rock salt, talc, gold, and silver, by their physical properties (luster and color).
	SC.4.E.6.Pa.2 Recognize common minerals, such as rock salt, talc, gold, and silver.
SC.4.E.6.3	Recognize that humans need resources found on Earth and that these are either renewable or nonrenewable. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.E.6.In.3 Recognize that some natural resources used by humans are non-renewable, such as oil.
	SC.4.E.6.Su.3 Recognize that some natural resources can run out (non-renewable).

	SC.4.E.6.Pa.3 Recognize the universal symbol for recycling.
SC.4.E.6.4	Describe the basic differences between physical weathering (breaking down of rock by wind, water, ice, temperature change, and plants) and erosion (movement of rock by gravity, wind, water, and ice). *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.E.6.In.4 Identify that wind and water cause physical weathering and erosion of rocks.
	SC.4.E.6.Su.4 Recognize examples of weathering or erosion in the environment.
	SC.4.E.6.Pa.4 Recognize the effect of weathering on an object.
SC.4.E.6.5	Investigate how technology and tools help to extend the ability of humans to observe very small things and very large things. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.E.6.In.5 Identify tools used to observe things that are far away and things that are very small.
	SC.4.E.6.Su.5 Recognize tools that will make things look larger, such as a telescope and a magnifier.
	SC.4.E.6.Pa.5 Recognize that something has been magnified.
SC.4.E.6.6	Identify resources available in Florida (water, phosphate, oil, limestone, silicon, wind, and solar energy). *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.4.E.6.In.6 Identify natural resources found in Florida, including solar energy, water, and limestone.
	SC.4.E.6.Su.6 Recognize natural resources found in Florida, such as solar energy and water.
	SC.4.E.6.Pa.6 Recognize water as a resource in Florida.

Body of Knowledge: NATURE OF SCIENCE

Big Idea 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.4.N.1.1	Raise questions about the natural world, use appropriate reference materials that support understanding to obtain information (identifying the source), conduct both individual and team investigations through free exploration and systematic investigations, and generate appropriate explanations based on those explorations. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.N.1.In.1 Ask a question about the natural world and use selected reference material to find information, observe, explore, and identify findings.
	SC.4.N.1.Su.1 Ask a question about the natural world, explore materials, observe, and share information.
	SC.4.N.1.Pa.1 Explore, observe, and select an object or picture to solve a simple problem.
SC.4.N.1.2	Compare the observations made by different groups using multiple tools and seek reasons to explain the differences across groups. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.N.1.In.2 Compare own observations with observations of others.
	SC.4.N.1.Su.2 Identify information based on observations of self and others.
	SC.4.N.1.Pa.2 Recognize differences in objects or pictures.
SC.4.N.1.3	Explain that science does not always follow a rigidly defined method ("the scientific method") but that science does involve the use of observations and empirical evidence. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.N.1.In.1 Ask a question about the natural world and use selected reference material to find information, observe, explore, and identify findings.
	SC.4.N.1.Su.1 Ask a question about the natural world, explore materials, observe, and share information.
	SC.4.N.1.Pa.1 Explore, observe, and select an object or picture to solve a simple problem.
SC.4.N.1.4	Attempt reasonable answers to scientific questions and cite evidence in support. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.N.1.Pa.1 Explore, observe, and select an object or picture to solve a simple problem.
	SC.4.N.1.In.3 Relate findings to predefined science questions.
	SC.4.N.1.Su.3 Answer questions about objects and actions related to science.
SC.4.N.1.5	Compare the methods and results of investigations done by other classmates. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.N.1.In.2 Compare own observations with observations of others.

	SC.4.N.1.Su.2 Identify information based on observations of self and others.
	SC.4.N.1.Pa.4 Recognize that people share information about science.
SC.4.N.1.6	Keep records that describe observations made, carefully distinguishing actual observations from ideas and inferences about the observations. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.4.N.1.Pa.3 Select an object or picture to represent observed events.
	SC.4.N.1.In.4 Communicate observations and findings through the use of pictures, writing, or charts.
	SC.4.N.1.Su.4 Record observations using drawings, dictation, or pictures.
SC.4.N.1.7	Recognize and explain that scientists base their explanations on evidence. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.N.1.Pa.4 Recognize that people share information about science.
	SC.4.N.1.In.5 Recognize that scientists perform experiments, make observations, and gather evidence.
	SC.4.N.1.Su.5 Recognize ways that scientists collect evidence, such as by observations or measuring.
SC.4.N.1.8	Recognize that science involves creativity in designing experiments. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.N.1.Pa.4 Recognize that people share information about science.
	SC.4.N.1.In.5 Recognize that scientists perform experiments, make observations, and gather evidence.
	SC.4.N.1.Su.5 Recognize ways that scientists collect evidence, such as by observations or measuring.

Big Idea 2: The Characteristics of Scientific Knowledge

A: Scientific knowledge is based on empirical evidence, and is appropriate for understanding the natural world, but it provides only a limited understanding of the supernatural, aesthetic, or other ways of knowing, such as art, philosophy, or religion.

B: Scientific knowledge is durable and robust, but open to change.

C: Because science is based on empirical evidence it strives for objectivity, but as it is a human endeavor the processes, methods, and knowledge of science include subjectivity, as well as creativity and discovery.

BENCHMARK CODE	BENCHMARK
SC.4.N.2.1	Explain that science focuses solely on the natural world. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)

	SC.4.N.2.In.1 Identify that science focuses on the natural world.
	SC.4.N.2.Su.1 Recognize that science focuses on the natural world.
	SC.4.N.2.Pa.1 Associate science with the natural world in the local environment.

Big Idea 3: The Role of Theories, Laws, Hypotheses, and Models

The terms that describe examples of scientific knowledge, for example; "theory," "law," "hypothesis," and "model" have very specific meanings and functions within science.

BENCHMARK CODE	BENCHMARK
SC.4.N.3.1	Explain that models can be three dimensional, two dimensional, an explanation in your mind, or a computer model. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.4.N.3.In.1 Identify different types of models, such as a replica, a picture, or an animation.
	SC.4.N.3.Su.1 Recognize different types of models, such as a replica or a picture.
	SC.4.N.3.Pa.1 Match a model that is a replica to a real object.

GRADE: 5

Body of Knowledge: LIFE SCIENCE

Big Idea 14: Organization and Development of Living Organisms

A. All plants and animals, including humans, are alike in some ways and different in others.

B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.

C. Humans can better understand the natural world through careful observation.

BENCHMARK CODE	BENCHMARK
SC.5.L.14.1	Identify the organs in the human body and describe their functions, including the skin, brain, heart, lungs, stomach, liver, intestines, pancreas, muscles and skeleton, reproductive organs, kidneys, bladder, and sensory organs. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.L.14.In.1 Distinguish major external and internal body parts, including skin, brain, heart, lungs, stomach, muscles and skeleton, reproductive organs, and sensory organs.
	SC.5.L.14.Su.1 Identify major external and internal body parts, including skin, brain, heart, lungs, stomach, and sensory organs.
	SC.5.L.14.Pa.1 Recognize body parts related to movement and the five senses.
SC.5.L.14.2	Compare and contrast the function of organs and other physical structures of plants and animals, including humans, for example: some animals have skeletons for support -- some with internal skeletons others with exoskeletons -- while some plants have

	stems for support. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.L.14.Su.2 Recognize the functions of the major parts of plants and animals.
	SC.5.L.14.Pa.2 Observe plants and animals and recognize how they are alike in the way they look.

Big Idea 15: Diversity and Evolution of Living Organisms

A. Earth is home to a great diversity of living things, but changes in the environment can affect their survival.

B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.

BENCHMARK CODE	BENCHMARK
SC.5.L.15.1	Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.L.15.In.1 Identify ways that plants and animals can be affected by changes in their habitats, such as lack of food or water, disease, or reduced space.
	SC.5.L.15.Su.1 Recognize ways that plants and animals can be affected by changes in their habitats, such as lack of food or water.
	SC.5.L.15.Pa.1 Recognize what happens when plants donâ€™t get water.

Big Idea 17: Interdependence

A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.

B. Both human activities and natural events can have major impacts on the environment.

C. Energy flows from the sun through producers to consumers.

BENCHMARK CODE	BENCHMARK
SC.5.L.17.1	Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.L.17.In.1 Identify features of common plants and animals that enable them to survive in different habitats (environments).
	SC.5.L.17.Su.1 Recognize that many different kinds of living things are found in different habitats.
	SC.5.L.17.Pa.1 Match common living things with their habitats.

Body of Knowledge: PHYSICAL SCIENCE

Big Idea 10: Forms of Energy

A. Energy is involved in all physical processes and is a unifying concept in many areas of science.

B. Energy exists in many forms and has the ability to do work or cause a change.

BENCHMARK CODE	BENCHMARK
SC.5.P.10.1	Investigate and describe some basic forms of energy, including light, heat, sound, electrical, chemical, and mechanical. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.P.10.In.1 Identify forms of energy, including heat, light, sound, electrical, and mechanical.
	SC.5.P.10.Su.1 Recognize uses of electrical energy (popcorn popper, vacuum cleaner), heat energy (grill, heater), light energy (sunlight, flashlight), and mechanical energy (bicycle).
	SC.5.P.10.Pa.1 Recognize a source of light energy (Sun, light bulb).
SC.5.P.10.2	Investigate and explain that energy has the ability to cause motion or create change. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.P.10.In.2 Identify ways energy can cause things to move or create changes.
	SC.5.P.10.Su.2 Recognize that energy is required to cause motion.
	SC.5.P.10.Pa.2 Initiate a change in the motion of an object.
SC.5.P.10.3	Investigate and explain that an electrically-charged object can attract an uncharged object and can either attract or repel another charged object without any contact between the objects. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.P.10.In.3 Identify that electrically charged materials will pull (attract) other materials.
	SC.5.P.10.Su.3 Recognize that electrically charged materials will pull (attract) other materials.
	SC.5.P.10.Pa.3 Demonstrate pushing away (repulsion) and pulling (attraction).
SC.5.P.10.4	Investigate and explain that electrical energy can be transformed into heat, light, and sound energy, as well as the energy of motion. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.P.10.In.4 Demonstrate that electricity can produce heat, light, and sound.
	SC.5.P.10.Su.4 Recognize examples of electricity as a producer of heat, light, and sound.
	SC.5.P.10.Pa.4 Identify one source of sound, heat, or light that uses electricity.

Big Idea 11: Energy Transfer and Transformations

A. Waves involve a transfer of energy without a transfer of matter.

B. Water and sound waves transfer energy through a material.

C. Light waves can travel through a vacuum and through matter.

Clarification for grades 5-8: The target understanding for Big Idea 11: Energy Transfer and Transformations, is the Law of Conservation of Energy: Energy is conserved as it transfers from one object to another and from one form to another.

BENCHMARK CODE	BENCHMARK
SC.5.P.11.1	Investigate and illustrate the fact that the flow of electricity requires a closed circuit (a complete loop). *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.P.11.In.1 Identify the power source and wires (conductors) in an electrical circuit.
	SC.5.P.11.Su.1 Recognize the power source in an electrical circuit.
	SC.5.P.11.Pa.1 Recognize that electrical systems must be turned on (closed) in order to work.
SC.5.P.11.2	Identify and classify materials that conduct electricity and materials that do not. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.P.11.Pa.1 Recognize that electrical systems must be turned on (closed) in order to work.
	SC.5.P.11.In.2 Identify materials that conduct electricity.
	SC.5.P.11.Su.2 Recognize a material that conducts electricity.

Big Idea 13: Forces and Changes in Motion

A. It takes energy to change the motion of objects.

B. Energy change is understood in terms of forces--pushes or pulls.

C. Some forces act through physical contact, while others act at a distance.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A, B, and C.

Clarification for grades 6-8: The target understanding for students in grades 6-8 should begin to transition the focus to a more specific definition of forces and changes in motion. Net forces create a change in motion. A change in momentum occurs when a net force is applied to an object over a time interval.

Grades 9-12, Standard 12: Motion - A. Motion can be measured and described qualitatively and quantitatively. Net forces create a change in motion. B. Momentum is conserved under well-defined conditions. A change in momentum occurs when a net force is applied to an object over a time interval.

BENCHMARK CODE	BENCHMARK
SC.5.P.13.1	Identify familiar forces that cause objects to move, such as pushes or pulls, including gravity acting on falling objects. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.5.P.13.In.1 Distinguish between movement of an object caused by gravity and movement caused by pushes and pulls.
	SC.5.P.13.Su.1 Recognize that gravity causes an object to move.
	SC.5.P.13.Pa.1 Recognize that pushing or pulling makes an object move.
SC.5.P.13.2	Investigate and describe that the greater the force applied to it, the greater the change in motion of a given object. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.P.13.Pa.1 Recognize that pushing or pulling makes an object move.
	SC.5.P.13.In.2 Identify that heavier objects take more force to move than lighter ones.
	SC.5.P.13.Su.2 Recognize that a heavier object is harder to move than a light one.
SC.5.P.13.3	Investigate and describe that the more mass an object has, the less effect a given force will have on the object's motion. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.P.13.Pa.1 Recognize that pushing or pulling makes an object move.
	SC.5.P.13.In.2 Identify that heavier objects take more force to move than lighter ones.
	SC.5.P.13.Su.2 Recognize that a heavier object is harder to move than a light one.
SC.5.P.13.4	Investigate and explain that when a force is applied to an object but it does not move, it is because another opposing force is being applied by something in the environment so that the forces are balanced. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.P.13.Pa.2 Recognize a way to stop an object from moving.
	SC.5.P.13.In.3 Identify that an opposing force (push or pull) is needed to prevent an object from moving.
	SC.5.P.13.Su.3 Recognize the source of a force (push or pull) used to stop an object from moving.

Big Idea 8: Properties of Matter

A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.

B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.

The concepts of mass and weight are complicated and potentially confusing to elementary students. Hence, the more familiar term of "weight" is recommended for use to stand for both mass and weight in grades K-5. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.

Clarification for grades K-2: The use of the more familiar term â€˜weightâ€™ instead of the term â€œmassâ€• is recommended for grades K-2.

Clarification for grades 3-5: In grade 3, introduce the term mass as compared to the term weight. In grade 4, investigate the concept of weight versus mass of objects. In grade 5, discuss why mass (not weight) is used to compare properties of solids, liquids and gases.

BENCHMARK CODE	BENCHMARK
SC.5.P.8.1	Compare and contrast the basic properties of solids, liquids, and gases, such as mass, volume, color, texture, and temperature. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.P.8.In.1 Identify basic properties of solids, liquids, and gases, such as color, texture, and temperature.
	SC.5.P.8.Su.1 Identify the basic properties of solids and liquids, such as color, texture, and temperature.
	SC.5.P.8.Pa.1 Distinguish between water as a solid or liquid.
SC.5.P.8.2	Investigate and identify materials that will dissolve in water and those that will not and identify the conditions that will speed up or slow down the dissolving process. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.P.8.In.2 Identify examples of materials that will dissolve in water and those that will not.
	SC.5.P.8.Su.2 Recognize examples of materials that will dissolve in water.
	SC.5.P.8.Pa.2 Recognize a common substance that dissolves in water.
SC.5.P.8.3	Demonstrate and explain that mixtures of solids can be separated based on observable properties of their parts such as particle size, shape, color, and magnetic attraction. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.P.8.In.3 Identify the observable properties of the parts of a mixture, such as the particle size, shape, and color.
	SC.5.P.8.Su.3 Identify the separate parts of a mixture by color or shape.
	SC.5.P.8.Pa.3 Separate a group of objects into its parts.
SC.5.P.8.4	Explore the scientific theory of atoms (also called atomic theory) by recognizing that all matter is composed of parts that are too small to be seen without magnification. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.5.P.8.Pa.3 Separate a group of objects into its parts.

	SC.5.P.8.In.4 Recognize that materials are made of very small parts that cannot be seen without a magnifying glass or a microscope.
	SC.5.P.8.Su.4 Use a magnifying tool to see small parts of an object.

Big Idea 9: Changes in Matter

A. Matter can undergo a variety of changes.

B. Matter can be changed physically or chemically.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A and B.

Clarification for Grades 6-8: The target understanding for students in the middle grades should begin to transition the focus to: C. When matter changes chemically, a rearrangement of bonds between the atoms occurs. This results in new substances with new properties.

BENCHMARK CODE	BENCHMARK
SC.5.P.9.1	Investigate and describe that many physical and chemical changes are affected by temperature. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.P.9.In.1 Observe and identify that heating and cooling can change the properties of materials.
	SC.5.P.9.Su.1 Recognize changes in properties of materials caused by heating or cooling.
	SC.5.P.9.Pa.1 Recognize that freezing changes water to ice.

Body of Knowledge: EARTH AND SPACE SCIENCE

Big Idea 5: Earth in Space and Time

Humans continue to explore Earth's place in space. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the Solar System, and Earth. Humankind's need to explore continues to lead to the development of knowledge and understanding of our Solar System.

BENCHMARK CODE	BENCHMARK
SC.5.E.5.1	Recognize that a galaxy consists of gas, dust, and many stars, including any objects orbiting the stars. Identify our home galaxy as the Milky Way. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.5.E.5.In.1 Identify that a galaxy is made of a very large number of stars and the planets that orbit them.
	SC.5.E.5.Su.1 Recognize that a galaxy is a group of stars.
	SC.5.E.5.Pa.1 Recognize that stars are very far away from Earth.
SC.5.E.5.2	Recognize the major common characteristics of all planets and compare/contrast the properties of inner and outer planets.

	Content Complexity: Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.E.5.In.2 Recognize major differences in the characteristics of the planets in the Solar System.
	SC.5.E.5.Su.2 Recognize that surface of planet Earth is covered by water and land.
	SC.5.E.5.Pa.2 Recognize Earth as the planet where we live.
SC.5.E.5.3	Distinguish among the following objects of the Solar System -- Sun, planets, moons, asteroids, comets -- and identify Earth's position in it. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.E.5.Pa.2 Recognize Earth as the planet where we live.
	SC.5.E.5.In.3 Identify that the Solar System includes the Sun, Earth, Moon, and other planets and their moons.
	SC.5.E.5.Su.3 Identify that the Sun, Earth, and Moon are part of the Solar System.

Big Idea 7: Earth Systems and Patterns

Humans continue to explore the interactions among water, air, and land. Air and water are in constant motion that results in changing conditions that can be observed over time.

BENCHMARK CODE	BENCHMARK
SC.5.E.7.1	Create a model to explain the parts of the water cycle. Water can be a gas, a liquid, or a solid and can go back and forth from one state to another. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.E.7.In.1 Label the state of water in each stage of the water cycle.
	SC.5.E.7.Su.1 Match different states of water (liquid and solid) to changes in temperature.
	SC.5.E.7.Pa.1 Distinguish between water as a liquid and ice as a solid.
SC.5.E.7.2	Recognize that the ocean is an integral part of the water cycle and is connected to all of Earth's water reservoirs via evaporation and precipitation processes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.E.7.In.2 Recognize that water evaporates from the ocean, falls as precipitation, and then goes back into the ocean.
	SC.5.E.7.Su.2 Observe and recognize that water evaporates over time.
	SC.5.E.7.Pa.2 Recognize that wet things will dry when they are left in the air.
SC.5.E.7.3	Recognize how air temperature, barometric pressure, humidity, wind speed and direction, and precipitation determine the weather in a particular place and time. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.E.7.In.3 Identify elements that make up weather, including temperature, precipitation, and wind speed and direction.

	SC.5.E.7.Su.3 Recognize elements of weather, including temperature, precipitation, and wind.
	SC.5.E.7.Pa.3 Recognize the weather conditions including hot/cold and raining/not raining during the day.
SC.5.E.7.4	Distinguish among the various forms of precipitation (rain, snow, sleet, and hail), making connections to the weather in a particular place and time. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.E.7.Pa.3 Recognize the weather conditions including hot/cold and raining/not raining during the day.
	SC.5.E.7.In.4 Describe types of precipitation, including rain, snow, and hail.
	SC.5.E.7.Su.4 Identify different types of precipitation, including rain and snow.
SC.5.E.7.5	Recognize that some of the weather-related differences, such as temperature and humidity, are found among different environments, such as swamps, deserts, and mountains. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.E.7.Pa.3 Recognize the weather conditions including hot/cold and raining/not raining during the day.
	SC.5.E.7.In.5 Recognize weather-related differences in environments, such as swamps and deserts.
	SC.5.E.7.Su.5 Match specific weather conditions with different locations.
SC.5.E.7.6	Describe characteristics (temperature and precipitation) of different climate zones as they relate to latitude, elevation, and proximity to bodies of water. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.E.7.Pa.3 Recognize the weather conditions including hot/cold and raining/not raining during the day.
	SC.5.E.7.Su.5 Match specific weather conditions with different locations.
	SC.5.E.7.In.6 Identify features of weather in different climate zones, such as tropical and polar.
SC.5.E.7.7	Design a family preparedness plan for natural disasters and identify the reasons for having such a plan. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.E.7.Pa.4 Recognize examples of severe weather conditions.
	SC.5.E.7.Su.6 Identify what to do in severe weather.
	SC.5.E.7.In.7 Identify emergency plans and procedures for severe weather.

Body of Knowledge: NATURE OF SCIENCE
Big Idea 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.5.N.1.1	Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.5.N.1.In.1 Ask a question about the natural world, use selected reference materials to find information, work with others to carry out a simple experiment, and share results.
	SC.5.N.1.Su.1 Ask questions about the natural world, use selected materials to find information, observe, and identify answers to the question.
	SC.5.N.1.Pa.1 Explore, observe, and select an object or picture to respond to a question about the natural world.
SC.5.N.1.2	Explain the difference between an experiment and other types of scientific investigation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.N.1.In.2 Identify the basic purpose of an experiment.
	SC.5.N.1.Su.2 Identify the result of a simple experiment.
	SC.5.N.1.Pa.2 Recognize that people use observation and actions to get answers to questions about the natural world.
SC.5.N.1.3	Recognize and explain the need for repeated experimental trials. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.N.1.Pa.2 Recognize that people use observation and actions to get answers to questions about the natural world.
	SC.5.N.1.In.3 Recognize that experiments may include activities that are repeated.
	SC.5.N.1.Su.3 Recognize that experiments can be repeated with other groups.

SC.5.N.1.4	Identify a control group and explain its importance in an experiment. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.N.1.Pa.2 Recognize that people use observation and actions to get answers to questions about the natural world.
	SC.5.N.1.In.3 Recognize that experiments may include activities that are repeated.
	SC.5.N.1.Su.3 Recognize that experiments can be repeated with other groups.
SC.5.N.1.5	Recognize and explain that authentic scientific investigation frequently does not parallel the steps of "the scientific method." *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.N.1.Pa.2 Recognize that people use observation and actions to get answers to questions about the natural world.
	SC.5.N.1.In.4 Recognize that scientists use various methods to perform investigations, such as reviewing work of other scientists, making observations, and conducting experiments.
	SC.5.N.1.Su.4 Recognize ways that scientific evidence can be collected, such as by observing or measuring.
SC.5.N.1.6	Recognize and explain the difference between personal opinion/interpretation and verified observation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.N.1.Pa.1 Explore, observe, and select an object or picture to respond to a question about the natural world.
	SC.5.N.1.In.5 Determine whether descriptions of observations are based on fact or personal belief.
	SC.5.N.1.Su.5 Recognize facts about a scientific observation.

Big Idea 2: The Characteristics of Scientific Knowledge

A: Scientific knowledge is based on empirical evidence, and is appropriate for understanding the natural world, but it provides only a limited understanding of the supernatural, aesthetic, or other ways of knowing, such as art, philosophy, or religion.

B: Scientific knowledge is durable and robust, but open to change.

C: Because science is based on empirical evidence it strives for objectivity, but as it is a human endeavor the processes, methods, and knowledge of science include subjectivity, as well as creativity and discovery.

BENCHMARK CODE	BENCHMARK
SC.5.N.2.1	Recognize and explain that science is grounded in empirical observations that are testable; explanation must always be linked with evidence. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.N.2.In.1 Identify that science knowledge is based on observations and evidence.

	SC.5.N.2.Su.1 Recognize that science knowledge is based on careful observations.
	SC.5.N.2.Pa.1 Recognize the importance of making careful observations.
SC.5.N.2.2	Recognize and explain that when scientific investigations are carried out, the evidence produced by those investigations should be replicable by others. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.5.N.2.In.2 Recognize that experiments involve procedures that can be repeated the same way by others.
	SC.5.N.2.Su.2 Recognize the importance of following correct procedures when carrying out science experiments.
	SC.5.N.2.Pa.2 Recognize that a common activity can be repeated.

GRADE: 68

Body of Knowledge: COMPUTER SCIENCE - PERSONAL, COMMUNITY, GLOBAL, AND ETHICAL IMPACT (DISCONTINUED AFTER 2024-2025)

Standard 1: Responsible use of technology and information

BENCHMARK CODE	BENCHMARK
SC.68.CS-PC.1.1 (Discontinued after 2024-2025)	Recognize and describe legal and ethical behaviors when using information and technology and describe the consequences of misuse.
SC.68.CS-PC.1.2 (Discontinued after 2024-2025)	Describe and use safe and appropriate practices when participating in online communities (e.g., discussion groups, blogs, and social networking sites).
SC.68.CS-PC.1.3 (Discontinued after 2024-2025)	Evaluate the proper use and operation of security technologies (e.g., passwords, virus protection software, spam filters, pop-up blockers, and cookies).
SC.68.CS-PC.1.4 (Discontinued after 2024-2025)	Recognize the impacts and consequences of plagiarism on the development of creative works, projects, publications and online content.

Standard 2: The impact of computing resources on local and global society

BENCHMARK CODE	BENCHMARK
SC.68.CS-PC.2.1 (Discontinued after 2024-2025)	Analyze the positive and negative impacts of computing, social networking and web technologies on human culture.
SC.68.CS-PC.2.2 (Discontinued after 2024-2025)	Explain the possible consequences of cyberbullying and inappropriate use of social media on personal life and society.
SC.68.CS-PC.2.3 (Discontinued after 2024-2025)	Describe the influence of access to information technologies over time and the effects those changes have had on education, the workplace, and the global society.
SC.68.CS-PC.2.4 (Discontinued after 2024-2025)	Describe how the unequal net-neutrality and distribution of computing resources in a global economy raises issues of equity, access, and power.
SC.68.CS-PC.2.5 (Discontinued after 2024-2025)	Describe ways in which adaptive technologies can assist users with special needs to function in their daily lives.

SC.68.CS-PC.2.6 (Discontinued after 2024-2025)	Identify and discuss the technology skills needed in the workplace.
SC.68.CS-PC.2.7 (Discontinued after 2024-2025)	Interpret writings and/or communications which use developmentally appropriate terminology.
SC.68.CS-PC.2.8 (Discontinued after 2024-2025)	Identify interdisciplinary careers that are enhanced by computer science.

Standard 3: Evaluation of digital information resources

BENCHMARK CODE	BENCHMARK
SC.68.CS-PC.3.1 (Discontinued after 2024-2025)	Answer research questions using digital information resources.
SC.68.CS-PC.3.2 (Discontinued after 2024-2025)	Analyze how media and technology can be used to distort, exaggerate, or misrepresent information.
SC.68.CS-PC.3.3 (Discontinued after 2024-2025)	Describe strategies for determining the reliability of resources or information on the Internet.
SC.68.CS-PC.3.4 (Discontinued after 2024-2025)	Identify peer reviewed resources and understand the need for peer review.
SC.68.CS-PC.3.5 (Discontinued after 2024-2025)	Identify resources such as city, state, and federal government websites and explain that these resources can be used for communication between citizens and government.

Standard 4: Security, privacy, information sharing, ownership, licensure and copyright

BENCHMARK CODE	BENCHMARK
SC.68.CS-PC.4.1 (Discontinued after 2024-2025)	Explain the guidelines for the fair use of downloading, sharing or modifying of digital materials.
SC.68.CS-PC.4.2 (Discontinued after 2024-2025)	Explain how copyright law and licensing protect the owner of intellectual properties.
SC.68.CS-PC.4.3 (Discontinued after 2024-2025)	Explain the possible consequences of violating intellectual property law.
SC.68.CS-PC.4.4 (Discontinued after 2024-2025)	Identify threats and actions that protect devices from viruses, intrusion, vandalism, and other malicious activities.
SC.68.CS-PC.4.5 (Discontinued after 2024-2025)	Demonstrate compliance with the school's Acceptable Use Policy.
SC.68.CS-PC.4.6 (Discontinued after 2024-2025)	Generate text and non-text citations using digital citation tool.

Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION AND COLLABORATION (DISCONTINUED AFTER 2024-2025)

Standard 1: Communication and collaboration

BENCHMARK CODE	BENCHMARK

SC.68.CS-CC.1.1 (Discontinued after 2024-2025)	Demonstrate an ability to communicate appropriately through various online tools.
SC.68.CS-CC.1.2 (Discontinued after 2024-2025)	Apply productivity and or multimedia tools for local and global group collaboration.
SC.68.CS-CC.1.3 (Discontinued after 2024-2025)	Design, develop, and publish a collaborative digital product using a variety of digital tools and media-rich resources that demonstrate and communicate concepts to inform, persuade, and/or entertain.

Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION SYSTEMS AND COMPUTING (DISCONTINUED AFTER 2024-2025)

Standard 1: Modeling and simulations

BENCHMARK CODE	BENCHMARK
SC.68.CS-CS.1.1 (Discontinued after 2024-2025)	Examine connections between elements of mathematics and computer science including binary numbers, logic, sets, and functions.
SC.68.CS-CS.1.2 (Discontinued after 2024-2025)	Create or modify and use a simulation to analyze and illustrate a concept in depth (i.e., use a simulation to illustrate a genetic variation), individually and collaboratively.
SC.68.CS-CS.1.3 (Discontinued after 2024-2025)	Evaluate what kinds of real-world problems can be solved using modeling and simulation.
SC.68.CS-CS.1.4 (Discontinued after 2024-2025)	Interact with content-specific models and simulations to support learning, research and problem solving (e.g., immigration, international trade, invasive species).

Standard 2: Problem solving and Algorithms

BENCHMARK CODE	BENCHMARK
SC.68.CS-CS.2.1 (Discontinued after 2024-2025)	Create, modify, and use a database (e.g., define field formats, adding new records, manipulate data) to analyze data and propose solutions for a task/problem, individually and collaboratively.
SC.68.CS-CS.2.2 (Discontinued after 2024-2025)	Solve real-life issues in science and engineering (i.e., generalize a solution to open-ended problems) using computational thinking skills.
SC.68.CS-CS.2.3 (Discontinued after 2024-2025)	Perform a variety of operations such as sorting, filtering, and searching in a database.
SC.68.CS-CS.2.4 (Discontinued after 2024-2025)	Organize and display information in a variety of ways such as number formats (e.g., scientific notation, percentages, and exponents), charts, tables and graphs.
SC.68.CS-CS.2.5 (Discontinued after 2024-2025)	Decompose a problem and create a function for one of its parts at a time (e.g., video game, robot obstacle course, making dinner), individually and collaboratively.
SC.68.CS-CS.2.6 (Discontinued after 2024-2025)	Create a program that implements an algorithm to achieve a given goal, individually and collaboratively.
SC.68.CS-CS.2.7 (Discontinued after 2024-2025)	Design solutions that use repetition and two-way selection (e.g., for, while, if/else).
SC.68.CS-CS.2.8 (Discontinued after 2024-2025)	Recognize that boundaries need to be taken into account for an algorithm to produce correct results.

SC.68.CS-CS.2.9 (Discontinued after 2024-2025)	Identify simple data types and data structures.
SC.68.CS-CS.2.10 (Discontinued after 2024-2025)	Recognize that more than one algorithm can solve a given problem.
SC.68.CS-CS.2.11 (Discontinued after 2024-2025)	Predict outputs while showing an understanding of inputs.
SC.68.CS-CS.2.12 (Discontinued after 2024-2025)	Select the 'best' algorithm based on a given criteria (e.g., time, resource, and accessibility) to solve a problem, individually and collaboratively.
SC.68.CS-CS.2.13 (Discontinued after 2024-2025)	Explore a problem domain using iterative development and debugging.
SC.68.CS-CS.2.14 (Discontinued after 2024-2025)	Perform program tracing to predict the behavior of programs.

Standard 3: Digital tools

BENCHMARK CODE	BENCHMARK
SC.68.CS-CS.3.1 (Discontinued after 2024-2025)	Explain why different file types exist (e.g., formats for word processing, images, music, and three-dimensional drawings).
SC.68.CS-CS.3.2 (Discontinued after 2024-2025)	Identify the kinds of content associated with different file types.
SC.68.CS-CS.3.3 (Discontinued after 2024-2025)	Integrate information from multiple file formats into a single artifact.

Standard 4: Hardware and software

BENCHMARK CODE	BENCHMARK
SC.68.CS-CS.4.1 (Discontinued after 2024-2025)	Identify and describe the function of the main internal parts of a basic computing device (e.g., motherboard, hard drive, Central Processing Unit -CPU).
SC.68.CS-CS.4.2 (Discontinued after 2024-2025)	Describe the main functions of an operating system and explain how an operating system provides user and system services (e.g., user interface, IO device management, task management).
SC.68.CS-CS.4.3 (Discontinued after 2024-2025)	Describe the relationships between hardware and software (e.g., BIOS, operating systems and firmware).
SC.68.CS-CS.4.4 (Discontinued after 2024-2025)	Identify and describe the use of sensors, actuators, and control systems in an embodied system (e.g., a robot, an e-textile, installation art, and a smart room).
SC.68.CS-CS.4.5 (Discontinued after 2024-2025)	Evaluate a hardware or software problem and construct the steps involved in diagnosing and solving the problem (e.g., power, connections, application window or toolbar, cables, ports, network resources, video, and sound).
SC.68.CS-CS.4.6 (Discontinued after 2024-2025)	Describe the essential characteristics of a software artifact.
SC.68.CS-CS.4.7 (Discontinued after 2024-2025)	Describe the major components and functions of computer systems and networks.

SC.68.CS-CS.4.8 (Discontinued after 2024-2025)	Identify software used to support specialized forms of human-computer interaction.

Standard 5: Network systems	
BENCHMARK CODE	**BENCHMARK**
SC.68.CS-CS.5.1 (Discontinued after 2024-2025)	Describe how information, both text and non-text, is translated and communicated between digital computers over a computer network.
SC.68.CS-CS.5.2 (Discontinued after 2024-2025)	Explain the difference between physical (wired), local area wireless, and mobile networks
SC.68.CS-CS.5.3 (Discontinued after 2024-2025)	Identify the major components of a network.

Standard 6: Human â€“ Computer interactions and Artificial Intelligence	
BENCHMARK CODE	**BENCHMARK**
SC.68.CS-CS.6.1 (Discontinued after 2024-2025)	Explain why some tasks can be accomplished more easily by computers.
SC.68.CS-CS.6.2 (Discontinued after 2024-2025)	Describe how humans and machines interact to accomplish tasks that cannot be accomplished by either alone.
SC.68.CS-CS.6.3 (Discontinued after 2024-2025)	Identify novel ways humans interact with computers, including software, probes, sensors, and handheld devices.
SC.68.CS-CS.6.4 (Discontinued after 2024-2025)	Describe ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, and computer vision).
SC.68.CS-CS.6.5 (Discontinued after 2024-2025)	Identify factors that distinguish humans from machines.
SC.68.CS-CS.6.6 (Discontinued after 2024-2025)	Design and demonstrate the use of a device (e.g., robot, e-textile) to accomplish a task, individually and collaboratively.

Body of Knowledge: COMPUTER SCIENCE - COMPUTER PRACTICES AND PROGRAMMING	
Standard 1: Data analysis	
BENCHMARK CODE	**BENCHMARK**
SC.68.CS-CP.1.1 (Discontinued after 2024-2025)	Define parameters for individual and collaborative projects using Boolean logic (e.g., using “not”, “or”, “and”).
SC.68.CS-CP.1.2 (Discontinued after 2024-2025)	Select and use data-collection technology (e.g., probes, handheld devices, geographic mapping systems and output from multiple runs of a computer program) to gather, view, organize, analyze, and report results for content-related problems, individually and collaboratively.

Standard 2: Computer programming basics	
BENCHMARK CODE	**BENCHMARK**

SC.68.CS-CP.2.1 (Discontinued after 2024-2025)	Develop problem solutions using visual representations of problem states, structures and data.
SC.68.CS-CP.2.2 (Discontinued after 2024-2025)	Evaluate the logical flow of a step-by-step program by acting it out through computer-free activities.
SC.68.CS-CP.2.3 (Discontinued after 2024-2025)	Develop problem solutions using a block programming language, including all of the following: looping behavior, conditional statements, expressions, variables, and functions.
SC.68.CS-CP.2.4 (Discontinued after 2024-2025)	Develop problem solutions using a programming language, including all of the following: looping behavior, conditional statements, expressions, variables, and functions.

Standard 3: Programming applications	
BENCHMARK CODE	**BENCHMARK**
SC.68.CS-CP.3.1 (Discontinued after 2024-2025)	Select appropriate tools and technology resources to accomplish a variety of tasks and solve problems.
SC.68.CS-CP.3.2 (Discontinued after 2024-2025)	Create online content (e.g., webpage, blog, digital portfolio, multimedia), using advanced design tools.
SC.68.CS-CP.3.3 (Discontinued after 2024-2025)	Create an artifact (independently and collaboratively) that answers a research question and communicates results and conclusions.

GRADE: 6

Body of Knowledge: LIFE SCIENCE

Big Idea 14: Organization and Development of Living Organisms

A. All living things share certain characteristics.

B. The scientific theory of cells, also called cell theory, is a fundamental organizing principle of life on Earth.

C. Life can be organized in a functional and structural hierarchy.

D. Life is maintained by various physiological functions essential for growth, reproduction, and homeostasis.

BENCHMARK CODE	BENCHMARK
SC.6.L.14.1	Describe and identify patterns in the hierarchical organization of organisms from atoms to molecules and cells to tissues to organs to organ systems to organisms. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.6.L.14.In.1 Identify how the major structures of plants and organs of animals work as parts of larger systems, such as the heart is part of the circulatory system that pumps blood.
	SC.6.L.14.Su.1 Identify the major internal organs of animals and external structures of plants and their functions.

	SC.6.L.14.Pa.1 Recognize that the human body is made up of various parts.
SC.6.L.14.2	Investigate and explain the components of the scientific theory of cells (cell theory): all organisms are composed of cells (single-celled or multi-cellular), all cells come from pre-existing cells, and cells are the basic unit of life. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.L.14.Pa.1 Recognize that the human body is made up of various parts.
	SC.6.L.14.In.2 Identify that the cell is the smallest basic unit of life and most living things are composed of many cells.
	SC.6.L.14.Su.2 Recognize that there are smaller parts in all living things, too small to be seen without magnification, called cells.
SC.6.L.14.3	Recognize and explore how cells of all organisms undergo similar processes to maintain homeostasis, including extracting energy from food, getting rid of waste, and reproducing. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.L.14.Pa.2 Identify basic needs of plants and animals.
	SC.6.L.14.In.3 Identify that cells carry out important functions within an organism, such as using energy from food.
	SC.6.L.14.Su.3 Recognize that animals, including humans, use energy from food.
SC.6.L.14.4	Compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.L.14.Su.2 Recognize that there are smaller parts in all living things, too small to be seen without magnification, called cells.
	SC.6.L.14.Pa.2 Identify basic needs of plants and animals.
	SC.6.L.14.In.4 Recognize that plant and animal cells have different parts and each part has a function.
SC.6.L.14.5	Identify and investigate the general functions of the major systems of the human body (digestive, respiratory, circulatory, reproductive, excretory, immune, nervous, and musculoskeletal) and describe ways these systems interact with each other to maintain homeostasis. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.L.14.In.1 Identify how the major structures of plants and organs of animals work as parts of larger systems, such as the heart is part of the circulatory system that pumps blood.
	SC.6.L.14.Su.1 Identify the major internal organs of animals and external structures of plants and their functions.
	SC.6.L.14.Pa.3 Recognize body parts related to basic needs, such as mouth for eating.
SC.6.L.14.6	Compare and contrast types of infectious agents that may infect the human body, including viruses, bacteria, fungi, and parasites.

	Content Complexity: Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.L.14.Su.4 Identify ways to prevent infection from bacteria and viruses, such as hand washing.
	SC.6.L.14.Pa.4 Recognize practices that keep the body free from infection, such as hand washing.
	SC.6.L.14.In.5 Recognize that bacteria and viruses can infect the human body.

Big Idea 15: Diversity and Evolution of Living Organisms

A. The scientific theory of evolution is the organizing principle of life science.

B. The scientific theory of evolution is supported by multiple forms of evidence.

C. Natural Selection is a primary mechanism leading to change over time in organisms.

BENCHMARK CODE	BENCHMARK
SC.6.L.15.1	Analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.L.15.In.1 Classify animals into major groups, such as insects, fish, reptiles, mammals, and birds.
	SC.6.L.15.Su.1 Sort common animals by their physical characteristics.
	SC.6.L.15.Pa.1 Match animals based on a given shared characteristic.

Body of Knowledge: PHYSICAL SCIENCE

Big Idea 11: Energy Transfer and Transformations

A. Waves involve a transfer of energy without a transfer of matter.

B. Water and sound waves transfer energy through a material.

C. Light waves can travel through a vacuum and through matter.

D. The Law of Conservation of Energy: Energy is conserved as it transfers from one object to another and from one form to another.

BENCHMARK CODE	BENCHMARK
SC.6.P.11.1	Explore the Law of Conservation of Energy by differentiating between potential and kinetic energy. Identify situations where kinetic energy is transformed into potential energy and vice versa. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.P.11.In.1 Identify energy as stored (potential) or expressed in motion (kinetic).
	SC.6.P.11.Su.1 Recognize examples of stored energy, such as in a roller coaster.

	SC.6.P.11.Pa.1 Distinguish between objects in motion (kinetic energy) and at rest.

Big Idea 12: Motion of Objects

A. Motion is a key characteristic of all matter that can be observed, described, and measured.

B. The motion of objects can be changed by forces.

BENCHMARK CODE	BENCHMARK
SC.6.P.12.1	Measure and graph distance versus time for an object moving at a constant speed. Interpret this relationship. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.P.12.In.1 Identify that speed describes the distance and time in which an object is moving, such as miles per hour.
	SC.6.P.12.Su.1 Recognize that speed describes how far an object travels in a given amount of time.
	SC.6.P.12.Pa.1 Recognize that traveling longer distances takes more time, such as going to the cafeteria takes longer than going across the classroom.

Big Idea 13: Forces and Changes in Motion

A. It takes energy to change the motion of objects.

B. Energy change is understood in terms of forces--pushes or pulls.

C. Some forces act through physical contact, while others act at a distance.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A, B, and C.

Clarification for grades 6-8: The target understanding for students in grades 6-8 should begin to transition the focus to a more specific definition of forces and changes in motion. Net forces create a change in motion. A change in momentum occurs when a net force is applied to an object over a time interval.

Grades 9-12, Standard 12: Motion - A. Motion can be measured and described qualitatively and quantitatively. Net forces create a change in motion. B. Momentum is conserved under well-defined conditions. A change in momentum occurs when a net force is applied to an object over a time interval.

BENCHMARK CODE	BENCHMARK
SC.6.P.13.1	Investigate and describe types of forces including contact forces and forces acting at a distance, such as electrical, magnetic, and gravitational. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.P.13.In.1 Identify examples of gravitational and contact forces, such as falling objects or push and pull.

	SC.6.P.13.Su.1 Distinguish between pushing and pulling forces (contact) and falling (gravitational force) of an object.
	SC.6.P.13.Pa.1 Recognize that pushing or pulling makes an object move (contact force).
SC.6.P.13.2	Explore the Law of Gravity by recognizing that every object exerts gravitational force on every other object and that the force depends on how much mass the objects have and how far apart they are. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.6.P.13.In.1 Identify examples of gravitational and contact forces, such as falling objects or push and pull.
	SC.6.P.13.Su.1 Distinguish between pushing and pulling forces (contact) and falling (gravitational force) of an object.
	SC.6.P.13.Pa.1 Recognize that pushing or pulling makes an object move (contact force).
	SC.6.P.13.Pa.2 Recognize that objects fall unless supported by something.
SC.6.P.13.3	Investigate and describe that an unbalanced force acting on an object changes its speed, or direction of motion, or both. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.P.13.In.2 Demonstrate and describe how forces can change the speed and direction of objects in motion.
	SC.6.P.13.Su.2 Recognize that force can change the speed and direction of an object in motion.
	SC.6.P.13.Pa.3 Recognize the speed (fast or slow) of a moving object.

Body of Knowledge: EARTH AND SPACE SCIENCE

Big Idea 6: Earth Structures

Over geologic time, internal and external sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's internal and external energy and material resources.

BENCHMARK CODE	BENCHMARK
SC.6.E.6.1	Describe and give examples of ways in which Earth's surface is built up and torn down by physical and chemical weathering, erosion, and deposition. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.E.6.In.1 Describe how weathering and erosion reshape the Earthâ€™s surface.
	SC.6.E.6.Su.1 Recognize that wind and water cause physical weathering and erosion.
	SC.6.E.6.Pa.1 Recognize that water can move soil.
SC.6.E.6.2	Recognize that there are a variety of different landforms on Earth's surface such as coastlines, dunes, rivers, mountains, glaciers, deltas, and lakes and relate these landforms as they apply to Florida. *Content Complexity:* Level 2: Basic Application of Skills & Concepts

	Related Access Point(s)
	SC.6.E.6.In.2 Identify various landforms in Florida, including coastlines, rivers, lakes, and dunes.
	SC.6.E.6.Su.2 Recognize different landforms in Florida, including beaches (coastlines), rivers, and lakes.
	SC.6.E.6.Pa.2 Recognize a landform in Florida, such as a beach (coastline), river, or lake.

Big Idea 7: Earth Systems and Patterns

The scientific theory of the evolution of Earth states that changes in our planet are driven by the flow of energy and the cycling of matter through dynamic interactions among the atmosphere, hydrosphere, cryosphere, geosphere, and biosphere, and the resources used to sustain human civilization on Earth.

BENCHMARK CODE	BENCHMARK
SC.6.E.7.1	Differentiate among radiation, conduction, and convection, the three mechanisms by which heat is transferred through Earth's system. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.E.7.In.1 Recognize that heat is a flow of energy that moves through Earthâ€™s land, air, and water in different ways, including conduction, convection, and radiation.
	SC.6.E.7.Su.1 Recognize that heat can transfer from the Sun to the water, land, and air. Recognize that heat can transfer from the Sun to the water, land, and air.
	SC.6.E.7.Pa.1 Recognize that the Sun is a source of heat.
SC.6.E.7.2	Investigate and apply how the cycling of water between the atmosphere and hydrosphere has an effect on weather patterns and climate. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.E.7.In.2 Identify components in the water cycle, including evaporation, condensation, precipitation, ground water, and runoff.
	SC.6.E.7.Su.2 Recognize parts of the water cycle such as clouds (condensation), rain (precipitation), and evaporation.
	SC.6.E.7.Pa.2 Recognize that rain comes from clouds.
SC.6.E.7.3	Describe how global patterns such as the jet stream and ocean currents influence local weather in measurable terms such as temperature, air pressure, wind direction and speed, and humidity and precipitation. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.E.7.In.3 Identify the way elements of weather are measured, including temperature, humidity, wind speed and direction, and precipitation.
	SC.6.E.7.Su.3 Recognize the way temperature and wind speed are measured.
	SC.6.E.7.Pa.3 Recognize different types of weather conditions, including hot/cold, raining/not raining, and windy/calm.
SC.6.E.7.4	Differentiate and show interactions among the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere.

	Content Complexity: Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.E.7.In.4 Recognize that Earth consists of different parts, including air that is over the Earth (atmosphere), water that covers much of the Earth (hydrosphere), and the parts that support all living things on Earth (biosphere).
	SC.6.E.7.Su.4 Recognize where living things are found (biosphere) and where the air is found (atmosphere) on Earth.
	SC.6.E.7.Pa.4 Recognize that air covers Earth (atmosphere).
SC.6.E.7.5	Explain how energy provided by the sun influences global patterns of atmospheric movement and the temperature differences between air, water, and land. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.E.7.Pa.3 Recognize different types of weather conditions, including hot/cold, raining/not raining, and windy/calm.
	SC.6.E.7.In.5 Recognize that there are general patterns of weather that move around Earth, and in North America the patterns typically move from west to east.
	SC.6.E.7.Su.5 Recognize that there are patterns of weather that move.
SC.6.E.7.6	Differentiate between weather and climate. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.E.7.Pa.3 Recognize different types of weather conditions, including hot/cold, raining/not raining, and windy/calm.
	SC.6.E.7.In.6 Identify climate as the expected weather patterns in a region.
	SC.6.E.7.Su.6 Identify the major characteristics of climate in Florida, including temperature and precipitation.
SC.6.E.7.7	Investigate how natural disasters have affected human life in Florida. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.E.7.Pa.5 Recognize where to go in severe weather situations or drills at school and at home.
	SC.6.E.7.In.7 Identify possible effects of hurricanes and other natural disasters on humans in Florida.
	SC.6.E.7.Su.7 Recognize possible effects of severe storms, hurricanes, or other natural disasters in Florida.
SC.6.E.7.8	Describe ways human beings protect themselves from hazardous weather and sun exposure. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.E.7.Pa.5 Recognize where to go in severe weather situations or drills at school and at home.
	SC.6.E.7.In.8 Identify ways humans get ready for severe storms and protect themselves from sun exposure.

	SC.6.E.7.Su.8 Recognize ways people prepare for severe storms and protect themselves from sun exposure.
SC.6.E.7.9	Describe how the composition and structure of the atmosphere protects life and insulates the planet. *Content Complexity:* Level 2: Basic Application of Skills & Concepts

Related Access Point(s)
SC.6.E.7.Pa.4 Recognize that air covers Earth (atmosphere).
SC.6.E.7.In.9 Identify that the atmosphere protects Earth from radiation from the Sun and regulates the temperature.
SC.6.E.7.Su.9 Recognize that the air that surrounds Earth (atmosphere) protects living things from the intense heat of the Sun.

Body of Knowledge: NATURE OF SCIENCE

Big Idea 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.6.N.1.1	Define a problem from the sixth grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

Related Access Point(s)
SC.6.N.1.In.1 Identify a problem from the sixth grade curriculum, use reference materials to gather information, carry out an experiment, collect and record data, and report results.
SC.6.N.1.Su.1 Recognize a problem from the sixth grade curriculum, use materials to gather information, carry out a simple experiment, and record and share results.
SC.6.N.1.Pa.1 Recognize a problem related to the sixth grade curriculum, observe and explore objects or activities, and recognize a solution.

SC.6.N.1.2	Explain why scientific investigations should be replicable. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

	Related Access Point(s)
	SC.6.N.1.In.2 Identify that scientific investigations can be repeated the same way by others.
	SC.6.N.1.Su.2 Recognize that experiments involve procedures that can be repeated the same way by others.
	SC.6.N.1.Pa.2 Recognize that when a common activity is repeated, it has the same result.
SC.6.N.1.3	Explain the difference between an experiment and other types of scientific investigation, and explain the relative benefits and limitations of each. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.N.1.In.3 Identify that scientists can use different kinds of experiments, methods, and explanations to find answers to scientific questions.
	SC.6.N.1.Su.3 Recognize that scientists perform experiments, make observations, and gather evidence to answer scientific questions.
	SC.6.N.1.Pa.3 Recognize that people conduct activities and share information about science.
SC.6.N.1.4	Discuss, compare, and negotiate methods used, results obtained, and explanations among groups of students conducting the same investigation. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.6.N.1.In.3 Identify that scientists can use different kinds of experiments, methods, and explanations to find answers to scientific questions.
	SC.6.N.1.Su.3 Recognize that scientists perform experiments, make observations, and gather evidence to answer scientific questions.
	SC.6.N.1.Pa.3 Recognize that people conduct activities and share information about science.
SC.6.N.1.5	Recognize that science involves creativity, not just in designing experiments, but also in creating explanations that fit evidence. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.N.1.Pa.3 Recognize that people conduct activities and share information about science.
	SC.6.N.1.In.4 Compare results of observations and experiments of self and others.
	SC.6.N.1.Su.4 Identify information based on observations and experiments of self and others.

Big Idea 2: The Characteristics of Scientific Knowledge

A: Scientific knowledge is based on empirical evidence, and is appropriate for understanding the natural world, but it provides only a limited understanding of the supernatural, aesthetic, or other ways of knowing, such as art, philosophy, or religion.

B: Scientific knowledge is durable and robust, but open to change.

C: Because science is based on empirical evidence it strives for objectivity, but as it is a human endeavor the processes, methods, and knowledge of science include subjectivity, as well as creativity and discovery.

BENCHMARK CODE	BENCHMARK
SC.6.N.2.1	Distinguish science from other activities involving thought. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.N.2.In.1 Identify familiar topics included in the study of science.
	SC.6.N.2.Su.1 Recognize familiar topics in the study of science.
	SC.6.N.2.Pa.1 Recognize objects and pictures related to science.
SC.6.N.2.2	Explain that scientific knowledge is durable because it is open to change as new evidence or interpretations are encountered. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.N.2.Pa.1 Recognize objects and pictures related to science.
	SC.6.N.2.In.2 Identify that scientific knowledge changes with new evidence or new interpretations.
	SC.6.N.2.Su.2 Recognize that scientific knowledge changes when new things are discovered.
SC.6.N.2.3	Recognize that scientists who make contributions to scientific knowledge come from all kinds of backgrounds and possess varied talents, interests, and goals. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.6.N.2.Pa.2 Recognize a scientist as a person who works with science.
	SC.6.N.2.Su.3 Recognize contributions of well-known scientists.

Big Idea 3: The Role of Theories, Laws, Hypotheses, and Models

The terms that describe examples of scientific knowledge, for example; "theory," "law," "hypothesis," and "model" have very specific meanings and functions within science.

BENCHMARK CODE	BENCHMARK
SC.6.N.3.1	Recognize and explain that a scientific theory is a well-supported and widely accepted explanation of nature and is not simply a claim posed by an individual. Thus, the use of the term theory in science is very different than how it is used in everyday life. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.N.3.In.1 Identify that a scientific theory is an explanation of nature supported by evidence.
	SC.6.N.3.Su.1 Recognize that a scientific theory is an explanation of nature.
	SC.6.N.3.Pa.1 Observe and recognize a predictable cause-effect relationship related to a science topic.
SC.6.N.3.2	Recognize and explain that a scientific law is a description of a specific relationship under given conditions in the natural world. Thus, scientific laws are different from societal laws. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)

	SC.6.N.3.Pa.1 Observe and recognize a predictable cause-effect relationship related to a science topic.
	SC.6.N.3.In.2 Identify examples of scientific laws (proven descriptions of nature), such as the law of gravity.
	SC.6.N.3.Su.2 Recognize events that are based on scientific laws, such as the law of gravity.
SC.6.N.3.3	Give several examples of scientific laws. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.6.N.3.Pa.1 Observe and recognize a predictable cause-effect relationship related to a science topic.
	SC.6.N.3.In.2 Identify examples of scientific laws (proven descriptions of nature), such as the law of gravity.
	SC.6.N.3.Su.2 Recognize events that are based on scientific laws, such as the law of gravity.
SC.6.N.3.4	Identify the role of models in the context of the sixth grade science benchmarks. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.6.N.3.Pa.2 Associate a model with an activity used in the context of sixth grade science access points.
	SC.6.N.3.In.3 Identify models used in the context of sixth grade science access points.
	SC.6.N.3.Su.3 Recognize models used in the context of sixth grade science access points.

GRADE: 7

Body of Knowledge: LIFE SCIENCE	
Big Idea 15: Diversity and Evolution of Living Organisms A. The scientific theory of evolution is the organizing principle of life science. B. The scientific theory of evolution is supported by multiple forms of evidence. C. Natural Selection is a primary mechanism leading to change over time in organisms.	
BENCHMARK CODE	**BENCHMARK**
SC.7.L.15.1	Recognize that fossil evidence is consistent with the scientific theory of evolution that living things evolved from earlier species. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.L.15.In.1 Recognize that fossils help people learn about living things that lived a very long time ago.
	SC.7.L.15.Su.1 Identify fossils as parts of animals and plants that are no longer alive.
	SC.7.L.15.Pa.1 Recognize that living things can die.

SC.7.L.15.2	Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.L.15.In.2 Recognize that physical characteristics of living things are adapted to deal with the conditions of the environment, such as skin color or gills on a fish.
	SC.7.L.15.Su.2 Recognize that common plants or animals have special features that enable them to live in their environment, such as a as a fish has gills so it can live underwater.
	SC.7.L.15.Pa.2 Recognize a personal characteristic, such as hair color, that is different from the parents.
SC.7.L.15.3	Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.L.15.Pa.1 Recognize that living things can die.
	SC.7.L.15.In.3 Explain extinction and give examples.
	SC.7.L.15.Su.3 Recognize that some plants and animals no longer exist (are extinct).

Big Idea 16: Heredity and Reproduction

A. Reproduction is characteristic of living things and is essential for the survival of species.

B. Genetic information is passed from generation to generation by DNA; DNA controls the traits of an organism.

C. Changes in the DNA of an organism can cause changes in traits, and manipulation of DNA in organisms has led to genetically modified organisms.

BENCHMARK CODE	BENCHMARK
SC.7.L.16.1	Understand and explain that every organism requires a set of instructions that specifies its traits, that this hereditary information (DNA) contains genes located in the chromosomes of each cell, and that heredity is the passage of these instructions from one generation to another. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.L.16.In.1 Explain that some characteristics are passed from parent to child (inherited).
	SC.7.L.16.Su.1 Recognize that offspring have similar characteristics to parents.
	SC.7.L.16.Pa.1 Recognize a characteristic passed from parents to self, such as eye color.
SC.7.L.16.2	Determine the probabilities for genotype and phenotype combinations using Punnett Squares and pedigrees. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.L.16.Pa.1 Recognize a characteristic passed from parents to self, such as eye color.

	SC.7.L.16.In.2 Recognize that it is possible to predict whether a person is likely to inherit a particular trait from parents.
	SC.7.L.16.Su.2 Recognize that animals, including humans, inherit some characteristics from one parent and some from the other.
SC.7.L.16.3	Compare and contrast the general processes of sexual reproduction requiring meiosis and asexual reproduction requiring mitosis. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.L.16.Su.2 Recognize that animals, including humans, inherit some characteristics from one parent and some from the other.
	SC.7.L.16.Pa.2 Recognize that children are born from two parents.
	SC.7.L.16.In.3 Explain that offspring receive half their genes from each parent in sexual reproduction.
SC.7.L.16.4	Recognize and explore the impact of biotechnology (cloning, genetic engineering, artificial selection) on the individual, society and the environment. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.L.16.Su.3 Recognize that science (biotechnology) has been used to develop new products for use in daily life.
	SC.7.L.16.Pa.3 Recognize common products, such as medicine, developed through science.
	SC.7.L.16.In.4 Recognize that science processes (biotechnology) have been used to develop new foods and medicines.

Big Idea 17: Interdependence

A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.

B. Both human activities and natural events can have major impacts on the environment.

C. Energy flows from the sun through producers to consumers.

BENCHMARK CODE	BENCHMARK
SC.7.L.17.1	Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.L.17.In.1 Identify that in a simple food chain, energy transfers from the Sun to plants (producers), to animals (consumers), and to organisms that cause decay (decomposers).
	SC.7.L.17.Su.1 Identify different types of consumers in a food chain, including animals that eat plants, animals that eat other animals, and animals that eat plants and animals.
	SC.7.L.17.Pa.1 Recognize that humans eat vegetables and fruits (plants) and meat (animals).
SC.7.L.17.2	Compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.

	Content Complexity: Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.L.17.In.2 Describe how organisms interact with other organisms in an ecosystem to help each other (mutualism), to obtain food (predation), and to benefit at the expense of the other (parasitism).
	SC.7.L.17.Su.2 Recognize how living things affect each other in their habitat (ecosystem).
	SC.7.L.17.Pa.2 Recognize a mutual relationship between people and other living things.
SC.7.L.17.3	Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.L.17.In.3 Recognize that living things compete with each other to get the things they need to live in their local environment.
	SC.7.L.17.Su.3 Identify how a lack of food, water, or shelter affects plants and animals in their habitats.
	SC.7.L.17.Pa.3 Recognize what happens when animals donâ€™t get food and water.

Body of Knowledge: PHYSICAL SCIENCE

Big Idea 10: Forms of Energy

A. Energy is involved in all physical processes and is a unifying concept in many areas of science.

B. Energy exists in many forms and has the ability to do work or cause a change.

BENCHMARK CODE	BENCHMARK
SC.7.P.10.1	Illustrate that the sun's energy arrives as radiation with a wide range of wavelengths, including infrared, visible, and ultraviolet, and that white light is made up of a spectrum of many different colors. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.7.P.10.In.1 Identify that white (visible) light has many colors, such as when viewed with a prism.
	SC.7.P.10.Su.1 Recognize that white (visible) light contains many colors, such as viewed with a prism or rainbow.
	SC.7.P.10.Pa.1 Recognize primary colors of a rainbow.
SC.7.P.10.2	Observe and explain that light can be reflected, refracted, and/or absorbed. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.P.10.In.2 Recognize that light can be reflected or absorbed.
	SC.7.P.10.Su.2 Recognize that light can be reflected.
	SC.7.P.10.Pa.2 Recognize reflections of objects.

SC.7.P.10.3	Recognize that light waves, sound waves, and other waves move at different speeds in different materials. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.7.P.10.In.3 Identify that light and sound travel in wave patterns.
	SC.7.P.10.Su.3 Recognize that sound and light travel.
	SC.7.P.10.Pa.3 Match light and sound to their sources.

Big Idea 11: Energy Transfer and Transformations

A. Waves involve a transfer of energy without a transfer of matter.

B. Water and sound waves transfer energy through a material.

C. Light waves can travel through a vacuum and through matter.

D. The Law of Conservation of Energy: Energy is conserved as it transfers from one object to another and from one form to another.

BENCHMARK CODE	BENCHMARK
SC.7.P.11.1	Recognize that adding heat to or removing heat from a system may result in a temperature change and possibly a change of state. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.7.P.11.In.1 Identify that when heat is added or taken away, a temperature change occurs.
	SC.7.P.11.Su.1 Recognize what happens to the temperature when heat is added.
	SC.7.P.11.Pa.1 Recognize that a hot object can make a cold object warm when they touch.
SC.7.P.11.2	Investigate and describe the transformation of energy from one form to another. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.P.11.In.2 Recognize that one form of energy can change to other forms of energy, such as solar panels change light into electricity.
	SC.7.P.11.Su.2 Recognize that energy can change forms, such as electricity produces light and heat in a lamp.
	SC.7.P.11.Pa.2 Recognize that electrical devices need energy to work.
SC.7.P.11.3	Cite evidence to explain that energy cannot be created nor destroyed, only changed from one form to another. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.P.11.In.2 Recognize that one form of energy can change to other forms of energy, such as solar panels change light into electricity.
	SC.7.P.11.Su.2 Recognize that energy can change forms, such as electricity produces light and heat in a lamp.

	SC.7.P.11.Pa.2 Recognize that electrical devices need energy to work.
SC.7.P.11.4	Observe and describe that heat flows in predictable ways, moving from warmer objects to cooler ones until they reach the same temperature. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.P.11.Pa.1 Recognize that a hot object can make a cold object warm when they touch.
	SC.7.P.11.In.3 Identify examples of the predictable movement of heat, such as hot air rises and heat transfers from hot to cold objects.
	SC.7.P.11.Su.3 Identify that heat rises.

Body of Knowledge: EARTH AND SPACE SCIENCE

Big Idea 6: Earth Structures

Over geologic time, internal and external sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's internal and external energy and material resources.

BENCHMARK CODE	BENCHMARK
SC.7.E.6.1	Describe the layers of the solid Earth, including the lithosphere, the hot convecting mantle, and the dense metallic liquid and solid cores. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.E.6.In.1 Identify that Earth has three layers (crust, mantle, and core) and describe the inside (core) as the hottest layer.
	SC.7.E.6.Su.1 Recognize that the surface of Earth is called the crust.
	SC.7.E.6.Pa.1 Recognize the ground as the outer surface (crust) of Earth.
SC.7.E.6.2	Identify the patterns within the rock cycle and relate them to surface events (weathering and erosion) and sub-surface events (plate tectonics and mountain building). *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.E.6.In.2 Recognize that slow changes, such as mountain-building, and fast changes, such as volcanic eruptions, are caused by shifts below Earthâ€™s surface.
	SC.7.E.6.Su.2 Recognize that mountains change size and shape over a long period of time.
	SC.7.E.6.Pa.2 Discriminate between surface features of ground on Earth, such as rocky/sandy, flat/hilly, rough/smooth, or solid/liquid.
SC.7.E.6.3	Identify current methods for measuring the age of Earth and its parts, including the law of superposition and radioactive dating. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.E.6.Su.2 Recognize that mountains change size and shape over a long period of time.
	SC.7.E.6.In.3 Demonstrate how older rock layers are deposited at the bottom before younger layers (Law of Superposition).

	SC.7.E.6.Pa.3 Recognize that ground on the Earthâ€™s surface changes over time.
SC.7.E.6.4	Explain and give examples of how physical evidence supports scientific theories that Earth has evolved over geologic time due to natural processes. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.E.6.Pa.3 Recognize that ground on the Earthâ€™s surface changes over time.
	SC.7.E.6.Su.3 Recognize that fossils are remains or imprints of living things from long ago.
	SC.7.E.6.In.4 Identify physical evidence, such as fossils and sedimentary rock, which show how Earth has changed over a very long period of time.
SC.7.E.6.5	Explore the scientific theory of plate tectonics by describing how the movement of Earth's crustal plates causes both slow and rapid changes in Earth's surface, including volcanic eruptions, earthquakes, and mountain building. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.E.6.In.2 Recognize that slow changes, such as mountain-building, and fast changes, such as volcanic eruptions, are caused by shifts below Earthâ€™s surface.
	SC.7.E.6.Pa.2 Discriminate between surface features of ground on Earth, such as rocky/sandy, flat/hilly, rough/smooth, or solid/liquid.
	SC.7.E.6.Su.4 Recognize the effects of earthquakes and volcanoes.
SC.7.E.6.6	Identify the impact that humans have had on Earth, such as deforestation, urbanization, desertification, erosion, air and water quality, changing the flow of water. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.E.6.Pa.3 Recognize that ground on the Earthâ€™s surface changes over time.
	SC.7.E.6.In.5 Recognize that humans have had an impact on Earth, such as polluting the air and water and expanding urban areas and road systems.
	SC.7.E.6.Su.5 Recognize that polluting the air and water can harm Earth.
SC.7.E.6.7	Recognize that heat flow and movement of material within Earth causes earthquakes and volcanic eruptions, and creates mountains and ocean basins. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.E.6.In.4 Identify physical evidence, such as fossils and sedimentary rock, which show how Earth has changed over a very long period of time.
	SC.7.E.6.Su.4 Recognize the effects of earthquakes and volcanoes.
	SC.7.E.6.Pa.4 Distinguish between clean and dirty water.

Body of Knowledge: NATURE OF SCIENCE

Big Idea 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.7.N.1.1	Define a problem from the seventh grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.N.1.In.1 Identify a problem from the seventh grade curriculum, use reference materials to gather information, carry out an experiment, collect and record data, and report results.
	SC.7.N.1.Su.1 Recognize a problem from the seventh grade curriculum, use materials to gather information, conduct a simple experiment, and record and share results.
	SC.7.N.1.Pa.1 Recognize a problem related to the seventh grade curriculum, observe and explore objects and activities, and recognize a solution.
SC.7.N.1.2	Differentiate replication (by others) from repetition (multiple trials). *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.N.1.In.2 Recognize the relationship between the end product (dependent variable) and in the input (independent variable) in an experiment.
	SC.7.N.1.Su.2 Recognize what is tested in a simple experiment (dependent variable).
	SC.7.N.1.Pa.2 Recognize observable changes in a simple experiment, such as plant growth.
SC.7.N.1.3	Distinguish between an experiment (which must involve the identification and control of variables) and other forms of scientific investigation and explain that not all scientific knowledge is derived from experimentation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.N.1.In.3 Identify questions that can be answered by scientific investigation, such as can a plant grow without sunlight?
	SC.7.N.1.Su.3 Recognize a question that can be answered by scientific investigation, such as can a plant grow without sunlight?
	SC.7.N.1.Pa.3 Associate objects and activities with science.

SC.7.N.1.4	Identify test variables (independent variables) and outcome variables (dependent variables) in an experiment. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.7.N.1.In.2 Recognize the relationship between the end product (dependent variable) and in the input (independent variable) in an experiment.
	SC.7.N.1.Su.2 Recognize what is tested in a simple experiment (dependent variable).
	SC.7.N.1.Pa.2 Recognize observable changes in a simple experiment, such as plant growth.
SC.7.N.1.5	Describe the methods used in the pursuit of a scientific explanation as seen in different fields of science such as biology, geology, and physics. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.N.1.Pa.3 Associate objects and activities with science.
	SC.7.N.1.In.4 Identify ways that science can be used to study different areas, such as life science, earth and space science, and physical science.
	SC.7.N.1.Su.4 Recognize that science includes different areas, such as life science, earth and space science, and physical science.
SC.7.N.1.6	Explain that empirical evidence is the cumulative body of observations of a natural phenomenon on which scientific explanations are based. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.N.1.Pa.3 Associate objects and activities with science.
	SC.7.N.1.In.5 Identify that scientific knowledge is based on a large body of evidence and observations.
	SC.7.N.1.Su.5 Recognize that scientific knowledge is based on evidence and observations.
SC.7.N.1.7	Explain that scientific knowledge is the result of a great deal of debate and confirmation within the science community. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.N.1.In.3 Identify questions that can be answered by scientific investigation, such as can a plant grow without sunlight?
	SC.7.N.1.Su.3 Recognize a question that can be answered by scientific investigation, such as can a plant grow without sunlight?
	SC.7.N.1.Pa.3 Associate objects and activities with science.

Big Idea 2: The Characteristics of Scientific Knowledge

A: Scientific knowledge is based on empirical evidence, and is appropriate for understanding the natural world, but it provides only a limited understanding of the supernatural, aesthetic, or other ways of knowing, such as art, philosophy, or religion.

B: Scientific knowledge is durable and robust, but open to change.

C: Because science is based on empirical evidence it strives for objectivity, but as it is a human endeavor the processes, methods, and knowledge of science include subjectivity, as well as creativity and discovery.

BENCHMARK CODE	BENCHMARK
SC.7.N.2.1	Identify an instance from the history of science in which scientific knowledge has changed when new evidence or new interpretations are encountered. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.7.N.2.In.1 Identify an example of a change in scientific knowledge based on new evidence or new interpretations.
	SC.7.N.2.Su.1 Recognize an example of a change in scientific knowledge based on new evidence.
	SC.7.N.2.Pa.1 Recognize information related to science.

Big Idea 3: The Role of Theories, Laws, Hypotheses, and Models

The terms that describe examples of scientific knowledge, for example; "theory," "law," "hypothesis," and "model" have very specific meanings and functions within science.

BENCHMARK CODE	BENCHMARK
SC.7.N.3.1	Recognize and explain the difference between theories and laws and give several examples of scientific theories and the evidence that supports them. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.7.N.3.In.1 Identify that scientific theories are explanations and laws describe relationships, and both are supported by evidence.
	SC.7.N.3.Su.1 Recognize that scientific theories and laws are supported by evidence.
	SC.7.N.3.Pa.1 Recognize that people use science to solve problems.
SC.7.N.3.2	Identify the benefits and limitations of the use of scientific models. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.7.N.3.In.2 Identify a benefit of using a model to explain how things work.
	SC.7.N.3.Su.2 Recognize a benefit of using a model to explain how things work.
	SC.7.N.3.Pa.2 Recognize a model of a common activity.

GRADE: 8

Body of Knowledge: LIFE SCIENCE

Big Idea 18: Matter and Energy Transformations

A. Living things all share basic needs for life.

B. Living organisms acquire the energy they need for life processes through various metabolic pathways (photosynthesis and cellular respiration).

C. Matter and energy are recycled through cycles such as the carbon cycle.

BENCHMARK CODE	BENCHMARK
SC.8.L.18.1	Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water and chlorophyll; production of food; release of oxygen. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.L.18.In.1 Identify structures in plants that enable them to use the energy from the Sun to make their own food through a process called photosynthesis.
	SC.8.L.18.Su.1 Recognize that plants make their own food through a process called photosynthesis.
	SC.8.L.18.Pa.1 Recognize that plants need water and light to grow.
SC.8.L.18.2	Describe and investigate how cellular respiration breaks down food to provide energy and releases carbon dioxide. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.L.18.In.2 Recognize that cells break down food to release energy.
	SC.8.L.18.Su.2 Recognize that plants and animals get energy from food.
	SC.8.L.18.Pa.2 Recognize that food provides energy.
SC.8.L.18.3	Construct a scientific model of the carbon cycle to show how matter and energy are continuously transferred within and between organisms and their physical environment. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.L.18.Pa.2 Recognize that food provides energy.
	SC.8.L.18.In.3 Illustrate a model that shows how carbon is cycled between plants and animals.
	SC.8.L.18.Su.3 Recognize that plants use the carbon dioxide that animals breathe out.
SC.8.L.18.4	Cite evidence that living systems follow the Laws of Conservation of Mass and Energy. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.L.18.Pa.2 Recognize that food provides energy.
	SC.8.L.18.In.4 Identify the flow of energy from the Sun as it is transferred along a food chain.
	SC.8.L.18.Su.4 Recognize that plants get energy from the Sun and that energy is transferred to the animals that eat the plants.

Body of Knowledge: PHYSICAL SCIENCE

Big Idea 8: Properties of Matter

A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass which gives it inertia.

B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.

The concepts of mass and weight are complicated and potentially confusing to elementary students. Hence, the more familiar term of "weight" is recommended for use to stand for both mass and weight in grades K-5. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.

Clarification for grades K-2: The use of the more familiar term â€˜weightâ€™ instead of the term â€œmassâ€• is recommended for grades K-2.

Clarification for grades 3-5: In grade 3, introduce the term mass as compared to the term weight. In grade 4, investigate the concept of weight versus mass of objects. In grade 5, discuss why mass (not weight) is used to compare properties of solids, liquids and gases.

BENCHMARK CODE	BENCHMARK
SC.8.P.8.1	Explore the scientific theory of atoms (also known as atomic theory) by using models to explain the motion of particles in solids, liquids, and gases. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.P.8.In.1 Compare properties of solids, liquids, and gases.
	SC.8.P.8.Su.1 Recognize three states of matter, including solids, liquids, and gases.
	SC.8.P.8.Pa.1 Recognize examples of the gaseous state of matter, such as steam or smoke.
SC.8.P.8.2	Differentiate between weight and mass recognizing that weight is the amount of gravitational pull on an object and is distinct from, though proportional to, mass. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.P.8.In.2 Recognize that the weight of an object is related to the pull of gravity.
	SC.8.P.8.Su.2 Compare the weight of different sized objects.
	SC.8.P.8.Pa.2 Recognize the heavier of two objects.
SC.8.P.8.3	Explore and describe the densities of various materials through measurement of their masses and volumes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.P.8.Pa.1 Recognize examples of the gaseous state of matter, such as steam or smoke.
	SC.8.P.8.In.3 Observe and compare the density of various materials.
	SC.8.P.8.Su.3 Recognize that smaller objects can weigh more than bigger objects because of density.
SC.8.P.8.4	Classify and compare substances on the basis of characteristic physical properties that can be demonstrated or measured; for example, density, thermal or electrical conductivity, solubility, magnetic properties, melting and boiling points, and know that

	these properties are independent of the amount of the sample. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.P.8.Pa.3 Recognize substances by physical properties, such as weight (heavy and light), size (big and small), and temperature (hot and cold).
	SC.8.P.8.In.4 Observe and compare substances based on their physical properties, such as thermal and electrical conductivity, solubility, or magnetic properties.
	SC.8.P.8.Su.4 Observe and compare substances by physical properties, such as weight, size, boiling and melting points, and magnetic properties.
SC.8.P.8.5	Recognize that there are a finite number of elements and that their atoms combine in a multitude of ways to produce compounds that make up all of the living and nonliving things that we encounter. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.8.P.8.In.5 Recognize that common elements combine in different ways to make up all living and nonliving things.
	SC.8.P.8.Su.5 Recognize that parts of matter can be separated in tiny particles.
	SC.8.P.8.Pa.5 Separate a mixture into its parts.
SC.8.P.8.6	Recognize that elements are grouped in the periodic table according to similarities of their properties. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.8.P.8.Pa.5 Separate a mixture into its parts.
	SC.8.P.8.In.6 Identify common elements, such as oxygen, iron, and carbon.
	SC.8.P.8.Su.6 Recognize examples of common elements, such as carbon or iron.
SC.8.P.8.7	Explore the scientific theory of atoms (also known as atomic theory) by recognizing that atoms are the smallest unit of an element and are composed of sub-atomic particles (electrons surrounding a nucleus containing protons and neutrons). *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.8.P.8.Su.5 Recognize that parts of matter can be separated in tiny particles.
	SC.8.P.8.Pa.5 Separate a mixture into its parts.
	SC.8.P.8.In.7 Identify that matter is made of small particles called atoms.
SC.8.P.8.8	Identify basic examples of and compare and classify the properties of compounds, including acids, bases, and salts. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.P.8.Pa.4 Recognize common acids as safe or harmful.
	SC.8.P.8.Su.7 Recognize common acids, such as vinegar, and bases, such as ammonia, and their hazardous properties.

	SC.8.P.8.In.8 Identify common acids, such as lemon juice and vinegar, and bases, such as baking soda and ammonia, and their hazardous properties.
SC.8.P.8.9	Distinguish among mixtures (including solutions) and pure substances. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.P.8.In.2 Recognize that the weight of an object is related to the pull of gravity.
	SC.8.P.8.Pa.5 Separate a mixture into its parts.
	SC.8.P.8.Su.8 Recognize examples of pure substances and mixtures.

Big Idea 9: Changes in Matter

A. Matter can undergo a variety of changes.

B. When matter is changed physically, generally no changes occur in the structure of the atoms or molecules composing the matter.

C. When matter changes chemically, a rearrangement of bonds between the atoms occurs. This results in new substances with new properties.

Clarification for grades K-5: The target understanding for students in the elementary grades should focus on Big Ideas A and B.

Clarification for Grades 6-8: The target understanding for students in the middle grades should begin to transition the focus to: C. When matter changes chemically, a rearrangement of bonds between the atoms occurs. This results in new substances with new properties.

BENCHMARK CODE	BENCHMARK
SC.8.P.9.1	Explore the Law of Conservation of Mass by demonstrating and concluding that mass is conserved when substances undergo physical and chemical changes. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.P.9.In.1 Observe and classify changes in matter as physical (reversible) or chemical (irreversible).
	SC.8.P.9.Su.1 Observe and recognize physical changes in matter as able to change back (reversible), such as water to ice, and chemical changes of matter as unable to change back (irreversible), such as cake to cake batter.
	SC.8.P.9.Pa.1 Recognize an example of a physical change, such as ice changing to water.
	SC.8.P.9.Pa.2 Recognize that heat influences changes (chemical) in matter, such as cooking.
SC.8.P.9.2	Differentiate between physical changes and chemical changes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.P.9.In.1 Observe and classify changes in matter as physical (reversible) or chemical (irreversible).

	SC.8.P.9.Su.1 Observe and recognize physical changes in matter as able to change back (reversible), such as water to ice, and chemical changes of matter as unable to change back (irreversible), such as cake to cake batter.
	SC.8.P.9.Pa.1 Recognize an example of a physical change, such as ice changing to water.
	SC.8.P.9.Pa.2 Recognize that heat influences changes (chemical) in matter, such as cooking.
SC.8.P.9.3	Investigate and describe how temperature influences chemical changes. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.P.9.In.2 Observe and identify how temperature influences chemical changes.
	SC.8.P.9.Su.2 Observe and recognize changes caused by heat on substances.
	SC.8.P.9.Pa.2 Recognize that heat influences changes (chemical) in matter, such as cooking.

Body of Knowledge: EARTH AND SPACE SCIENCE

Big Idea 5: Earth in Space and Time

The origin and eventual fate of the Universe still remains one of the greatest questions in science. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the planetary systems, and Earth. Humankindâ€™s need to explore continues to lead to the development of knowledge and understanding of the nature of the Universe.

BENCHMARK CODE	BENCHMARK
SC.8.E.5.1	Recognize that there are enormous distances between objects in space and apply our knowledge of light and space travel to understand this distance. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.E.5.In.1 Compare the distances of the Moon, the Sun, and other stars from the Earth.
	SC.8.E.5.Su.1 Identify the relative positions of the Sun and the Moon from Earth.
	SC.8.E.5.Pa.1 Recognize that the Moon is closer to Earth than the Sun.
SC.8.E.5.2	Recognize that the universe contains many billions of galaxies and that each galaxy contains many billions of stars. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.8.E.5.Pa.1 Recognize that the Moon is closer to Earth than the Sun.
	SC.8.E.5.In.2 Identify that the Earth and Sun are a part of the Milky Way galaxy.
	SC.8.E.5.Su.2 Recognize that the Solar System is part of a galaxy.
SC.8.E.5.3	Distinguish the hierarchical relationships between planets and other astronomical bodies relative to solar system, galaxy, and universe, including distance, size, and composition. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.E.5.Pa.1 Recognize that the Moon is closer to Earth than the Sun.

	SC.8.E.5.In.3 Identify Earthâ€™s position in the Solar System, and its size relative to the Moon and Sun.
	SC.8.E.5.Su.3 Identify that there are planets and moons in the Solar System.
SC.8.E.5.4	Explore the Law of Universal Gravitation by explaining the role that gravity plays in the formation of planets, stars, and solar systems and in determining their motions. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.E.5.Pa.1 Recognize that the Moon is closer to Earth than the Sun.
	SC.8.E.5.Su.3 Identify that there are planets and moons in the Solar System.
	SC.8.E.5.In.4 Identify gravity as the force that holds orbiting planets in place in the Solar System.
SC.8.E.5.5	Describe and classify specific physical properties of stars: apparent magnitude (brightness), temperature (color), size, and luminosity (absolute brightness). *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.E.5.Pa.2 Recognize the Sun and stars as objects in space.
	SC.8.E.5.Su.4 Recognize that the Sun is the closest star to Earth and appears large and bright.
	SC.8.E.5.In.5 Identify differences in physical properties of stars, such as brightness, color, and size.
SC.8.E.5.6	Create models of solar properties including: rotation, structure of the Sun, convection, sunspots, solar flares, and prominences. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.8.E.5.Pa.2 Recognize the Sun and stars as objects in space.
	SC.8.E.5.Su.5 Recognize that the Sun is made of gases that are on fire.
	SC.8.E.5.In.6 Describe the Sun as a mass of hot, burning gases that produces very high temperatures.
SC.8.E.5.7	Compare and contrast the properties of objects in the Solar System including the Sun, planets, and moons to those of Earth, such as gravitational force, distance from the Sun, speed, movement, temperature, and atmospheric conditions. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.E.5.Pa.2 Recognize the Sun and stars as objects in space.
	SC.8.E.5.Su.6 Recognize that conditions on other planets in the Solar System are different than those on Earth.
	SC.8.E.5.In.7 Compare conditions on other planets in the Solar System to those on Earth, such as gravity, temperature, and atmosphere.
SC.8.E.5.8	Compare various historical models of the Solar System, including geocentric and heliocentric. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)

	SC.8.E.5.Pa.1 Recognize that the Moon is closer to Earth than the Sun.
	SC.8.E.5.Su.3 Identify that there are planets and moons in the Solar System.
	SC.8.E.5.In.8 Identify that long ago people thought the Sun traveled around Earth (geocentric model) until scientists proved otherwise.
SC.8.E.5.9	Explain the impact of objects in space on each other including: 1. the Sun on the Earth including seasons and gravitational attraction 2. the Moon on the Earth, including phases, tides, and eclipses, and the relative position of each body. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.E.5.In.10 Recognize that the Moon's revolution around the Earth takes about thirty days.
	SC.8.E.5.Pa.3 Recognize the four seasons.
	SC.8.E.5.Su.7 Recognize that Earth revolves around the Sun creating the four seasons.
	SC.8.E.5.In.9 Recognize that the four seasons are related to Earthâ€™s position as it travels (revolves) around the Sun.
SC.8.E.5.10	Assess how technology is essential to science for such purposes as access to outer space and other remote locations, sample collection, measurement, data collection and storage, computation, and communication of information. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.E.5.In.11 Identify technology used by scientists to locate, view, and study objects in space.
	SC.8.E.5.Pa.4 Recognize a technology tool created for space exploration and adapted for personal use, such as computers, telescopes, or satellites.
	SC.8.E.5.Su.8 Recognize that scientists use special tools to examine objects in space.
SC.8.E.5.11	Identify and compare characteristics of the electromagnetic spectrum such as wavelength, frequency, use, and hazards and recognize its application to an understanding of planetary images and satellite photographs. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.E.5.In.12 Recognize that technology allows special cameras and satellites to take pictures of objects in space.
	SC.8.E.5.Pa.4 Recognize a technology tool created for space exploration and adapted for personal use, such as computers, telescopes, or satellites.
	SC.8.E.5.Su.8 Recognize that scientists use special tools to examine objects in space.
SC.8.E.5.12	Summarize the effects of space exploration on the economy and culture of Florida. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.E.5.In.13 Identify effects of space research and exploration on Floridaâ€™s economy.

	SC.8.E.5.Pa.4 Recognize a technology tool created for space exploration and adapted for personal use, such as computers, telescopes, or satellites.
	SC.8.E.5.Su.9 Identify an effect space exploration has had on Floridaâ€™s economy.

Body of Knowledge: NATURE OF SCIENCE

Big Idea 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.8.N.1.1	Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.N.1.In.1 Identify a problem from the eighth grade curriculum, use reference materials to gather information, carry out an experiment, collect and record data, and report results.
	SC.8.N.1.Su.1 Recognize a problem from the eighth grade curriculum, use materials to gather information, conduct a simple experiment, and record and share results.
	SC.8.N.1.Pa.1 Recognize a problem related to the eighth grade curriculum, observe and explore objects and activities, and recognize a solution.
SC.8.N.1.2	Design and conduct a study using repeated trials and replication. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.N.1.In.1 Identify a problem from the eighth grade curriculum, use reference materials to gather information, carry out an experiment, collect and record data, and report results.
	SC.8.N.1.Su.1 Recognize a problem from the eighth grade curriculum, use materials to gather information, conduct a simple experiment, and record and share results.
	SC.8.N.1.Pa.1 Recognize a problem related to the eighth grade curriculum, observe and explore objects and activities, and recognize a solution.

SC.8.N.1.3	Use phrases such as "results support" or "fail to support" in science, understanding that science does not offer conclusive 'proof' of a knowledge claim. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.N.1.In.1 Identify a problem from the eighth grade curriculum, use reference materials to gather information, carry out an experiment, collect and record data, and report results.
	SC.8.N.1.Su.1 Recognize a problem from the eighth grade curriculum, use materials to gather information, conduct a simple experiment, and record and share results.
	SC.8.N.1.Pa.1 Recognize a problem related to the eighth grade curriculum, observe and explore objects and activities, and recognize a solution.
SC.8.N.1.4	Explain how hypotheses are valuable if they lead to further investigations, even if they turn out not to be supported by the data. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.N.1.In.2 Identify a possible explanation (hypothesis) for a science problem.
	SC.8.N.1.Su.2 Recognize a possible explanation (hypothesis) for a science problem.
	SC.8.N.1.Pa.2 Recognize science as a way to solve problems about the natural world.
SC.8.N.1.5	Analyze the methods used to develop a scientific explanation as seen in different fields of science. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.N.1.Pa.2 Recognize science as a way to solve problems about the natural world.
	SC.8.N.1.In.3 Identify methods used in different areas of science, such as life science, earth and space science, and physical science.
	SC.8.N.1.Su.3 Recognize methods used in different areas of science, such as life science, earth and space science, and physical science.
SC.8.N.1.6	Understand that scientific investigations involve the collection of relevant empirical evidence, the use of logical reasoning, and the application of imagination in devising hypotheses, predictions, explanations and models to make sense of the collected evidence. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.N.1.Pa.2 Recognize science as a way to solve problems about the natural world.
	SC.8.N.1.In.4 Identify that the process used in scientific investigations involves asking a research question, forming a hypothesis, reviewing what is already known, collecting evidence through observations or experiments, determining results, and reaching conclusions.
	SC.8.N.1.Su.4 Recognize that the basic process used in scientific investigations involves questioning, observing, and recording and sharing results.

Big Idea 2: The Characteristics of Scientific Knowledge

A: Scientific knowledge is based on empirical evidence, and is appropriate for understanding the natural world, but it provides only a limited understanding of the supernatural, aesthetic, or other ways of knowing, such as art, philosophy, or religion.

B: Scientific knowledge is durable and robust, but open to change.

C: Because science is based on empirical evidence it strives for objectivity, but as it is a human endeavor the processes, methods, and knowledge of science include subjectivity, as well as creativity and discovery.

BENCHMARK CODE	BENCHMARK
SC.8.N.2.1	Distinguish between scientific and pseudoscientific ideas. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.N.2.In.1 Identify that scientific knowledge must be supported by evidence.
	SC.8.N.2.Su.1 Recognize examples of evidence that supports scientific knowledge.
	SC.8.N.2.Pa.1 Recognize an example of observable evidence related to science.
SC.8.N.2.2	Discuss what characterizes science and its methods. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.N.2.In.1 Identify that scientific knowledge must be supported by evidence.
	SC.8.N.2.Su.1 Recognize examples of evidence that supports scientific knowledge.
	SC.8.N.2.Pa.1 Recognize an example of observable evidence related to science.

Big Idea 3: The Role of Theories, Laws, Hypotheses, and Models

The terms that describe examples of scientific knowledge, for example; "theory," "law," "hypothesis," and "model" have very specific meanings and functions within science.

BENCHMARK CODE	BENCHMARK
SC.8.N.3.1	Select models useful in relating the results of their own investigations. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.N.3.In.1 Identify models used in the context of oneâ€™s own study of science.
	SC.8.N.3.Su.1 Recognize models used in the context of oneâ€™s own study of science.
	SC.8.N.3.Pa.1 Associate a model with an activity used in the context of oneâ€™s own study of science.
SC.8.N.3.2	Explain why theories may be modified but are rarely discarded. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.N.3.In.2 Identify that scientific theories can change.
	SC.8.N.3.Su.2 Recognize that scientific theories can change.

	SC.8.N.3.Pa.2 Observe and recognize a cause-effect relationship related to a science topic.

Big Idea 4: Science and Society

As tomorrows citizens, students should be able to identify issues about which society could provide input, formulate scientifically investigable questions about those issues, construct investigations of their questions, collect and evaluate data from their investigations, and develop scientific recommendations based upon their findings.

BENCHMARK CODE	BENCHMARK
SC.8.N.4.1	Explain that science is one of the processes that can be used to inform decision making at the community, state, national, and international levels. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.8.N.4.In.1 Identify ways that science processes can be used to make informed decisions in the community, state, and nation.
	SC.8.N.4.Su.1 Recognize that science processes can be used to help people in the community and state make wise choices.
	SC.8.N.4.Pa.1 Recognize a way science is used in the community.
SC.8.N.4.2	Explain how political, social, and economic concerns can affect science, and vice versa. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.8.N.4.In.1 Identify ways that science processes can be used to make informed decisions in the community, state, and nation.
	SC.8.N.4.Su.1 Recognize that science processes can be used to help people in the community and state make wise choices.
	SC.8.N.4.Pa.1 Recognize a way science is used in the community.

GRADE: 912

Body of Knowledge: LIFE SCIENCE

Standard 14: Organization and Development of Living Organisms

A. Cells have characteristic structures and functions that make them distinctive.

B. Processes in a cell can be classified broadly as growth, maintenance, reproduction, and homeostasis.

C. Life can be organized in a functional and structural hierarchy ranging from cells to the biosphere.

D. Most multicellular organisms are composed of organ systems whose structures reflect their particular function.

BENCHMARK CODE	BENCHMARK

SC.912.L.14.1	Describe the scientific theory of cells (cell theory) and relate the history of its discovery to the process of science. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.14.In.1 Identify that all living things are made of cells and cells function in similar ways (cell theory).
	SC.912.L.14.Su.1 Identify that the cell is the smallest basic unit of life and that all living things are made of cells.
	SC.912.L.14.Pa.1 Match parts of common living things to their functions.
SC.912.L.14.2	Relate structure to function for the components of plant and animal cells. Explain the role of cell membranes as a highly selective barrier (passive and active transport). *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.14.Pa.1 Match parts of common living things to their functions.
	SC.912.L.14.In.2 Identify the major parts of plant and animal cells, including the cell membrane, nucleus, and cytoplasm, and their basic functions.
	SC.912.L.14.Su.2 Recognize that cells have different parts and each has a function.
SC.912.L.14.3	Compare and contrast the general structures of plant and animal cells. Compare and contrast the general structures of prokaryotic and eukaryotic cells. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.14.Pa.1 Match parts of common living things to their functions.
	SC.912.L.14.In.2 Identify the major parts of plant and animal cells, including the cell membrane, nucleus, and cytoplasm, and their basic functions.
	SC.912.L.14.Su.2 Recognize that cells have different parts and each has a function.
SC.912.L.14.4	Compare and contrast structure and function of various types of microscopes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.5	Explain the evidence supporting the scientific theory of the origin of eukaryotic cells (endosymbiosis). *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.14.Su.2 Recognize that cells have different parts and each has a function.
	SC.912.L.14.Pa.2 Recognize that small parts of a living thing can work together.
	SC.912.L.14.In.3 Identify that parts of cells (organelles) can combine to work together.
SC.912.L.14.6	Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.14.Su.3 Recognize common human health issues.

	SC.912.L.14.Pa.3 Identify ways to prevent infection from bacteria and viruses, such as hand washing and first aid.
	SC.912.L.14.In.4 Describe common human health issues.
SC.912.L.14.7	Relate the structure of each of the major plant organs and tissues to physiological processes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.14.Su.4 Relate parts of plants, such as leaf, stem, root, seed, and flower, to the functions of food production, support, water transport, and reproduction.
	SC.912.L.14.Pa.4 Recognize major plant parts, such as root, stem, leaf, and flower.
	SC.912.L.14.In.5 Describe the general processes of food production, support, water transport, and reproduction in the major parts of plants.
SC.912.L.14.8	Explain alternation of generations in plants. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.9	Relate the major structure of fungi to their functions. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.10	Discuss the relationship between the evolution of land plants and their anatomy. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.14.11	Classify and state the defining characteristics of epithelial tissue, connective tissue, muscle tissue, and nervous tissue. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.12	Describe the anatomy and histology of bone tissue. *Content Complexity:* Level 1: Recall
SC.912.L.14.13	Distinguish between bones of the axial skeleton and the appendicular skeleton. *Content Complexity:* Level 1: Recall
SC.912.L.14.14	Identify the major bones of the axial and appendicular skeleton. *Content Complexity:* Level 1: Recall
SC.912.L.14.15	Identify major markings (such as foramina, fossae, tubercles, etc.) on a skeleton. Explain why these markings are important. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.16	Describe the anatomy and histology, including ultrastructure, of muscle tissue. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.17	List the steps involved in the sliding filament of muscle contraction. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.18	Describe signal transmission across a myoneural junction. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.19	Explain the physiology of skeletal muscle. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.20	Identify the major muscles of the human on a model or diagram. *Content Complexity:* Level 1: Recall

SC.912.L.14.21	Describe the anatomy, histology, and physiology of the central and peripheral nervous systems and name the major divisions of the nervous system. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.22	Describe the physiology of nerve conduction, including the generator potential, action potential, and the synapse. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.23	Identify the parts of a reflex arc. *Content Complexity:* Level 1: Recall
SC.912.L.14.24	Identify the general parts of a synapse and describe the physiology of signal transmission across a synapse. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.25	Identify the major parts of a cross section through the spinal cord. *Content Complexity:* Level 1: Recall
SC.912.L.14.26	Identify the major parts of the brain on diagrams or models. *Content Complexity:* Level 1: Recall
SC.912.L.14.27	Identify the functions of the major parts of the brain, including the meninges, medulla, pons, midbrain, hypothalamus, thalamus, cerebellum and cerebrum. *Content Complexity:* Level 1: Recall
SC.912.L.14.28	Identify the major functions of the spinal cord. *Content Complexity:* Level 1: Recall
SC.912.L.14.29	Define the terms endocrine and exocrine. *Content Complexity:* Level 1: Recall
SC.912.L.14.30	Compare endocrine and neural controls of physiology. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.31	Describe the physiology of hormones including the different types and the mechanisms of their action. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.32	Describe the anatomy and physiology of the endocrine system. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.33	Describe the basic anatomy and physiology of the reproductive system. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.34	Describe the composition and physiology of blood, including that of the plasma and the formed elements. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.35	Describe the steps in hemostasis, including the mechanism of coagulation. Include the basis for blood typing and transfusion reactions. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.36	Describe the factors affecting blood flow through the cardiovascular system. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.37	Explain the components of an electrocardiogram. *Content Complexity:* Level 1: Recall

SC.912.L.14.38	Describe normal heart sounds and what they mean. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.39	Describe hypertension and some of the factors that produce it. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.40	Describe the histology of the major arteries and veins of systemic, pulmonary, hepatic portal, and coronary circulation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.41	Describe fetal circulation and changes that occur to the circulatory system at birth. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.42	Describe the anatomy and the physiology of the lymph system. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.43	Describe the histology of the respiratory system. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.44	Describe the physiology of the respiratory system including the mechanisms of ventilation, gas exchange, gas transport and the mechanisms that control the rate of ventilation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.45	Describe the histology of the alimentary canal and its associated accessory organs. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.46	Describe the physiology of the digestive system, including mechanical digestion, chemical digestion, absorption and the neural and hormonal mechanisms of control. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.47	Describe the physiology of urine formation by the kidney. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.48	Describe the anatomy, histology, and physiology of the ureters, the urinary bladder and the urethra. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.49	Identify the major functions associated with the sympathetic and parasympathetic nervous systems. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.50	Describe the structure of vertebrate sensory organs. Relate structure to function in vertebrate sensory systems. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.51	Describe the function of the vertebrate integumentary system. *Content Complexity:* Level 1: Recall
SC.912.L.14.52	Explain the basic functions of the human immune system, including specific and nonspecific immune response, vaccines, and antibiotics. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.14.53	Discuss basic classification and characteristics of plants. Identify bryophytes, pteridophytes, gymnosperms, and angiosperms. *Content Complexity:* Level 2: Basic Application of Skills & Concepts

Standard 15: Diversity and Evolution of Living Organisms

A. The scientific theory of evolution is the fundamental concept underlying all of biology.

B. The scientific theory of evolution is supported by multiple forms of scientific evidence.

C. Organisms are classified based on their evolutionary history.

D. Natural selection is a primary mechanism leading to evolutionary change.

BENCHMARK CODE	BENCHMARK
SC.912.L.15.1	Explain how the scientific theory of evolution is supported by the fossil record, comparative anatomy, comparative embryology, biogeography, molecular biology, and observed evolutionary change. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.15.In.1 Identify that prehistoric plants and animals changed over time (evolved) or became extinct.
	SC.912.L.15.Su.1 Match fossils to related species.
	SC.912.L.15.Pa.1 Recognize that plants and animals change as they age.
SC.912.L.15.2	Discuss the use of molecular clocks to estimate how long ago various groups of organisms diverged evolutionarily from one another. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.15.3	Describe how biological diversity is increased by the origin of new species and how it is decreased by the natural process of extinction. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.15.4	Describe how and why organisms are hierarchically classified and based on evolutionary relationships. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.15.In.2 Classify living organisms into their kingdoms.
	SC.912.L.15.Su.2 Match organisms to the animal, plant, and fungus kingdoms.
	SC.912.L.15.Pa.2 Sort common living things into plant and animal kingdoms.
SC.912.L.15.5	Explain the reasons for changes in how organisms are classified. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.15.6	Discuss distinguishing characteristics of the domains and kingdoms of living organisms. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.15.In.2 Classify living organisms into their kingdoms.
	SC.912.L.15.Su.2 Match organisms to the animal, plant, and fungus kingdoms.
	SC.912.L.15.Pa.2 Sort common living things into plant and animal kingdoms.
SC.912.L.15.7	Discuss distinguishing characteristics of vertebrate and representative invertebrate phyla, and chordate classes using typical examples.

	Content Complexity: Level 2: Basic Application of Skills & Concepts
SC.912.L.15.8	Describe the scientific explanations of the origin of life on Earth. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.15.Pa.1 Recognize that plants and animals change as they age.
	SC.912.L.15.In.3 Identify that there are scientific explanations of the origin of life on Earth.
	SC.912.L.15.Su.3 Recognize that there are scientific explanations of how life began.
SC.912.L.15.9	Explain the role of reproductive isolation in the process of speciation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.15.10	Identify basic trends in hominid evolution from early ancestors six million years ago to modern humans, including brain size, jaw size, language, and manufacture of tools. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.15.Pa.1 Recognize that plants and animals change as they age.
	SC.912.L.15.In.4 Recognize ways that the appearance of humans, their language, and their tools have changed over time.
	SC.912.L.15.Su.4 Recognize that humans have changed in appearance over a very long period of time.
SC.912.L.15.11	Discuss specific fossil hominids and what they show about human evolution. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.15.12	List the conditions for Hardy-Weinberg equilibrium in a population and why these conditions are not likely to appear in nature. Use the Hardy-Weinberg equation to predict genotypes in a population from observed phenotypes. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.15.13	Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.15.Pa.3 Recognize that animals produce offspring.
	SC.912.L.15.In.5 Recognize that some living things produce very large numbers of offspring to ensure that enough survive to continue the species (a condition for natural selection).
	SC.912.L.15.Su.5 Recognize that some living things, such as fish and turtles, produce very large numbers of offspring because most will die as a result of dangers in the environment before they grow up.
SC.912.L.15.14	Discuss mechanisms of evolutionary change other than natural selection such as genetic drift and gene flow. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.15.Su.1 Match fossils to related species.
	SC.912.L.15.Pa.1 Recognize that plants and animals change as they age.

	SC.912.L.15.In.1 Identify that prehistoric plants and animals changed over time (evolved) or became extinct.
SC.912.L.15.15	Describe how mutation and genetic recombination increase genetic variation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.15.Pa.4 Recognize differences in physical characteristics within a species of animals, such as different types of dogs.
	SC.912.L.15.Su.6 Recognize that characteristics of the offspring of living things are sometimes different from their parents.

Standard 16: Heredity and Reproduction

A. DNA stores and transmits genetic information. Genes are sets of instructions encoded in the structure of DNA.

B. Genetic information is passed from generation to generation by DNA in all organisms and accounts for similarities in related individuals.

C. Manipulation of DNA in organisms has led to commercial production of biological molecules on a large scale and genetically modified organisms.

D. Reproduction is characteristic of living things and is essential for the survival of species.

BENCHMARK CODE	BENCHMARK
SC.912.L.16.1	Use Mendel's laws of segregation and independent assortment to analyze patterns of inheritance. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.16.In.1 Identify that genes are sets of instructions that determine which characteristics are passed from parent to offspring.
	SC.912.L.16.Su.1 Recognize characteristics (traits) that offspring inherit from parents.
	SC.912.L.16.Pa.1 Recognize similar characteristics (traits) between a child and parents, such as hair, eye, and skin color, or height.
SC.912.L.16.2	Discuss observed inheritance patterns caused by various modes of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.16.Su.1 Recognize characteristics (traits) that offspring inherit from parents.
	SC.912.L.16.Pa.1 Recognize similar characteristics (traits) between a child and parents, such as hair, eye, and skin color, or height.
	SC.912.L.16.In.2 Identify traits that plants and animals, including humans, inherit.
SC.912.L.16.3	Describe the basic process of DNA replication and how it relates to the transmission and conservation of the genetic information. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

	Related Access Point(s)
	SC.912.L.16.Su.2 Recognize that all organisms have a substance called DNA with unique information.
	SC.912.L.16.Pa.2 Recognize similarities in characteristics of plants and animals of the same type (species).
	SC.912.L.16.In.3 Recognize that a substance called DNA carries genetic information in all organisms, and changes (mutations) in DNA can be helpful or harmful to an organism.
SC.912.L.16.4	Explain how mutations in the DNA sequence may or may not result in phenotypic change. Explain how mutations in gametes may result in phenotypic changes in offspring. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.16.Su.2 Recognize that all organisms have a substance called DNA with unique information.
	SC.912.L.16.Pa.2 Recognize similarities in characteristics of plants and animals of the same type (species).
	SC.912.L.16.In.3 Recognize that a substance called DNA carries genetic information in all organisms, and changes (mutations) in DNA can be helpful or harmful to an organism.
SC.912.L.16.5	Explain the basic processes of transcription and translation, and how they result in the expression of genes. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.16.Su.2 Recognize that all organisms have a substance called DNA with unique information.
	SC.912.L.16.Pa.2 Recognize similarities in characteristics of plants and animals of the same type (species).
	SC.912.L.16.In.3 Recognize that a substance called DNA carries genetic information in all organisms, and changes (mutations) in DNA can be helpful or harmful to an organism.
SC.912.L.16.6	Discuss the mechanisms for regulation of gene expression in prokaryotes and eukaryotes at transcription and translation level. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.16.7	Describe how viruses and bacteria transfer genetic material between cells and the role of this process in biotechnology. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.16.8	Explain the relationship between mutation, cell cycle, and uncontrolled cell growth potentially resulting in cancer. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.16.Su.3 Recognize that cancer may result when cells change or grow too fast.
	SC.912.L.16.Pa.3 Recognize that illness can result when parts of our bodies are not working properly.
	SC.912.L.16.In.4 Identify that cancer can result when cells change or grow uncontrollably.
SC.912.L.16.9	Explain how and why the genetic code is universal and is common to almost all organisms. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)

	SC.912.L.16.Su.2 Recognize that all organisms have a substance called DNA with unique information.
	SC.912.L.16.Pa.2 Recognize similarities in characteristics of plants and animals of the same type (species).
	SC.912.L.16.In.3 Recognize that a substance called DNA carries genetic information in all organisms, and changes (mutations) in DNA can be helpful or harmful to an organism.
SC.912.L.16.10	Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.16.Su.4 Recognize that new medicines and foods can be developed by science (biotechnology).
	SC.912.L.16.Pa.4 Recognize a food.
	SC.912.L.16.In.5 Identify ways that biotechnology has impacted society and the environment, such as the development of new medicines and farming techniques.
SC.912.L.16.11	Discuss the technologies associated with forensic medicine and DNA identification, including restriction fragment length polymorphism (RFLP) analysis. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.16.12	Describe how basic DNA technology (restriction digestion by endonucleases, gel electrophoresis, polymerase chain reaction, ligation, and transformation) is used to construct recombinant DNA molecules (DNA cloning). *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.16.13	Describe the basic anatomy and physiology of the human reproductive system. Describe the process of human development from fertilization to birth and major changes that occur in each trimester of pregnancy. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.16.Su.5 Recognize major phases in the process of human development from fertilization to birth.
	SC.912.L.16.Pa.5 Recognize the sequence of human development from baby to child to adult.
	SC.912.L.16.In.6 Describe the basic process of human development from fertilization to birth.
SC.912.L.16.14	Describe the cell cycle, including the process of mitosis. Explain the role of mitosis in the formation of new cells and its importance in maintaining chromosome number during asexual reproduction. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.16.Su.6 Recognize that cells reproduce by dividing.
	SC.912.L.16.Pa.6 Recognize that living things produce offspring (reproduce).
	SC.912.L.16.In.7 Recognize that cells reproduce by dividing to produce new cells that are identical (mitosis) or new cells that are different (meiosis).
SC.912.L.16.15	Compare and contrast binary fission and mitotic cell division. *Content Complexity:* Level 2: Basic Application of Skills & Concepts

SC.912.L.16.16	Describe the process of meiosis, including independent assortment and crossing over. Explain how reduction division results in the formation of haploid gametes or spores. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.16.Su.6 Recognize that cells reproduce by dividing.
	SC.912.L.16.Pa.6 Recognize that living things produce offspring (reproduce).
	SC.912.L.16.In.7 Recognize that cells reproduce by dividing to produce new cells that are identical (mitosis) or new cells that are different (meiosis).
SC.912.L.16.17	Compare and contrast mitosis and meiosis and relate to the processes of sexual and asexual reproduction and their consequences for genetic variation. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.16.Su.6 Recognize that cells reproduce by dividing.
	SC.912.L.16.Pa.6 Recognize that living things produce offspring (reproduce).

Standard 17: Interdependence

A. The distribution and abundance of organisms is determined by the interactions between organisms, and between organisms and the non-living environment.

B. Energy and nutrients move within and between biotic and abiotic components of ecosystems via physical, chemical and biological processes.

C. Human activities and natural events can have profound effects on populations, biodiversity and ecosystem processes.

BENCHMARK CODE	BENCHMARK
SC.912.L.17.1	Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.17.2	Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.17.In.1 Recognize that living things in oceans and fresh water are affected by the location, availability of light, depth of the water, and temperature.
	SC.912.L.17.Su.1 Recognize that living things in bodies of water are affected by the location and depth of the water.
	SC.912.L.17.Pa.1 Recognize common living things in bodies of water.
SC.912.L.17.3	Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)

	SC.912.L.17.In.1 Recognize that living things in oceans and fresh water are affected by the location, availability of light, depth of the water, and temperature.
	SC.912.L.17.Su.1 Recognize that living things in bodies of water are affected by the location and depth of the water.
	SC.912.L.17.Pa.1 Recognize common living things in bodies of water.
SC.912.L.17.4	Describe changes in ecosystems resulting from seasonal variations, climate change and succession. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.17.In.2 Identify that living things in an ecosystem are affected by changes in the environment, such as changes to the food supply, climate change, or the introduction of predators.
	SC.912.L.17.Su.2 Recognize how animals and plants in an ecosystem may be affected by changes to the food supply or climate.
	SC.912.L.17.Pa.2 Recognize what happens to plants and animals when they donâ€™t get enough food or water.
SC.912.L.17.5	Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.17.In.2 Identify that living things in an ecosystem are affected by changes in the environment, such as changes to the food supply, climate change, or the introduction of predators.
	SC.912.L.17.Su.2 Recognize how animals and plants in an ecosystem may be affected by changes to the food supply or climate.
	SC.912.L.17.Pa.2 Recognize what happens to plants and animals when they donâ€™t get enough food or water.
SC.912.L.17.6	Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.17.In.3 Identify relationships among organisms, including helping each other (mutualism); obtaining food (predation); benefiting at the expense of the other (parasitism); and competing with each other for food, space, or shelter (competition).
	SC.912.L.17.Su.3 Recognize that organisms can interact with other organisms in an ecosystem to help each other (mutualism), to obtain food (predation), and to benefit at expense of the other (parasitism).
	SC.912.L.17.Pa.3 Recognize examples of mutual relationships between people and other living things.
SC.912.L.17.7	Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.17.8	Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)

	SC.912.L.17.In.4 Recognize possible changes in an ecosystem (biodiversity) that can result from natural catastrophic events, changes in climate, and human activity.
	SC.912.L.17.Su.4 Recognize changes in living things (biodiversity) that can result from natural catastrophic events and human activity.
	SC.912.L.17.Pa.4 Recognize actions that are harmful to living things.
SC.912.L.17.9	Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.17.In.5 Identify the components of a food web, including sunlight, producers, consumers, and decomposers, and trace the flow of energy from the Sun.
	SC.912.L.17.Su.5 Identify producers, consumers, and decomposers in a simple food chain.
	SC.912.L.17.Pa.5 Recognize that animals (consumers) eat animals and plants for food.
SC.912.L.17.10	Diagram and explain the biogeochemical cycles of an ecosystem, including water, carbon, and nitrogen cycle. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.17.In.6 Identify the contributions of non-living elements, such as carbon and oxygen, to maintaining life in an ecosystem.
	SC.912.L.17.Su.6 Identify that clean water and air are important for supporting life in an ecosystem.
	SC.912.L.17.Pa.6 Recognize the importance of clean water for living things.
SC.912.L.17.11	Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.17.Pa.6 Recognize the importance of clean water for living things.
	SC.912.L.17.In.7 Identify types of renewable and nonrenewable natural resources and explain the need for conservation.
	SC.912.L.17.Su.7 Identify a way to conserve a familiar, nonrenewable, natural resource.
SC.912.L.17.12	Discuss the political, social, and environmental consequences of sustainable use of land. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.17.13	Discuss the need for adequate monitoring of environmental parameters when making policy decisions. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.17.14	Assess the need for adequate waste management strategies. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.17.15	Discuss the effects of technology on environmental quality. *Content Complexity:* Level 2: Basic Application of Skills & Concepts

SC.912.L.17.16	Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.17.17	Assess the effectiveness of innovative methods of protecting the environment. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.L.17.18	Describe how human population size and resource use relate to environmental quality. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.17.19	Describe how different natural resources are produced and how their rates of use and renewal limit availability. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.17.20	Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

Related Access Point(s)
SC.912.L.17.Pa.7 Recognize a way to help the local environment.
SC.912.L.17.In.8 Describe ways the lifestyles of individuals and groups can help or hurt the environment.
SC.912.L.17.Su.8 Identify ways individuals can help the environment.

Standard 18: Matter and Energy Transformations

A. All living things are composed of four basic categories of macromolecules and share the same basic needs for life.

B. Living organisms acquire the energy they need for life processes through various metabolic pathways (primarily photosynthesis and cellular respiration).

C. Chemical reactions in living things follow basic rules of chemistry and are usually regulated by enzymes.

D. The unique chemical properties of carbon and water make life on Earth possible.

BENCHMARK CODE	BENCHMARK
SC.912.L.18.1	Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules. *Content Complexity:* Level 2: Basic Application of Skills & Concepts

Related Access Point(s)
SC.912.L.18.In.1 Identify that carbohydrates, fats, proteins, and nucleic acids (macromolecules) are important for human organisms.
SC.912.L.18.Su.1 Recognize that humans use proteins, carbohydrates, and fats.
SC.912.L.18.Pa.1 Recognize that humans need different kinds of food.

SC.912.L.18.2	Describe the important structural characteristics of monosaccharides, disaccharides, and polysaccharides and explain the functions of carbohydrates in living things. *Content Complexity:* Level 2: Basic Application of Skills & Concepts

SC.912.L.18.3	Describe the structures of fatty acids, triglycerides, phospholipids, and steroids. Explain the functions of lipids in living organisms. Identify some reactions that fatty acids undergo. Relate the structure and function of cell membranes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.18.4	Describe the structures of proteins and amino acids. Explain the functions of proteins in living organisms. Identify some reactions that amino acids undergo. Relate the structure and function of enzymes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.18.5	Discuss the use of chemiosmotic gradients for ATP production in chloroplasts and mitochondria. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.18.6	Discuss the role of anaerobic respiration in living things and in human society. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.L.18.7	Identify the reactants, products, and basic functions of photosynthesis. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.18.In.2 Identify the products and function of photosynthesis.
	SC.912.L.18.Su.2 Recognize that the function of photosynthesis is to produce food for plants.
	SC.912.L.18.Pa.2 Recognize that plants need water, light, and air to grow.
SC.912.L.18.8	Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.18.In.3 Identify that cells release energy from food so the organism can use it (cellular respiration).
	SC.912.L.18.Su.3 Recognize that cells get energy from food.
	SC.912.L.18.Pa.3 Identify that food is a source of energy.
SC.912.L.18.9	Explain the interrelated nature of photosynthesis and cellular respiration. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.18.Pa.2 Recognize that plants need water, light, and air to grow.
	SC.912.L.18.In.4 Recognize that plants give off oxygen that is used by animals and animals give off carbon dioxide that is used by plants.
	SC.912.L.18.Su.4 Recognize that people and animals breathe in the oxygen that plants give off.
SC.912.L.18.10	Connect the role of adenosine triphosphate (ATP) to energy transfers within a cell. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.L.18.Su.3 Recognize that cells get energy from food.
	SC.912.L.18.Pa.3 Identify that food is a source of energy.
	SC.912.L.18.In.5 Recognize that energy is stored in cells.

SC.912.L.18.11	Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, and their effect on enzyme activity. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.18.Pa.4 Recognize that saliva helps people eat when they chew.
	SC.912.L.18.Su.5 Recognize that food is broken down in digestion (use of enzymes).
	SC.912.L.18.In.6 Recognize that enzymes break down food molecules during the digestive process.
SC.912.L.18.12	Discuss the special properties of water that contribute to Earth's suitability as an environment for life: cohesive behavior, ability to moderate temperature, expansion upon freezing, and versatility as a solvent. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.L.18.Pa.5 Recognize that plants and animals use water to live.
	SC.912.L.18.Su.6 Identify the important role of water in sustaining life of plants and animals.
	SC.912.L.18.In.7 Identify that special properties of water, such as the ability to moderate temperature and dissolve substances, help to sustain living things on Earth.

Body of Knowledge: PHYSICAL SCIENCE

Standard 10: Energy

A. Energy is involved in all physical and chemical processes. It is conserved, and can be transformed from one form to another and into work. At the atomic and nuclear levels energy is not continuous but exists in discrete amounts. Energy and mass are related through Einstein's equation $E=mc^2$.

B. The properties of atomic nuclei are responsible for energy-related phenomena such as radioactivity, fission and fusion.

C. Changes in entropy and energy that accompany chemical reactions influence reaction paths. Chemical reactions result in the release or absorption of energy.

D. The theory of electromagnetism explains that electricity and magnetism are closely related. Electric charges are the source of electric fields. Moving charges generate magnetic fields.

E. Waves are the propagation of a disturbance. They transport energy and momentum but do not transport matter.

BENCHMARK CODE	BENCHMARK
SC.912.P.10.1	Differentiate among the various forms of energy and recognize that they can be transformed from one form to others. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.10.In.1 Identify examples of energy being transformed from one form to another (conserved quantity).

	SC.912.P.10.Su.1 Recognize energy transformations that occur in everyday life, such as solar energy to electricity.
	SC.912.P.10.Pa.1 Observe and recognize examples of the transformation of electrical energy to light and heat.
SC.912.P.10.2	Explore the Law of Conservation of Energy by differentiating among open, closed, and isolated systems and explain that the total energy in an isolated system is a conserved quantity. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.10.In.1 Identify examples of energy being transformed from one form to another (conserved quantity).
	SC.912.P.10.Su.1 Recognize energy transformations that occur in everyday life, such as solar energy to electricity.
	SC.912.P.10.Pa.1 Observe and recognize examples of the transformation of electrical energy to light and heat.
SC.912.P.10.3	Compare and contrast work and power qualitatively and quantitatively. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.10.In.2 Identify power as work done in a certain amount of time using measurable terms, such as watts or horsepower.
	SC.912.P.10.Su.2 Recognize the relationship between work and power, such as power is how fast a person or machine does work.
	SC.912.P.10.Pa.2 Recognize that work requires energy.
SC.912.P.10.4	Describe heat as the energy transferred by convection, conduction, and radiation, and explain the connection of heat to change in temperature or states of matter. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.10.In.3 Relate the transfer of heat to the states of matter, including gases result from heating, liquids result from cooling a gas, and solids result from further cooling a liquid.
	SC.912.P.10.Su.3 Observe and recognize ways that heat travels, such as through space (radiation), through solids (conduction), and through liquids and gases (convection).
	SC.912.P.10.Pa.3 Recognize the source and recipient of heat transfer.
SC.912.P.10.5	Relate temperature to the average molecular kinetic energy. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.10.In.3 Relate the transfer of heat to the states of matter, including gases result from heating, liquids result from cooling a gas, and solids result from further cooling a liquid.
	SC.912.P.10.Su.3 Observe and recognize ways that heat travels, such as through space (radiation), through solids (conduction), and through liquids and gases (convection).
	SC.912.P.10.Pa.3 Recognize the source and recipient of heat transfer.
SC.912.P.10.6	Create and interpret potential energy diagrams, for example: chemical reactions, orbits around a central body, motion of a pendulum.

	Content Complexity: Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.10.In.1 Identify examples of energy being transformed from one form to another (conserved quantity).
	SC.912.P.10.Su.1 Recognize energy transformations that occur in everyday life, such as solar energy to electricity.
	SC.912.P.10.Pa.4 Identify materials that provide protection (insulation) from heat.
SC.912.P.10.7	Distinguish between endothermic and exothermic chemical processes. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.10.Pa.4 Identify materials that provide protection (insulation) from heat.
	SC.912.P.10.In.4 Describe a process that gives off heat (exothermic), such as burning, and a process that absorbs heat (endothermic), such as water coming to a boil.
	SC.912.P.10.Su.4 Recognize common processes that give off heat (exothermic), such as burning, and processes that absorb heat (endothermic), such as water coming to a boil.
SC.912.P.10.8	Explain entropy's role in determining the efficiency of processes that convert energy to work. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.P.10.9	Describe the quantization of energy at the atomic level. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.10.Su.5 Recognize that nuclear power plants generate electricity and can be dangerous.
	SC.912.P.10.Pa.5 Recognize the universal symbols for radioactive and other hazardous materials.
	SC.912.P.10.In.6 Identify that atoms can be changed to release energy, such as in nuclear power plants, and recognize one related safety issue.
SC.912.P.10.10	Compare the magnitude and range of the four fundamental forces (gravitational, electromagnetic, weak nuclear, strong nuclear). *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.10.In.5 Identify fundamental forces, including gravitational and electromagnetic.
	SC.912.P.10.Su.6 Recognize fundamental forces, such as gravitational.
	SC.912.P.10.Pa.6 Recognize that an object falls unless stopped (gravity).
SC.912.P.10.11	Explain and compare nuclear reactions (radioactive decay, fission and fusion), the energy changes associated with them and their associated safety issues. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.10.Su.5 Recognize that nuclear power plants generate electricity and can be dangerous.
	SC.912.P.10.Pa.5 Recognize the universal symbols for radioactive and other hazardous materials.

	SC.912.P.10.In.6 Identify that atoms can be changed to release energy, such as in nuclear power plants, and recognize one related safety issue.
SC.912.P.10.12	Differentiate between chemical and nuclear reactions. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.10.Su.5 Recognize that nuclear power plants generate electricity and can be dangerous.
	SC.912.P.10.Pa.5 Recognize the universal symbols for radioactive and other hazardous materials.
	SC.912.P.10.In.6 Identify that atoms can be changed to release energy, such as in nuclear power plants, and recognize one related safety issue.
SC.912.P.10.13	Relate the configuration of static charges to the electric field, electric force, electric potential, and electric potential energy. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.P.10.14	Differentiate among conductors, semiconductors, and insulators. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.10.In.7 Identify common conductors and insulators of electricity.
	SC.912.P.10.Su.7 Recognize common objects that conduct electricity (conductors) and objects that do not conduct electricity (insulators).
	SC.912.P.10.Pa.7 Recognize safe and unsafe practices related to the use of electricity, such as keeping foreign objects out of electrical sockets and not using electrical devices around water.
SC.912.P.10.15	Investigate and explain the relationships among current, voltage, resistance, and power. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.10.In.8 Identify that some electrical devices use different types of power sources and explain what might happen if incorrect electrical components are used.
	SC.912.P.10.Su.8 Recognize that some electrical devices use different types of power sources.
	SC.912.P.10.Pa.8 Demonstrate opening and closing an electrical circuit to turn an electrical device on and off.
SC.912.P.10.16	Explain the relationship between moving charges and magnetic fields, as well as changing magnetic fields and electric fields, and their application to modern technologies. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.10.In.5 Identify fundamental forces, including gravitational and electromagnetic.
	SC.912.P.10.Su.9 Observe and identify the effects of magnetic attraction on iron.
	SC.912.P.10.Pa.9 Recognize how magnets are used in real-world situations.
SC.912.P.10.17	Explore the theory of electromagnetism by explaining electromagnetic waves in terms of oscillating electric and magnetic fields. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

SC.912.P.10.18	Explore the theory of electromagnetism by comparing and contrasting the different parts of the electromagnetic spectrum in terms of wavelength, frequency, and energy, and relate them to phenomena and applications. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.10.Su.10 Recognize examples of electromagnetic waves moving through different media, such as microwave ovens, radios, and x-rays.
	SC.912.P.10.Pa.10 Recognize primary and secondary colors in visible light.
	SC.912.P.10.In.9 Identify common applications of electromagnetic waves moving through different media, such as radio waves, microwaves, x-rays, or infrared.
SC.912.P.10.19	Explain that all objects emit and absorb electromagnetic radiation and distinguish between objects that are blackbody radiators and those that are not. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.P.10.20	Describe the measurable properties of waves and explain the relationships among them and how these properties change when the wave moves from one medium to another. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.10.Su.10 Recognize examples of electromagnetic waves moving through different media, such as microwave ovens, radios, and x-rays.
	SC.912.P.10.Pa.10 Recognize primary and secondary colors in visible light.
	SC.912.P.10.In.9 Identify common applications of electromagnetic waves moving through different media, such as radio waves, microwaves, x-rays, or infrared.
SC.912.P.10.21	Qualitatively describe the shift in frequency in sound or electromagnetic waves due to the relative motion of a source or a receiver. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.10.Su.10 Recognize examples of electromagnetic waves moving through different media, such as microwave ovens, radios, and x-rays.
	SC.912.P.10.Pa.10 Recognize primary and secondary colors in visible light.
	SC.912.P.10.In.9 Identify common applications of electromagnetic waves moving through different media, such as radio waves, microwaves, x-rays, or infrared.
SC.912.P.10.22	Construct ray diagrams and use thin lens and mirror equations to locate the images formed by lenses and mirrors. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

Standard 12: Motion

A. Motion can be measured and described qualitatively and quantitatively. Net forces create a change in motion. When objects travel at speeds comparable to the speed of light, Einstein's special theory of relativity applies.

B. Momentum is conserved under well-defined conditions. A change in momentum occurs when a net force is applied to an object over a time interval.

C. The Law of Universal Gravitation states that gravitational forces act on all objects irrespective of their size and position.

D. Gases consist of great numbers of molecules moving in all directions. The behavior of gases can be modeled by the kinetic molecular theory.

E. Chemical reaction rates change with conditions under which they occur. Chemical equilibrium is a dynamic state in which forward and reverse processes occur at the same rates.

BENCHMARK CODE	BENCHMARK
SC.912.P.12.1	Distinguish between scalar and vector quantities and assess which should be used to describe an event. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.12.In.1 Recognize that scalar quantities describe the magnitude of the measurement, such as size, weight, volume, area, temperature, or speed.
	SC.912.P.12.Su.1 Recognize that speed is expressed as distance moved in a certain time, such as miles per hour or feet per second.
	SC.912.P.12.Pa.1 Recognize that objects travel at different speeds.
SC.912.P.12.2	Analyze the motion of an object in terms of its position, velocity, and acceleration (with respect to a frame of reference) as functions of time. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.12.In.2 Identify acceleration as a change in speed or direction.
	SC.912.P.12.Su.2 Recognize that acceleration generally involves a change in speed.
	SC.912.P.12.Pa.2 Identify the speed and direction of a moving object, including fast and slow, up and down, round and round, straight line.
SC.912.P.12.3	Interpret and apply Newton's three laws of motion. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.12.In.3 Recognize various situations that show Newtonâ€™s third law of motion: for every action there is an equal and opposite reaction.
	SC.912.P.12.Su.3 Recognize the action and reaction in a situation that show Newtonâ€™s third law of motion: for every action there is an equal and opposite reaction.
	SC.912.P.12.Pa.3 Identify the source of the force moving an object.
SC.912.P.12.4	Describe how the gravitational force between two objects depends on their masses and the distance between them. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.12.In.4 Identify examples of how gravity attracts other objects, such as people to Earth or orbits of planets in the Solar System.

	SC.912.P.12.Su.4 Identify that gravity is a force that attracts objects.
	SC.912.P.12.Pa.4 Recognize that things fall down toward Earth unless stopped or held up (gravity).
SC.912.P.12.5	Apply the law of conservation of linear momentum to interactions, such as collisions between objects. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.12.In.3 Recognize various situations that show Newtonâ€™s third law of motion: for every action there is an equal and opposite reaction.
	SC.912.P.12.Su.3 Recognize the action and reaction in a situation that show Newtonâ€™s third law of motion: for every action there is an equal and opposite reaction.
	SC.912.P.12.Pa.3 Identify the source of the force moving an object.
SC.912.P.12.6	Qualitatively apply the concept of angular momentum. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.12.In.3 Recognize various situations that show Newtonâ€™s third law of motion: for every action there is an equal and opposite reaction.
	SC.912.P.12.Su.3 Recognize the action and reaction in a situation that show Newtonâ€™s third law of motion: for every action there is an equal and opposite reaction.
	SC.912.P.12.Pa.3 Identify the source of the force moving an object.
SC.912.P.12.7	Recognize that nothing travels faster than the speed of light in vacuum which is the same for all observers no matter how they or the light source are moving. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.912.P.12.In.5 Recognize that the speed of light is always the same.
	SC.912.P.12.Su.5 Recognize that light travels very fast.
	SC.912.P.12.Pa.5 Recognize ways to stop light from traveling, such as closing a door.
SC.912.P.12.8	Recognize that Newton's Laws are a limiting case of Einstein's Special Theory of Relativity at speeds that are much smaller than the speed of light. *Content Complexity:* Level 1: Recall
SC.912.P.12.9	Recognize that time, length, and energy depend on the frame of reference. *Content Complexity:* Level 1: Recall
SC.912.P.12.10	Interpret the behavior of ideal gases in terms of kinetic molecular theory. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.12.In.6 Identify that gases exert pressure in a closed surface, such as pressure inside a basketball or a hot air balloon.
	SC.912.P.12.Su.6 Recognize that a gas can exert pressure, such as in balloons, car tires, or pool floats.
	SC.912.P.12.Pa.6 Recognize that some objects contain air, such as balloons, tires, and balls.

SC.912.P.12.11	Describe phase transitions in terms of kinetic molecular theory. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.P.12.12	Explain how various factors, such as concentration, temperature, and presence of a catalyst affect the rate of a chemical reaction. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
SC.912.P.12.13	Explain the concept of dynamic equilibrium in terms of reversible processes occurring at the same rates. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

Standard 8: Matter

A. A working definition of matter is that it takes up space, has mass, and has measurable properties. Matter is comprised of atomic, subatomic, and elementary particles.

B. Electrons are key to defining chemical and some physical properties, reactivity, and molecular structures. Repeating (periodic) patterns of physical and chemical properties occur among elements that define groups of elements with similar properties. The periodic table displays the repeating patterns, which are related to the atom's outermost electrons. Atoms bond with each other to form compounds.

C. In a chemical reaction, one or more reactants are transformed into one or more new products. Many factors shape the nature of products and the rates of reaction.

D. Carbon-based compounds are building-blocks of known life forms on earth and numerous useful natural and synthetic products.

BENCHMARK CODE	BENCHMARK
SC.912.P.8.1	Differentiate among the four states of matter. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.8.In.1 Classify states of matter as solid, liquid, and gaseous.
	SC.912.P.8.Su.1 Identify examples of states of matter as solid, liquid, and gaseous.
	SC.912.P.8.Pa.1 Select an example of a common solid, liquid, and gas.
SC.912.P.8.2	Differentiate between physical and chemical properties and physical and chemical changes of matter. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.8.In.2 Compare characteristics of physical and chemical changes of matter.
	SC.912.P.8.Su.2 Identify examples of physical and chemical changes.
	SC.912.P.8.Pa.2 Recognize a common chemical change, such as cooking, burning, rusting, or decaying.
SC.912.P.8.3	Explore the scientific theory of atoms (also known as atomic theory) by describing changes in the atomic model over time and why those changes were necessitated by experimental evidence. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)

	SC.912.P.8.In.3 Identify the nucleus as the center of an atom.
	SC.912.P.8.Su.3 Recognize that atoms are tiny particles in materials, too small to see.
	SC.912.P.8.Pa.3 Recognize that the parts of an object can be put together to make a whole.
SC.912.P.8.4	Explore the scientific theory of atoms (also known as atomic theory) by describing the structure of atoms in terms of protons, neutrons and electrons, and differentiate among these particles in terms of their mass, electrical charges and locations within the atom. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.8.In.3 Identify the nucleus as the center of an atom.
	SC.912.P.8.Su.3 Recognize that atoms are tiny particles in materials, too small to see.
	SC.912.P.8.Pa.3 Recognize that the parts of an object can be put together to make a whole.
SC.912.P.8.5	Relate properties of atoms and their position in the periodic table to the arrangement of their electrons. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.8.Pa.3 Recognize that the parts of an object can be put together to make a whole.
	SC.912.P.8.In.4 Recognize that the periodic table includes all known elements.
	SC.912.P.8.Su.4 Recognize examples of common elements, such as oxygen and hydrogen.
SC.912.P.8.6	Distinguish between bonding forces holding compounds together and other attractive forces, including hydrogen bonding and van der Waals forces. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.8.Pa.4 Match common compounds to their names or communication symbols.
	SC.912.P.8.In.5 Identify that compounds are made of two or more elements.
	SC.912.P.8.Su.5 Recognize examples of common compounds, such as water and salt.
SC.912.P.8.7	Interpret formula representations of molecules and compounds in terms of composition and structure. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.8.Pa.4 Match common compounds to their names or communication symbols.
	SC.912.P.8.In.6 Identify formulas for common compounds, such as H2O and CO2.
	SC.912.P.8.Su.6 Match common chemical formulas to their common name, such as H2O to water.
SC.912.P.8.8	Characterize types of chemical reactions, for example: redox, acid-base, synthesis, and single and double replacement reactions. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.8.In.2 Compare characteristics of physical and chemical changes of matter.

	SC.912.P.8.Su.2 Identify examples of physical and chemical changes.
	SC.912.P.8.Pa.2 Recognize a common chemical change, such as cooking, burning, rusting, or decaying.
SC.912.P.8.9	Apply the mole concept and the law of conservation of mass to calculate quantities of chemicals participating in reactions. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.8.In.2 Compare characteristics of physical and chemical changes of matter.
	SC.912.P.8.Su.2 Identify examples of physical and chemical changes.
	SC.912.P.8.Pa.2 Recognize a common chemical change, such as cooking, burning, rusting, or decaying.
SC.912.P.8.10	Describe oxidation-reduction reactions in living and non-living systems. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.8.In.2 Compare characteristics of physical and chemical changes of matter.
	SC.912.P.8.Su.2 Identify examples of physical and chemical changes.
	SC.912.P.8.Pa.2 Recognize a common chemical change, such as cooking, burning, rusting, or decaying.
SC.912.P.8.11	Relate acidity and basicity to hydronium and hydroxyl ion concentration and pH. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.8.Pa.5 Recognize that some acids and bases can be dangerous and identify related hazard symbols.
	SC.912.P.8.In.7 Identify properties of common acids and bases.
	SC.912.P.8.Su.7 Categorize common materials or foods as acids or bases.
SC.912.P.8.12	Describe the properties of the carbon atom that make the diversity of carbon compounds possible. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.P.8.Pa.4 Match common compounds to their names or communication symbols.
	SC.912.P.8.In.8 Identify that carbon is found in all living things.
	SC.912.P.8.Su.8 Recognize that carbon is found in all living things.
SC.912.P.8.13	Identify selected functional groups and relate how they contribute to properties of carbon compounds. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.P.8.Pa.4 Match common compounds to their names or communication symbols.
	SC.912.P.8.In.8 Identify that carbon is found in all living things.
	SC.912.P.8.Su.8 Recognize that carbon is found in all living things.

Body of Knowledge: EARTH AND SPACE SCIENCE

Standard 5: Earth in Space and Time

The origin and eventual fate of the Universe still remains one of the greatest questions in science. Gravity and energy influence the development and life cycles of galaxies, including our own Milky Way Galaxy, stars, the planetary systems, Earth, and residual material left from the formation of the Solar System. Humankindâ€™s need to explore continues to lead to the development of knowledge and understanding of the nature of the Universe.

BENCHMARK CODE	BENCHMARK
SC.912.E.5.1	Cite evidence used to develop and verify the scientific theory of the Big Bang (also known as the Big Bang Theory) of the origin of the universe. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.5.In.1 Recognize that the Milky Way is part of the expanding universe.
	SC.912.E.5.Su.1 Recognize that the universe consists of many galaxies, including the Milky Way.
	SC.912.E.5.Pa.1 Recognize that when objects move away from each other, the distance between them expands.
SC.912.E.5.2	Identify patterns in the organization and distribution of matter in the universe and the forces that determine them. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.E.5.In.1 Recognize that the Milky Way is part of the expanding universe.
	SC.912.E.5.Su.1 Recognize that the universe consists of many galaxies, including the Milky Way.
	SC.912.E.5.Pa.1 Recognize that when objects move away from each other, the distance between them expands.
SC.912.E.5.3	Describe and predict how the initial mass of a star determines its evolution. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.E.5.In.2 Explain that stars change over time, and that stars can be different; some are smaller, some are larger and some appear brighter than others.
	SC.912.E.5.Su.2 Identify differences in stars: some are smaller, some are larger and some appear brighter than others.
	SC.912.E.5.Pa.2 Recognize that some stars are brighter than others.
SC.912.E.5.4	Explain the physical properties of the Sun and its dynamic nature and connect them to conditions and events on Earth. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.5.In.3 Describe the Sun as a medium-sized star with sunspots and storms that can affect weather and radio transmissions on Earth.
	SC.912.E.5.Su.3 Describe observable effects of the Sun on Earth, such as changes in light and temperature.

	SC.912.E.5.Pa.3 Observe and recognize effects of the Sun on Earth, such as temperature changes.
SC.912.E.5.5	Explain the formation of planetary systems based on our knowledge of our Solar System and apply this knowledge to newly discovered planetary systems. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.5.In.4 Recognize that there are other planetary systems in the universe besides the Solar System.
	SC.912.E.5.Su.4 Recognize that there are planetary systems in the Universe.
	SC.912.E.5.Pa.4 Recognize that Earth is a planet.
SC.912.E.5.6	Develop logical connections through physical principles, including Kepler's and Newton's Laws about the relationships and the effects of Earth, Moon, and Sun on each other. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.5.Pa.3 Observe and recognize effects of the Sun on Earth, such as temperature changes.
	SC.912.E.5.Su.5 Recognize an eclipse.
	SC.912.E.5.In.7 Recognize a lunar eclipse, a solar eclipse, and the effect of the Moon on tides on Earth.
SC.912.E.5.7	Relate the history of and explain the justification for future space exploration and continuing technology development. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.5.Pa.5 Recognize items, such as freeze-dried food and space blankets, developed because of space exploration.
	SC.912.E.5.In.6 Identify major contributions and research from space exploration that affected Floridaâ€™s economy and culture.
	SC.912.E.5.Su.6 Identify major contributions related to space exploration that affected Florida.
SC.912.E.5.8	Connect the concepts of radiation and the electromagnetic spectrum to the use of historical and newly-developed observational tools. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.5.In.5 Identify tools that use different types of radiation, such as radio waves, ultraviolet radiation, and infrared waves.
	SC.912.E.5.Pa.6 Recognize a tool that uses radiation for personal reasons, such as x-rays.
	SC.912.E.5.Su.7 Recognize examples of tools that use radiation for observation purposes, such as x-rays and infrared night goggles.
SC.912.E.5.9	Analyze the broad effects of space exploration on the economy and culture of Florida. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)

	SC.912.E.5.Pa.5 Recognize items, such as freeze-dried food and space blankets, developed because of space exploration.
	SC.912.E.5.Su.6 Identify major contributions related to space exploration that affected Florida.
SC.912.E.5.10	Describe and apply the coordinate system used to locate objects in the sky. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.E.5.11	Distinguish the various methods of measuring astronomical distances and apply each in appropriate situations. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

Standard 6: Earth Structures

The scientific theory of plate tectonics provides the framework for much of modern geology. Over geologic time, internal and external sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's internal and external energy and material resources.

BENCHMARK CODE	BENCHMARK
SC.912.E.6.1	Describe and differentiate the layers of Earth and the interactions among them. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.E.6.In.1 Describe the three layers of Earth (core, mantle, and crust).
	SC.912.E.6.Su.1 Recognize the three layers of Earth (core, mantle, and crust).
	SC.912.E.6.Pa.1 Identify a surface feature of Earth, such as a hill.
SC.912.E.6.2	Connect surface features to surface processes that are responsible for their formation. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.E.6.Pa.1 Identify a surface feature of Earth, such as a hill.
	SC.912.E.6.In.2 Describe examples of surface features, such as glaciers, valleys, canyons, and dried riverbeds, which are caused by wind and erosion (surface processes).
	SC.912.E.6.Su.2 Identify types of surface features, such as hills and valleys.
SC.912.E.6.3	Analyze the scientific theory of plate tectonics and identify related major processes and features as a result of moving plates. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.6.Pa.2 Recognize that the surface of Earth can change.
	SC.912.E.6.In.3 Relate a cause and effect of movements in Earthâ€™s crust (plate tectonics), such as fault lines in the plates causing earthquakes.
	SC.912.E.6.Su.3 Recognize that Earthâ€™s crust is broken into parts (plates) that move and cause mountains and volcanoes.
SC.912.E.6.4	Analyze how specific geologic processes and features are expressed in Florida and elsewhere. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

	Related Access Point(s)
	SC.912.E.6.Pa.2 Recognize that the surface of Earth can change.
	SC.912.E.6.In.4 Identify natural geological processes that change the land and water in Florida, including beach erosion and sinkholes.
	SC.912.E.6.Su.4 Recognize examples of natural changes to Floridaâ€™s land and water, such as beach erosion.
SC.912.E.6.5	Describe the geologic development of the present day oceans and identify commonly found features. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
SC.912.E.6.6	Analyze past, present, and potential future consequences to the environment resulting from various energy production technologies. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning

Standard 7: Earth Systems and Patterns

The scientific theory of the evolution of Earth states that changes in our planet are driven by the flow of energy and the cycling of matter through dynamic interactions among the atmosphere, hydrosphere, cryosphere, geosphere, and biosphere, and the resources used to sustain human civilization on Earth.

BENCHMARK CODE	BENCHMARK
SC.912.E.7.1	Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.7.In.1 Identify cycles that occur on Earth, such as the water and carbon cycles, and the role energy plays in them.
	SC.912.E.7.Su.1 Recognize the phases of the water cycle that occur on Earth and the role energy plays in the water cycle.
	SC.912.E.7.Pa.1 Recognize that clouds release rain (part of the water cycle).
SC.912.E.7.2	Analyze the causes of the various kinds of surface and deep water motion within the oceans and their impacts on the transfer of energy between the poles and the equator. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.7.In.2 Recognize that there are circular movements of ocean water (surface and deep-water currents) which move cold water from the poles toward the tropics and vice versa.
	SC.912.E.7.Su.2 Recognize that currents move the ocean water around Earth.
	SC.912.E.7.Pa.2 Recognize waves in the ocean.
SC.912.E.7.3	Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.7.In.3 Describe the interactions among the atmosphere, hydrosphere, and biosphere,

	including how air, water, and land support living things and how air temperature affects water and land temperatures.
	SC.912.E.7.Su.3 Recognize components of the atmosphere, the hydrosphere, and the biosphere.
	SC.912.E.7.Pa.3 Recognize that humans, plants, and animals live on the Earth (biosphere).
SC.912.E.7.4	Summarize the conditions that contribute to the climate of a geographic area, including the relationships to lakes and oceans. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.E.7.In.4 Describe variations in climate due to geological locations, such as on mountains and the nearness to large bodies of water.
	SC.912.E.7.Su.4 Identify the climate conditions in different parts of the world.
	SC.912.E.7.Pa.4 Recognize that weather (climate) is different in different locations.
SC.912.E.7.5	Predict future weather conditions based on present observations and conceptual models and recognize limitations and uncertainties of such predictions. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.7.In.5 Identify weather conditions using weather data and weather maps.
	SC.912.E.7.Su.5 Identify weather conditions, including temperature, wind speed, and humidity.
	SC.912.E.7.Pa.5 Recognize the weather conditions, including severe weather, in Florida.
SC.912.E.7.6	Relate the formation of severe weather to the various physical factors. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.E.7.Pa.5 Recognize the weather conditions, including severe weather, in Florida.
	SC.912.E.7.In.6 Compare weather conditions in different types of severe storms, including hurricanes, tornadoes, and thunderstorms.
	SC.912.E.7.Su.6 Recognize conditions in severe storms, such as hurricanes, tornadoes, and thunderstorms.
SC.912.E.7.7	Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.7.Pa.4 Recognize that weather (climate) is different in different locations.
	SC.912.E.7.In.7 Recognize that global climate change is related to conditions in the atmosphere and oceans.
	SC.912.E.7.Su.7 Recognize that global climate change occurs over a long period of time.
SC.912.E.7.8	Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)

	SC.912.E.7.Pa.5 Recognize the weather conditions, including severe weather, in Florida.
	SC.912.E.7.In.8 Describe how atmospheric and hydrologic conditions, such as hurricanes, drought, wildfires, and sinkholes, affect human behavior.
	SC.912.E.7.Su.8 Identify how weather and water conditions affect humans in Florida.
SC.912.E.7.9	Cite evidence that the ocean has had a significant influence on climate change by absorbing, storing, and moving heat, carbon, and water. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.E.7.Pa.6 Recognize that the Sun heats the water in the ocean.
	SC.912.E.7.In.9 Recognize that the ocean absorbs most of the solar energy reaching Earth and loses heat primarily by evaporation.
	SC.912.E.7.Su.9 Recognize that the ocean absorbs heat from the Sun and then warms the air.

Body of Knowledge: NATURE OF SCIENCE

Standard 1: The Practice of Science

A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

BENCHMARK CODE	BENCHMARK
SC.912.N.1.1	Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following: 1. **Pose questions about the natural world,** (Articulate the purpose of the investigation and identify the relevant scientific concepts). 2. **Conduct systematic observations,** (Write procedures that are clear and replicable. Identify observables and examine relationships between test (independent) variable and outcome (dependent) variable. Employ appropriate methods for accurate and consistent observations; conduct and record measurements at appropriate levels of precision. Follow safety guidelines). 3. **Examine books and other sources of information to see what is already known,**

	4. **Review what is known in light of empirical evidence,** (Examine whether available empirical evidence can be interpreted in terms of existing knowledge and models, and if not, modify or develop new models). 5. **Plan investigations,** (Design and evaluate a scientific investigation). 6. **Use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also the generation and interpretation of graphical representations of data, including data tables and graphs),** (Collect data or evidence in an organized way. Properly use instruments, equipment, and materials (e.g., scales, probeware, meter sticks, microscopes, computers) including set-up, calibration, technique, maintenance, and storage). 7. **Pose answers, explanations, or descriptions of events,** 8. **Generate explanations that explicate or describe natural phenomena (inferences),** 9. **Use appropriate evidence and reasoning to justify these explanations to others,** 10. **Communicate results of scientific investigations, and** 11. **Evaluate the merits of the explanations produced by others.** *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.N.1.In.1 Identify a problem based on a specific body of knowledge, including life science, earth and space science, or physical science, and do the following: 1. Identify a scientific question 2. Examine reliable sources of informtion to identify what is already known 3. Develop a possible explanation (hypothesis) 4. Plan and carry out an experiment 5. Gather data based on measurement and observations 6. Evaluate the data 7. Use the data to support reasonable explanations, inferences, and conclusions.
	SC.912.N.1.Su.1 Recognize a problem based on a specific body of knowledge, including life science, earth and space science, or physical science, and do the following: 1. Recognize a scientific question 2. Use reliable information and identify what is already known 3. Create possible explanation 4. Carry out a planned experiment 5. Record observations 6. Summarize results 7. Reach a reasonable conclusion.
	SC.912.N.1.Pa.1 Recognize a problem related to a specific body of knowledge, including life science, earth and space science, or physical science, and do the following: 1. Observe objects and activities 2. Follow planned procedures 3. Recognize a solution.
SC.912.N.1.2	Describe and explain what characterizes science and its methods. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.N.1.In.2 Describe the processes used in scientific investigations, including posing a research question, forming a hypothesis, reviewing what is known, collecting evidence, evaluating results, and reaching conclusions.
	SC.912.N.1.Su.2 Identify the basic process used in scientific investigations, including questioning, observing, recording, determining, and sharing results.
	SC.912.N.1.Pa.2 Recognize a process used in science to solve problems, such as observing, following procedures, and recognizing results.
SC.912.N.1.3	Recognize that the strength or usefulness of a scientific claim is evaluated through scientific argumentation, which depends on critical and logical thinking, and the active consideration of alternative scientific explanations to explain the data presented. *Content Complexity:* Level 1: Recall
	Related Access Point(s)

	SC.912.N.1.In.2 Describe the processes used in scientific investigations, including posing a research question, forming a hypothesis, reviewing what is known, collecting evidence, evaluating results, and reaching conclusions.
	SC.912.N.1.Su.2 Identify the basic process used in scientific investigations, including questioning, observing, recording, determining, and sharing results.
	SC.912.N.1.Pa.2 Recognize a process used in science to solve problems, such as observing, following procedures, and recognizing results.
SC.912.N.1.4	Identify sources of information and assess their reliability according to the strict standards of scientific investigation. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.N.1.In.1 Identify a problem based on a specific body of knowledge, including life science, earth and space science, or physical science, and do the following: 1. Identify a scientific question 2. Examine reliable sources of informtion to identify what is already known 3. Develop a possible explanation (hypothesis) 4. Plan and carry out an experiment 5. Gather data based on measurement and observations 6. Evaluate the data 7. Use the data to support reasonable explanations, inferences, and conclusions.
	SC.912.N.1.Su.1 Recognize a problem based on a specific body of knowledge, including life science, earth and space science, or physical science, and do the following: 1. Recognize a scientific question 2. Use reliable information and identify what is already known 3. Create possible explanation 4. Carry out a planned experiment 5. Record observations 6. Summarize results 7. Reach a reasonable conclusion.
	SC.912.N.1.Pa.1 Recognize a problem related to a specific body of knowledge, including life science, earth and space science, or physical science, and do the following: 1. Observe objects and activities 2. Follow planned procedures 3. Recognize a solution.
SC.912.N.1.5	Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.N.1.In.3 Identify that scientific investigations are sometimes repeated in different locations.
	SC.912.N.1.Su.3 Recognize that scientific investigations can be repeated in different locations.
	SC.912.N.1.Pa.3 Recognize that when a variety of common activities are repeated the same way, the outcomes are the same.
SC.912.N.1.6	Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.N.1.In.1 Identify a problem based on a specific body of knowledge, including life science, earth and space science, or physical science, and do the following: 1. Identify a scientific question 2. Examine reliable sources of informtion to identify what is already known 3. Develop a possible explanation (hypothesis) 4. Plan and carry out an experiment 5. Gather data based on measurement and observations 6. Evaluate the data 7. Use the data to support reasonable explanations, inferences, and conclusions.
	SC.912.N.1.Su.1 Recognize a problem based on a specific body of knowledge, including life science, earth and space science, or physical science, and do the following: 1. Recognize a scientific question 2. Use reliable information and identify what is already known 3.

	Create possible explanation 4. Carry out a planned experiment 5. Record observations 6. Summarize results 7. Reach a reasonable conclusion.
	SC.912.N.1.Pa.1 Recognize a problem related to a specific body of knowledge, including life science, earth and space science, or physical science, and do the following: 1. Observe objects and activities 2. Follow planned procedures 3. Recognize a solution.
SC.912.N.1.7	Recognize the role of creativity in constructing scientific questions, methods and explanations. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.912.N.1.In.4 Identify that scientists use many different methods in conducting their research.
	SC.912.N.1.Su.4 Recognize that scientists use a variety of methods to get answers to their research questions.
	SC.912.N.1.Pa.4 Recognize that people try different ways to complete a task when the first one does not work.

Standard 2: The Characteristics of Scientific Knowledge

A: Scientific knowledge is based on empirical evidence, and is appropriate for understanding the natural world, but it provides only a limited understanding of the supernatural, aesthetic, or other ways of knowing, such as art, philosophy, or religion.

B: Scientific knowledge is durable and robust, but open to change.

C: Because science is based on empirical evidence it strives for objectivity, but as it is a human endeavor the processes, methods, and knowledge of science include subjectivity, as well as creativity and discovery.

BENCHMARK CODE	BENCHMARK
SC.912.N.2.1	Identify what is science, what clearly is not science, and what superficially resembles science (but fails to meet the criteria for science). *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.N.2.In.1 Identify examples of investigations that involve science.
	SC.912.N.2.Su.1 Identify questions that can be answered by science.
	SC.912.N.2.Pa.1 Recognize an example of work by scientists.
SC.912.N.2.2	Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.N.2.Su.1 Identify questions that can be answered by science.
	SC.912.N.2.Pa.1 Recognize an example of work by scientists.
	SC.912.N.2.In.2 Distinguish between questions that can be answered by science and observable information and questions that canâ€™t be answered by science and observable information.

SC.912.N.2.3	Identify examples of pseudoscience (such as astrology, phrenology) in society. *Content Complexity:* Level 1: Recall
	Related Access Point(s)
	SC.912.N.2.Su.1 Identify questions that can be answered by science.
	SC.912.N.2.Pa.1 Recognize an example of work by scientists.
	SC.912.N.2.In.2 Distinguish between questions that can be answered by science and observable information and questions that canâ€™t be answered by science and observable information.
SC.912.N.2.4	Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.N.2.Su.2 Recognize that what is known about science can change based on new information.
	SC.912.N.2.Pa.2 Recognize a variety of cause-effect relationships related to science.
	SC.912.N.2.In.3 Recognize that scientific knowledge can be challenged or confirmed by new investigations and reexamination.
SC.912.N.2.5	Describe instances in which scientists' varied backgrounds, talents, interests, and goals influence the inferences and thus the explanations that they make about observations of natural phenomena and describe that competing interpretations (explanations) of scientists are a strength of science as they are a source of new, testable ideas that have the potential to add new evidence to support one or another of the explanations. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.N.2.Pa.1 Recognize an example of work by scientists.
	SC.912.N.2.Su.3 Recognize major contributions of scientists.
	SC.912.N.2.In.4 Identify major contributions of scientists.

Standard 3: The Role of Theories, Laws, Hypotheses, and Models

The terms that describe examples of scientific knowledge, for example: "theory," "law," "hypothesis" and "model" have very specific meanings and functions within science.

BENCHMARK CODE	BENCHMARK
SC.912.N.3.1	Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning
	Related Access Point(s)
	SC.912.N.3.In.1 Recognize that a scientific theory is developed by repeated investigations of many scientists and agreement on the likely explanation.
	SC.912.N.3.Su.1 Recognize that scientific theories are supported by evidence and agreement of many scientists.

	SC.912.N.3.Pa.1 Recognize examples of cause-effect descriptions or explanations related to science.
SC.912.N.3.2	Describe the role consensus plays in the historical development of a theory in any one of the disciplines of science. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.N.3.In.1 Recognize that a scientific theory is developed by repeated investigations of many scientists and agreement on the likely explanation.
	SC.912.N.3.Su.1 Recognize that scientific theories are supported by evidence and agreement of many scientists.
	SC.912.N.3.Pa.1 Recognize examples of cause-effect descriptions or explanations related to science.
SC.912.N.3.3	Explain that scientific laws are descriptions of specific relationships under given conditions in nature, but do not offer explanations for those relationships. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.N.3.Pa.1 Recognize examples of cause-effect descriptions or explanations related to science.
	SC.912.N.3.In.2 Identify examples of scientific laws that describe relationships in the natural world, such as Newtonâ€™s laws.
	SC.912.N.3.Su.2 Recognize examples of scientific laws that describe relationships in nature, such as Newtonâ€™s laws.
SC.912.N.3.4	Recognize that theories do not become laws, nor do laws become theories; theories are well supported explanations and laws are well supported descriptions. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.N.3.In.1 Recognize that a scientific theory is developed by repeated investigations of many scientists and agreement on the likely explanation.
	SC.912.N.3.Su.1 Recognize that scientific theories are supported by evidence and agreement of many scientists.
	SC.912.N.3.Pa.1 Recognize examples of cause-effect descriptions or explanations related to science.
	SC.912.N.3.In.2 Identify examples of scientific laws that describe relationships in the natural world, such as Newtonâ€™s laws.
	SC.912.N.3.Su.2 Recognize examples of scientific laws that describe relationships in nature, such as Newtonâ€™s laws.
SC.912.N.3.5	Describe the function of models in science, and identify the wide range of models used in science. *Content Complexity:* Level 2: Basic Application of Skills & Concepts
	Related Access Point(s)
	SC.912.N.3.Pa.2 Recognize a model used in the context of oneâ€™s own study of science.
	SC.912.N.3.In.3 Identify ways models are used in the study of science.
	SC.912.N.3.Su.3 Recognize ways models are used in the study of science.

Standard 4: Science and Society

As tomorrows citizens, students should be able to identify issues about which society could provide input, formulate scientifically investigable questions about those issues, construct investigations of their questions, collect and evaluate data from their investigations, and develop scientific recommendations based upon their findings.

BENCHMARK CODE	BENCHMARK
SC.912.N.4.1	Explain how scientific knowledge and reasoning provide an empirically-based perspective to inform society's decision making. *Content Complexity:* Level 2: Basic Application of Skills & Concepts **Related Access Point(s)** SC.912.N.4.In.1 Identify ways scientific knowledge and problem solving benefit people. SC.912.N.4.Su.1 Recognize ways scientific knowledge and problem solving benefit people. SC.912.N.4.Pa.1 Recognize science information that helps people.
SC.912.N.4.2	Weigh the merits of alternative strategies for solving a specific societal problem by comparing a number of different costs and benefits, such as human, economic, and environmental. *Content Complexity:* Level 3: Strategic Thinking & Complex Reasoning **Related Access Point(s)** SC.912.N.4.In.2 Identify that costs and benefits must be considered when choosing a strategy for solving a problem. SC.912.N.4.Su.2 Recognize that some strategies may cost more to solve a problem. SC.912.N.4.Pa.2 Recognize a local problem that can be solved by science.

Body of Knowledge: COMPUTER SCIENCE - PERSONAL, COMMUNITY, GLOBAL, AND ETHICAL IMPACT (DISCONTINUED AFTER 2024-2025)

Standard 1: Responsible use of technology and information

BENCHMARK CODE	BENCHMARK
SC.912.CS-PC.1.1 (Discontinued after 2024-2025)	Compare and contrast appropriate and inappropriate social networking behaviors.
SC.912.CS-PC.1.2 (Discontinued after 2024-2025)	Describe and demonstrate ethical and responsible use of modern communication media and devices.
SC.912.CS-PC.1.3 (Discontinued after 2024-2025)	Evaluate the impacts of irresponsible use of information (e.g., plagiarism and falsification of data) on collaborative projects.
SC.912.CS-PC.1.4 (Discontinued after 2024-2025)	Explain the principles of cryptography by examining encryption, digital signatures, and authentication methods (e.g., explain why and how certificates are used with “https” for authentication and encryption).
SC.912.CS-PC.1.5 (Discontinued after 2024-2025)	Implement an encryption, digital signature, or authentication method.
SC.912.CS-PC.1.6 (Discontinued after 2024-2025)	Describe computer security vulnerabilities and methods of attack, and evaluate their social and economic impact on computer systems and people.

Standard 2: The impact of computing resources on local and global society	
BENCHMARK CODE	**BENCHMARK**
SC.912.CS-PC.2.1 (Discontinued after 2024-2025)	Describe how the Internet facilitates global communication.
SC.912.CS-PC.2.2 (Discontinued after 2024-2025)	Identify ways to use technology to support lifelong learning.
SC.912.CS-PC.2.3 (Discontinued after 2024-2025)	Discuss and analyze the impact of values and points of view that are presented in media messages (e.g., racial, gender, and political).
SC.912.CS-PC.2.4 (Discontinued after 2024-2025)	Analyze the positive and negative impacts of technology on popular culture and personal life.
SC.912.CS-PC.2.5 (Discontinued after 2024-2025)	Construct strategies to combat cyberbullying or online harassment.
SC.912.CS-PC.2.6 (Discontinued after 2024-2025)	Describe the impact of computing on business and commerce (e.g., automated inventory processing, financial transactions, e-commerce, virtualization, and cloud computing).
SC.912.CS-PC.2.7 (Discontinued after 2024-2025)	Describe how technology has changed the way people build and manage organizations and how technology impacts personal life.
SC.912.CS-PC.2.8 (Discontinued after 2024-2025)	Evaluate ways in which adaptive technologies may assist users with special needs.
SC.912.CS-PC.2.9 (Discontinued after 2024-2025)	Explain how societal and economic factors are affected by access to critical information.
SC.912.CS-PC.2.10 (Discontinued after 2024-2025)	Describe and evaluate the challenges (e.g., political, social, and economic) in providing equal access and distribution of technology in a global society.
SC.912.CS-PC.2.11 (Discontinued after 2024-2025)	Construct writings and/or communications using developmentally appropriate terminology.
SC.912.CS-PC.2.12 (Discontinued after 2024-2025)	Explore a variety of careers to which computing is central.
SC.912.CS-PC.2.13 (Discontinued after 2024-2025)	Predict future careers and the technologies that may exist based on current technology trends.

Standard 3: Evaluation of digital information resources	
BENCHMARK CODE	**BENCHMARK**
SC.912.CS-PC.3.1 (Discontinued after 2024-2025)	Evaluate the quality of digital resources for reliability (i.e., currency, relevancy, authority, accuracy, and purpose of digital information).
SC.912.CS-PC.3.2 (Discontinued after 2024-2025)	Evaluate the accuracy, relevance, comprehensiveness, appropriateness, and bias of electronic information resources.
SC.912.CS-PC.3.3 (Discontinued after 2024-2025)	Conduct research using peer reviewed articles, newspapers, magazine articles, and online books.
SC.912.CS-PC.3.4 (Discontinued after 2024-2025)	Analyze and evaluate public/government resources and describe how using these resources for communication can affect change.

Standard 4: Security, privacy, information sharing, ownership, licensure and copyright	
BENCHMARK CODE	**BENCHMARK**
SC.912.CS-PC.4.1 (Discontinued after 2024-2025)	Describe how different types of software licenses (e.g., open source and proprietary licenses) can be used to share and protect intellectual property.
SC.912.CS-PC.4.2 (Discontinued after 2024-2025)	Explain how access to information may not include the right to distribute the information.
SC.912.CS-PC.4.3 (Discontinued after 2024-2025)	Describe differences between open source, freeware, and proprietary software licenses, and how they apply to different types of software.
SC.912.CS-PC.4.4 (Discontinued after 2024-2025)	Describe security and privacy issues that relate to computer networks.
SC.912.CS-PC.4.5 (Discontinued after 2024-2025)	Identify computer-related laws and analyze their impact on digital privacy, security, intellectual property, network access, contracts, and harassment.
SC.912.CS-PC.4.6 (Discontinued after 2024-2025)	Describe security and privacy issues that relate to computer networks including the permanency of data on the Internet, online identity, and privacy.
SC.912.CS-PC.4.7 (Discontinued after 2024-2025)	Evaluate and use digital citation tools to cite sources.
SC.912.CS-PC.4.8 (Discontinued after 2024-2025)	Describe the impact of government regulation on privacy and security.

Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION AND COLLABORATION (DISCONTINUED AFTER 2024-2025)	
Standard 1: Communication and collaboration	
BENCHMARK CODE	**BENCHMARK**
SC.912.CS-CC.1.1 (Discontinued after 2024-2025)	Evaluate modes of communication and collaboration.
SC.912.CS-CC.1.2 (Discontinued after 2024-2025)	Select appropriate tools within a project environment to communicate with project team members.
SC.912.CS-CC.1.3 (Discontinued after 2024-2025)	Collect, analyze, and present information using a variety of computing devices (e.g., probes, sensors, and handheld devices).
SC.912.CS-CC.1.4 (Discontinued after 2024-2025)	Develop a collaborative digital product using collaboration tools (e.g., version control systems and integrated development environments).
SC.912.CS-CC.1.5 (Discontinued after 2024-2025)	Communicate and publish key ideas and details to a variety of audiences using digital tools and media-rich resources.
SC.912.CS-CC.1.6 (Discontinued after 2024-2025)	Identify how collaboration influences the design and development of software artifacts.
SC.912.CS-CC.1.7 (Discontinued after 2024-2025)	Evaluate program designs and implementations written by others for readability and usability.

Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION SYSTEMS AND COMPUTING (DISCONTINUED AFTER 2024-2025)

Standard 1: Modeling and simulations

BENCHMARK CODE	BENCHMARK
SC.912.CS-CS.1.1 (Discontinued after 2024-2025)	Analyze data and identify real-world patterns through modeling and simulation.
SC.912.CS-CS.1.2 (Discontinued after 2024-2025)	Formulate, refine, and test scientific hypotheses using models and simulations.
SC.912.CS-CS.1.3 (Discontinued after 2024-2025)	Explain how data analysis is used to enhance the understanding of complex natural and human systems.
SC.912.CS-CS.1.4 (Discontinued after 2024-2025)	Compare techniques for analyzing massive data collections.
SC.912.CS-CS.1.5 (Discontinued after 2024-2025)	Represent and understand natural phenomena using modeling and simulation.

Standard 2: Problem solving and Algorithms

BENCHMARK CODE	BENCHMARK
SC.912.CS-CS.2.1 (Discontinued after 2024-2025)	Explain intractable problems and understand that problems exists that are computationally unsolvable (e.g., classic intractable problems include the Towers of Hanoi and the Traveling Salesman Problem -TSP).
SC.912.CS-CS.2.2 (Discontinued after 2024-2025)	Describe the concept of parallel processing as a strategy to solve large problems.
SC.912.CS-CS.2.3 (Discontinued after 2024-2025)	Demonstrate concurrency by separating processes into threads of execution and dividing data into parallel streams.
SC.912.CS-CS.2.4 (Discontinued after 2024-2025)	Divide a complex problem into simpler parts by using the principle of abstraction to manage complexity (i.e., by using searching and sorting as abstractions) using predefined functions and parameters, classes, and methods.
SC.912.CS-CS.2.5 (Discontinued after 2024-2025)	Evaluate classical algorithms and implement an original algorithm.
SC.912.CS-CS.2.6 (Discontinued after 2024-2025)	Evaluate various data types and data structures.
SC.912.CS-CS.2.7 (Discontinued after 2024-2025)	Explain how sequence, selection, iteration, and recursion are building blocks of algorithms.
SC.912.CS-CS.2.8 (Discontinued after 2024-2025)	Decompose a problem by defining new functions and classes.
SC.912.CS-CS.2.9 (Discontinued after 2024-2025)	Evaluate ways to characterize how well algorithms perform and that two algorithms can perform differently for the same task.
SC.912.CS-CS.2.10 (Discontinued after 2024-2025)	Design and implement a simple simulation algorithm to analyze, represent, and understand natural phenomena.
SC.912.CS-CS.2.11 (Discontinued after 2024-2025)	Evaluate algorithms by their efficiency, correctness, and clarity (e.g., by analyzing and comparing execution times, testing with multiple inputs or data sets, and by debugging).

SC.912.CS-CS.2.12 (Discontinued after 2024-2025)	Compare and contrast simple data structures and their uses.
SC.912.CS-CS.2.13 (Discontinued after 2024-2025)	Explain how automated software testing can reduce the cost of the testing effort.
SC.912.CS-CS.2.14 (Discontinued after 2024-2025)	Explain what tools are applied to provide automated testing environments.

Standard 3: Digital tools

BENCHMARK CODE	BENCHMARK
SC.912.CS-CS.3.1 (Discontinued after 2024-2025)	Describe digital tools or resources to use for a real-world task based on their efficiency and effectiveness.
SC.912.CS-CS.3.2 (Discontinued after 2024-2025)	Evaluate different file types for different purposes (e.g., word processing, images, music, and three-dimensional drawings).

Standard 4: Hardware and software

BENCHMARK CODE	BENCHMARK
SC.912.CS-CS.4.1 (Discontinued after 2024-2025)	Describe a software development process that is used to solve problems at different software development stages (e.g., design, coding, testing, and verification).
SC.912.CS-CS.4.2 (Discontinued after 2024-2025)	Describe the organization of a computer and identify its principal components by name, function, and the flow of instructions and data between components (e.g., storage devices, memory, CPU, graphics processors, IO and network ports).
SC.912.CS-CS.4.3 (Discontinued after 2024-2025)	Differentiate between multiple levels of hardware and software (such as CPU hardware, operating system, translation, and interpretation) that support program execution.
SC.912.CS-CS.4.4 (Discontinued after 2024-2025)	Evaluate various forms of input and output (e.g., IO and storage devices and digital media).
SC.912.CS-CS.4.5 (Discontinued after 2024-2025)	Develop and evaluate criteria for purchasing or upgrading computer system hardware (e.g., Wi-Fi, mobile devices, home and office machines).
SC.912.CS-CS.4.6 (Discontinued after 2024-2025)	Develop criteria for selecting appropriate hardware and software when solving a specific real-world problem (such as business, educational, personal).
SC.912.CS-CS.4.7 (Discontinued after 2024-2025)	Develop a software artifact (independently and collaboratively) in phases (or stages) according to a common software development methodology (e.g., Waterfall or Spiral model).
SC.912.CS-CS.4.8 (Discontinued after 2024-2025)	Evaluate the basic components of computer networks.
SC.912.CS-CS.4.9 (Discontinued after 2024-2025)	Analyze historical trends in hardware and software to assess implications on computing devices for the future (e.g., upgrades for power/energy, computation capacity, speed, size, ease of use).

Standard 5: Network systems

BENCHMARK CODE	BENCHMARK
SC.912.CS-CS.5.1 (Discontinued after 2024-2025)	Identify and select the most appropriate file format based on trade-offs (e.g., open file formats, text, proprietary and binary formats, compression and encryption formats).

SC.912.CS-CS.5.2 (Discontinued after 2024-2025)	Describe the issues that impact network functionality (e.g., latency, bandwidth, firewalls and server capability).
SC.912.CS-CS.5.3 (Discontinued after 2024-2025)	Describe common network protocols, such as IP, TCP, SMTP, HTTP, and FTP, and how these are applied by client-server and peer-to-peer networks.

Standard 6: Human â€“ Computer interactions and Artificial Intelligence	
BENCHMARK CODE	**BENCHMARK**
SC.912.CS-CS.6.1 (Discontinued after 2024-2025)	Describe the unique features of computers embedded in mobile devices and vehicles.
SC.912.CS-CS.6.2 (Discontinued after 2024-2025)	Describe the common physical and cognitive challenges faced by users when learning to use software and hardware.
SC.912.CS-CS.6.3 (Discontinued after 2024-2025)	Describe the process of designing software to support specialized forms of human-computer interaction.
SC.912.CS-CS.6.4 (Discontinued after 2024-2025)	Explain the notion of intelligent behavior through computer modeling and robotics.
SC.912.CS-CS.6.5 (Discontinued after 2024-2025)	Describe common measurements of machine intelligence (e.g., Turing test).
SC.912.CS-CS.6.6 (Discontinued after 2024-2025)	Describe a few of the major branches of artificial intelligence (e.g., expert systems, natural language processing, machine perception, machine learning).
SC.912.CS-CS.6.7 (Discontinued after 2024-2025)	Describe major applications of artificial intelligence and robotics, including, but not limited to, the medical, space, and automotive fields.

Body of Knowledge: COMPUTER SCIENCE - COMPUTER PRACTICES AND PROGRAMMING	
Standard 1: Data analysis	
BENCHMARK CODE	**BENCHMARK**
SC.912.CS-CP.1.1 (Discontinued after 2024-2025)	Evaluate effective uses of Boolean logic (e.g., using “not”, “or”, “and”) to refine searches for individual and collaborative projects.
SC.912.CS-CP.1.2 (Discontinued after 2024-2025)	Perform advanced searches to locate information and/or design a data-collection approach to gather original data (e.g., qualitative interviews, surveys, prototypes, and simulations).
SC.912.CS-CP.1.3 (Discontinued after 2024-2025)	Analyze and manipulate data collected by a variety of data collection techniques to support a hypothesis.
SC.912.CS-CP.1.4 (Discontinued after 2024-2025)	Collect real-time data from sources such as simulations, scientific and robotic sensors, and device emulators, using this data to formulate strategies or algorithms to solve advanced problems.

Standard 2: Computer programming basics	
BENCHMARK CODE	**BENCHMARK**
SC.912.CS-CP.2.1 (Discontinued after 2024-2025)	Explain the program execution process (by an interpreter and in CPU hardware).

SC.912.CS-CP.2.2 (Discontinued after 2024-2025)	Design and implement a program using global and local scope.
SC.912.CS-CP.2.3 (Discontinued after 2024-2025)	Implement a program using an industrial-strength integrated development environment.
SC.912.CS-CP.2.4 (Discontinued after 2024-2025)	Facilitate programming solutions using application programming interfaces (APIs) and libraries.
SC.912.CS-CP.2.5 (Discontinued after 2024-2025)	Explain the role of an API in the development of applications and the distinction between a programming language's syntax and the API.
SC.912.CS-CP.2.6 (Discontinued after 2024-2025)	Describe a variety of commonly used programming languages.
SC.912.CS-CP.2.7 (Discontinued after 2024-2025)	Classify programming languages by paradigm and application domain (e.g., imperative, functional, and logic languages) and evaluate their application to domains such as web programming, symbolic processing and data/numerical processing.

Standard 3: Programming applications	
BENCHMARK CODE	**BENCHMARK**
SC.912.CS-CP.3.1 (Discontinued after 2024-2025)	Create a computational artifact, individually and collaboratively, followed by reflection, analysis, and iteration (e.g., data-set analysis program for science and engineering fair, capstone project that includes a program, term research project based on program data).
SC.912.CS-CP.3.2 (Discontinued after 2024-2025)	Create mobile computing applications and/or dynamic web pages through the use of a variety of design and development tools, programming languages, and mobile devices/emulators.

Health Education Standards

GRADE: K

Strand: RESILIENCY (STARTING 2024-2025)	
Standard 1: Character	
BENCHMARK CODE	**BENCHMARK**
HE.K.R.1.1	Define and give examples of kindness and caring.
HE.K.R.1.2	Demonstrate the ability to take turns and share with others.
HE.K.R.1.3	Describe ways to show respect to others.
HE.K.R.1.4	Identify the difference between the truth and a lie.

Standard 2: Personal Responsibility	
BENCHMARK CODE	**BENCHMARK**
HE.K.R.2.1	Identify healthy choices that affect personal wellness.
HE.K.R.2.2	Demonstrate the ability to follow rules and directions.
HE.K.R.2.3	Discuss the value of goal setting.
HE.K.R.2.4	Identify and recognize basic feelings. *Clarifications*: *Clarification 1:* Instruction includes sad, mad, happy, excited, and worried.
HE.K.R.2.5	Identify personal strengths and actions individuals can do independently. *Clarifications*: *Clarification 1:* Instruction includes social strengths including listening, sharing, adapting, empathy, showing courage, and leadership.

Standard 3: Mentorship and Citizenship	
BENCHMARK CODE	**BENCHMARK**
HE.K.R.3.1	Identify the roles and responsibilities of trusted adults. *Clarifications*: *Clarification 1:* Trusted adults may include parents, teachers, police officers, school counselors, and grandparents.
HE.K.R.3.2	Identify characteristics of a good citizen in school and the community. *Clarifications*: *Clarification 1:* Instruction includes following rules, listening, and being a good friend.

Standard 4: Critical Thinking and Problem Solving	
BENCHMARK CODE	**BENCHMARK**
HE.K.R.4.1	Identify when help is needed and who to ask for help.
HE.K.R.4.2	Identify the importance of sharing thoughts and ideas to solve problems.
HE.K.R.4.3	Discuss ways to work together to solve problems.

Strand: PERSONAL HEALTH CONCEPTS

Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.K.PHC.1.1	Identify healthy behaviors that affect personal health. *Clarifications*: *Clarification 1:* Instruction includes personal care behaviors, including brushing teeth, having adequate sleep, personal hygiene, physical activity, and practicing healthy eating habits.
HE.K.PHC.1.2	Understand how you can prevent childhood injuries in the home, school, and community settings. *Clarifications*: *Clarification 1:* Instruction includes wearing a helmet and flotation devices. *Clarification 2:* Instruction includes identifying poisons and other harmful substances.
HE.K.PHC.1.3	Recognize there are body parts inside and outside of the body. *Clarifications*: *Clarification 1:* Instruction includes the heart, brain, muscles, and skin.
HE.K.PHC.1.4	Recognize ways you can prevent common communicable diseases. *Clarifications*: *Clarification 1:* Instruction includes washing hands, covering mouth to cough and sneeze, and flushing toilets.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.K.PHC.2.1	Identify members of the school and community who support personal health practices and behaviors. *Clarifications*: *Clarification 1:* Members include teachers, counselors, nurses, doctors, and first responders.
HE.K.PHC.2.2	Name healthy behaviors that family members should practice. *Clarifications*: *Clarification 1:* Instruction includes brushing teeth and staying home when sick.
HE.K.PHC.2.3	Identify safe and unsafe examples of internet use. *Clarifications*: *Clarification 1:* Instruction includes safe uses such as playing games, watching appropriate television shows, and learning.

	Clarification 2: Instruction includes unsafe uses such as sharing private information and interacting with unknown senders. *Clarification 3:* Instruction includes unsafe screen time leading to health issues.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.K.PHC.3.1	Name situations when a health-related decision can be made individually or when assistance is needed. *Clarifications*: *Clarification 1:* Instruction includes water safety, following school rules, and practicing good hygiene.
HE.K.PHC.3.2	Recognize healthy options to personal health-related issues or problems. *Clarifications*: *Clarification 1:* Instruction includes visiting the doctor, obeying safety rules, and practicing emergency preparedness. *Clarification 2:* Instruction includes limiting screen time and television shows to less than one hour per day to increase physical and mental wellbeing. *Clarification 3:* Instruction includes reporting unsafe behavior, in person and on the internet, to a trusted adult.
HE.K.PHC.3.3	Recognize the consequences of not following rules/practices when making healthy and safe decisions. *Clarifications*: *Clarification 1:* Instruction includes injury to self and/or others.
HE.K.PHC.3.4	Define a personal health goal and how it relates to overall health. *Clarifications*: *Clarification 1:* Instruction includes importance of goals. *Examples*: *Example:* Eating a healthy breakfast, brushing teeth twice a day, engaging in daily physical activity, limiting sugary drinks, increasing intake of fruits and vegetables.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.K.PHC.4.1	Identify the appropriate responses to unwanted, unsafe, and threatening situations. *Clarifications*: *Clarification 1:* Instruction includes seeking safety, running for help, and talking to a trusted adult.

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.K.CEH.1.1	Recognize ways the community encourages a healthy environment.

	Examples: *Example:* Pedestrian bridges, crosswalks, crossing guards, law enforcement.
HE.K.CEH.1.2	Recognize ways in the community to prevent common communicable diseases. *Clarifications*: *Clarification 1:* Instruction includes washing hands, covering mouth to cough and sneeze, and flushing toilets.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.K.CEH.2.1	Explain the importance of rules to maintain health. *Clarifications*: *Clarification 1:* Instruction includes additional classroom and school rules for healthy behaviors. *Examples*: *Example:* Walking instead of running, waiting your turn, keeping hands and feet to yourself.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.K.CEH.3.1	Recognize ways the community can prevent childhood injuries in the school and community settings. *Examples*: *Example:* Community/school health fairs, immunizations, car seat installation, etc.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.K.CEH.4.1	Encourage others make positive health choices. *Clarifications*: *Clarification 1:* Instruction includes encouraging others to choose healthy options, selecting nutritious food, participating in physical activity, and practicing personal hygiene. *Examples*: *Example:* Encouraging hand washing.

Strand: CONSUMER HEALTH

Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.K.CH.1.1	Recognize warning labels and signs on hazardous products and places. *Clarifications*: *Clarification 1:* Warning labels and signs include poison symbol, universal symbols for “No” and “Do not touch,” and crosswalk signals.

Standard 3: Prevention and Decision Making

BENCHMARK CODE	BENCHMARK
HE.K.CH.3.1	Define healthy and unhealthy choices. *Clarifications*: *Clarification 1:* Instruction includes limiting screen time and playing outdoors. *Clarification 2:* Instruction includes choosing healthy foods.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.K.CH.4.1	Define ways to ask for support from a trusted adult or professional. *Clarifications*: *Clarification 1:* Instruction includes asking to speak to a trusted adult when help is needed. *Clarification 2:* Instruction includes seeking out the school nurse to help with a health-related problem.

GRADE: 1

Strand: RESILIENCY (STARTING 2024-2025)	
Standard 1: Character	
BENCHMARK CODE	**BENCHMARK**
HE.1.R.1.1	Discuss ways to respect personal property and personal space of others.
HE.1.R.1.2	Describe the traits of a good friend.
HE.1.R.1.3	Identify the benefits of sharing and cooperation.
HE.1.R.1.4	Define and give examples of honesty.
HE.1.R.1.5	Identify strategies to overcome a challenge.

Standard 2: Personal Responsibility	
BENCHMARK CODE	**BENCHMARK**
HE.1.R.2.1	Identify my role and responsibilities in the school, community, and family. *Clarifications*: *Clarification 1:* Instruction includes following directions, rules, and procedures.
HE.1.R.2.2	Establish a short-term goal as a class and take action toward achieving the goal.
HE.1.R.2.3	Identify the characteristics of a responsible decision maker.
HE.1.R.2.4	Describe how individual actions can affect others. *Clarifications*: *Clarification 1:* Instruction includes sad, mad, happy, excited, and worried.
HE.1.R.2.5	Identify strategies to discover and demonstrate personal strengths. *Clarifications*: *Clarification 1:* Instruction includes sense of pride, working toward intrinsic motivation, and experiencing a sense of accomplishment.
HE.1.R.2.6	Identify healthy ways to express needs and wants.

	Clarifications: *Clarification 1:* Instruction includes asking for assistance from a trusted adult.

Standard 3: Mentorship and Citizenship	
BENCHMARK CODE	**BENCHMARK**
HE.1.R.3.1	Identify characteristics of a leader in the school community.
HE.1.R.3.2	Demonstrate the characteristics of a good citizen in school and the community.

Standard 4: Critical Thinking and Problem Solving	
BENCHMARK CODE	**BENCHMARK**
HE.1.R.4.1	Identify the importance of working together to solve problems.
HE.1.R.4.2	Identify the importance of sharing thoughts and ideas as an individual and as part of a group.
HE.1.R.4.3	Understand that conflict may arise when working together. *Clarifications*: *Clarification 1:* Instruction includes differing perspectives.

Strand: PERSONAL HEALTH CONCEPTS	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.1.PHC.1.1	Recognize how healthy behaviors affect personal health. *Clarifications*: *Clarification 1:* Instruction includes eating breakfast, playing safely on the playground, wearing a helmet on a bike, and participating in moderate to vigorous physical activity.
HE.1.PHC.1.2	Identify how you can prevent childhood injuries in the home, school, and community settings. *Clarifications*: *Clarification 1:* Instruction includes safety practices such as water safety, pedestrian safety, bicycle safety and playground rules. *Clarification 2:* Instruction includes school safety.
HE.1.PHC.1.3	Identify the correct names of human body parts. *Clarifications*: *Clarification 1:* Body parts include stomach, intestines, heart, lungs, skin, muscles, and bones.
HE.1.PHC.1.4	Describe ways you can prevent common communicable diseases. *Clarifications*: *Clarification 1:* Instruction includes washing hands, covering mouth to cough and sneeze, and not sharing food or utensils.
HE.1.PHC.1.5	Tell about behaviors that avoid or reduce health risks. *Clarifications*: *Clarification 1:* Instruction focuses on following rules and personal hygiene.

	Clarification 2: Instruction includes limiting screen time to less than one hour per day to increase physical and mental wellbeing. *Clarification 3:* Instruction includes reporting unsafe behavior, in person and on the internet, to a trusted adult. *Examples*: *Example:* Swimming with a buddy and following playground rules.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.1.PHC.2.1	Identify how children learn health behaviors from family and friends. *Clarifications*: *Clarification 1:* Instruction includes family and parents encouraging healthy behaviors such as eating healthy dinners together, physical activities together, setting bedtimes, and screen time rules. *Clarification 2:* Instruction includes friends exhibiting positive behaviors such as sharing and kindness.
HE.1.PHC.2.2	Explain why personal information should not be shared on the internet. *Clarifications*: *Clarification 1:* Instruction includes dangers of unknown senders. *Examples*: *Example:* Personal information to include address, phone numbers, health information, passwords.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.1.PHC.3.1	Describe situations when a health-related decision can be made individually or when assistance is needed. *Clarifications*: *Clarification 1:* Instruction includes crossing a street and participating in water activities.
HE.1.PHC.3.2	Identify healthy options to personal health-related issues or problems. *Clarifications*: *Clarification 1:* Instruction includes safety practices such as wearing a bicycle helmet or water flotation devices. *Clarification 2:* Instruction includes reporting danger or unsafe activities to a trusted adult.
HE.1.PHC.3.3	Explain the consequences of not following rules/practices when making healthy and safe decisions. *Clarifications*:

	Clarification 1: Instruction includes spreading germs that can cause illness in oneself or others. *Clarification 2:* Instruction includes being physically hurt or hurting others on the playground, on the bus, in the classroom, at home, and in the community.
HE.1.PHC.3.4	Establish a short-term health goal as a class and monitor progress toward achieving the goal. *Clarifications*: *Clarification 1:* To monitor progress, examples include observation, charting, etc. *Examples*: *Example:* Washing hands after using bathroom and before meals, walking quietly in line, raising your hand, etc.

Standard 4: Advocacy

BENCHMARK CODE	BENCHMARK
HE.1.PHC.4.1	Describe appropriate responses to unwanted, unsafe, and threatening situations. *Clarifications*: *Clarification 1:* Instruction includes talking to a trusted adult and/or parent. *Clarification 2:* Instruction includes seeking safety and running for help. *Clarification 3:* Instruction includes asking for help with safety items.
HE.1.PHC.4.2	Identify ways one can make request to promote personal health. *Clarifications*: *Clarification 1:* Instruction includes asking for items such as a life jacket or hand soap. *Clarification 2:* Instruction includes asking for help with tasks such as fixing a seat belt and crossing the street.

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.1.CEH.1.1	Identify ways the community encourages a healthy environment. *Examples*: *Example:* Pedestrian bridges, crosswalks, crossing guards, law enforcement.
HE.1.CEH.1.2	Understand ways to prevent common communicable diseases in the community. *Clarifications*: *Clarification 1:* Instruction focuses on personal hygiene to include washing hands, covering mouth to cough and sneeze, and not sharing food or utensils.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK

HE.1.CEH.2.1	Recognize health consequences for not following rules. *Clarifications*: *Clarification 1:* Instruction includes potential negative consequences such as injuries, arguments, and hurt feelings.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.1.CEH.3.1	Identify ways in the community to prevent childhood injuries in the school and community settings. *Examples*: *Example:* Community/school health fairs, immunizations, booster seat installation, swimming programs, etc.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.1.CEH.4.1	Help others to make positive health choices. *Clarifications*: *Clarification 1:* Instruction includes following rules. *Clarification 2:* Instruction includes selecting healthy foods. *Clarification 3:* Instruction includes participating in physical activities.

Strand: CONSUMER HEALTH	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.1.CH.1.1	Determine the meaning of warning labels and signs on hazardous products and places. *Examples*: *Example:* Hazardous products may include medication bottles, alcohol, and other substances; hazardous places may include no-entry zones or hot stoves. *Example:* Warning labels and signs include poison symbol, universal symbols for “No” and “Do not touch,” and crosswalk signals.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.1.CH.3.1	List healthy and unhealthy choices for personal health and safety. *Clarifications*: *Clarification 1:* Instruction includes wearing a helmet. *Clarification 2:* Instruction includes limiting screen time and choosing physical activity.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.1.CH.4.1	Discuss ways to ask for support from a trusted adult or professional. *Clarifications*: *Clarification 1:* Instruction includes asking to speak to a trusted adult when help is needed. *Clarification 2:* Instruction includes seeking out the school nurse to help with a health-related problem.

GRADE: 2

Strand: RESILIENCY (STARTING 2024-2025)	
Standard 1: Character	
BENCHMARK CODE	**BENCHMARK**
HE.2.R.1.1	Identify the benefits of showing kindness and treating others with respect.
HE.2.R.1.2	Identify what a conflict is and how disagreements can happen.
HE.2.R.1.3	Explain the importance of being truthful.

Standard 2: Personal Responsibility	
BENCHMARK CODE	**BENCHMARK**
HE.2.R.2.1	Identify ways to make positive contributions to the wellbeing of the school and the community.
HE.2.R.2.2	Identify personal goals and strategies to achieve those goals.
HE.2.R.2.3	Demonstrate healthy ways to express needs, wants, and listening skills. *Clarifications*: *Clarification 1:* Instruction includes paying attention, making eye contact, asking for help, etc.
HE.2.R.2.4	Identify personal strengths and areas for improvement.

Standard 3: Mentorship and Citizenship	
BENCHMARK CODE	**BENCHMARK**
HE.2.R.3.1	Identify ways to benefit the school and the community. *Clarifications*: *Clarification 1:* Instruction includes conservation, recycling, being a classroom helper, and volunteering.
HE.2.R.3.2	Identify characteristics of a community leader.

Standard 4: Critical Thinking and Problem Solving	
BENCHMARK CODE	**BENCHMARK**
HE.2.R.4.1	Identify strategies to work together to solve problems.
HE.2.R.4.2	Identify how disagreements can be settled using conflict resolution skills.

Strand: PERSONAL HEALTH CONCEPTS

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.2.PHC.1.1	Discuss how healthy behaviors affect personal health. *Clarifications*: *Clarification 1:* Instruction includes eating breakfast, playing safely on the playground, wearing a helmet on a bike, and participating in moderate to vigorous physical activity.
HE.2.PHC.1.2	Describe ways you can prevent personal injuries. *Clarifications*: *Clarification 1:* Instruction includes safety practices such as water safety, pedestrian safety, and bicycle safety. *Clarification 2:* Instruction includes recognizing abusive behaviors.
HE.2.PHC.1.3	Recognize the locations and functions of major human organs. *Clarifications*: *Clarification 1:* Instruction includes the functions of the heart, lungs, and muscles in relation to cardiovascular health.
HE.2.PHC.1.4	Select trusted adults and professionals who can help promote health. *Clarifications*: *Clarification 1:* Instruction includes individuals such as family members, educators, and first responders. *Clarification 2:* Instruction includes identifying who to report suspicious internet behavior to.
HE.2.PHC.1.5	Recognize healthy practices and behaviors to maintain or improve personal health. *Clarifications*: *Clarification 1:* Instruction includes seeking a safe environment and seeking help. *Clarification 2:* Instruction includes recognizing safe websites to visit and television shows to watch.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.2.PHC.2.1	Describe how outside influences, family, and friends can influence personal health decisions. *Clarifications*: *Clarification 1:* Instruction includes consistent home safety rules. *Clarification 2:* Instruction includes telling the truth and treating others with respect.
HE.2.PHC.2.2	Describe ways a safe, healthy home environment can promote personal health. *Clarifications*: *Clarification 1:* Instruction includes secured poisonous products and substances.

	Clarification 2: Instruction includes home safety plan for events such as fires and hurricanes.
HE.2.PHC.2.3	Describe the attributes of a safe and responsible internet user. *Clarifications*: *Clarification 1:* Instruction includes protecting personal information, reporting cyberbullying, and recognizing inappropriate content/contact. *Clarification 2:* Instruction includes limiting screen time to avoid health risks to vision, sleep quality, and mental health.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.2.PHC.3.1	Differentiate between situations when a health-related decision can be made individually or when assistance is needed. *Clarifications*: *Clarification 1:* Instruction includes determining when a friend is in trouble. *Clarification 2:* Instruction includes choosing safe environments and safe adults to trust.
HE.2.PHC.3.2	List healthy options to health-related issues or problems. *Clarifications*: *Clarification 1:* Instruction includes safety practices such as wearing a bicycle helmet or water flotation devices. *Clarification 2:* Instruction includes peer cooperation and communication.
HE.2.PHC.3.3	Compare the consequences of following/not following rules/practices when making healthy and safe decisions. *Clarifications*: *Clarification 1:* Instruction includes staying home when sick vs. attending school and spreading germs that can cause illness in oneself or others. *Clarification 2:* Instruction includes being physically hurt or hurting others in your environment.
HE.2.PHC.3.4	Discuss short-term and long-term goals and their importance to physical health. *Clarifications*: *Clarification 1:* Instruction includes the difference between short- and long-term goals. *Examples*: *Example:* Daily, weekly, monthly activities that impact physical health.
HE.2.PHC.3.5	Establish a short-term health goal as a class and monitor progress toward achieving the goal. *Clarifications*: *Clarification 1:* To monitor progress, examples include observation, charting, etc. *Examples*: *Example:* Washing hands after using bathroom and before meals, walking quietly in line, raising your hand, etc.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.2.PHC.4.1	Demonstrate appropriate responses to unwanted, unsafe, and threatening situations. *Clarifications*: *Clarification 1:* Instruction includes talking to a trusted adult and/or parent. *Clarification 2:* Instruction includes seeking safety and running for help. *Clarification 3:* Instruction includes asking for help with safety items, e.g., a life jacket, hand soap, buckling a seat belt, crossing the street, etc

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.2.CEH.1.1	Identify how healthy behaviors affect the community. *Clarifications*: *Clarification 1:* Instruction includes practicing healthy hygiene to prevent spread of disease.
HE.2.CEH.1.2	Describe ways to prevent common communicable diseases in the community. *Clarifications*: *Clarification 1:* Instruction focuses on personal hygiene to include washing hands, covering mouth to cough and sneeze, and not sharing food or utensils.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.2.CEH.2.1	Explain the ways that rules make the classroom, school, and community safer. *Clarifications*: *Clarification 1:* Discussion includes rules such as walking instead of running, waiting your turn, and following traffic and water safety laws.
HE.2.CEH.2.2	Describe how the school and community influence health behaviors of children. *Examples*: *Example:* Nutrition in school lunches, community gardens, recycling, school health fairs.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.2.CEH.3.1	Describe ways the community can prevent childhood injuries in the school and community settings. *Examples*: *Example:* Community/school health fairs, immunizations, swimming programs, etc.

Standard 4: Advocacy

BENCHMARK CODE	BENCHMARK
HE.2.CEH.4.1	Support peers when making positive health choices. *Clarifications*: Clarification 1: Instruction includes using a buddy system and helping others. Clarification 2: Instruction includes recognizing trusted adults as a resource.

Strand: CONSUMER HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.2.CH.1.1	Understand the meaning of warning labels and signs on hazardous products. *Examples*: *Example:* Hazardous products may include medication bottles, alcohol, and other substances; hazardous places may include no-entry zones, hazardous waste zones, and hot stoves.

Standard 3: Prevention and Decision Making

BENCHMARK CODE	BENCHMARK
HE.2.CH.3.1	Describe healthy and unhealthy choices. *Clarifications*: *Clarification 1:* Instruction includes limiting screen time, including television, safe websites and video games, to less than two hours per day. *Clarification 2:* Instruction includes nutritional food choices instead of unhealthy food in the cafeteria. *Clarification 3:* Instruction includes the benefits of adequate water consumption.

Standard 4: Advocacy

BENCHMARK CODE	BENCHMARK
HE.2.CH.4.1	Practice ways to ask for support from a trusted adult or professional. *Clarifications*: *Clarification 1:* Instruction includes asking to speak to a trusted adult when help is needed. *Clarification 2:* Instruction includes seeking out the school nurse to help with a health-related problem.

GRADE: 3

Strand: RESILIENCY (STARTING 2024-2025)

Standard 1: Character	
BENCHMARK CODE	**BENCHMARK**
HE.3.R.1.1	Identify skills needed when working with others. *Clarifications*: *Clarification 1:* Instruction includes listening, cooperating, taking turns, and compromise.
HE.3.R.1.2	Identify ways to display trustworthiness.
HE.3.R.1.3	Discuss ways to be loyal to friends and family.

Standard 2: Personal Responsibility	
BENCHMARK CODE	**BENCHMARK**
HE.3.R.2.1	Categorize resources used to achieve a personal goal.
HE.3.R.2.2	Identify ways in which my decisions affect others.
HE.3.R.2.3	Describe positive ways to deal with failure and learn from challenges.
HE.3.R.2.4	Discuss how skills can be improved through hard work and perseverance.

Standard 3: Mentorship and Citizenship	
BENCHMARK CODE	**BENCHMARK**
HE.3.R.3.1	Identify leadership opportunities within the school and the community.
HE.3.R.3.2	Identify opportunities to volunteer or serve others in the school or community.

Standard 4: Critical Thinking and Problem Solving	
BENCHMARK CODE	**BENCHMARK**
HE.3.R.4.1	Explain the importance of always taking ownership for personal actions.
HE.3.R.4.2	Identify different solutions and potential outcomes when problems arise.

Strand: PERSONAL HEALTH CONCEPTS

Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.3.PHC.1.1	Describe healthy behaviors that affect personal health. *Clarifications*: *Clarification 1:* Instruction includes preventing the spread of germs. *Examples*: *Example:* Covering mouth during a cough/sneeze, washing hands before eating and after using the bathroom, performing daily physical activity, never using others' hair/toothbrushes, exercising regularly, avoiding junk food, and avoiding tobacco and alcohol products.
HE.3.PHC.1.2	Apply ways you can prevent personal injuries. *Clarifications*: *Clarification 1:* Instruction includes safety practices such as water safety, pedestrian safety, fire safety, gun safety, and bicycle safety. *Clarification 2:* Instruction includes recognizing abusive behaviors (personal safety).

HE.3.PHC.1.3	Recognize that body parts and organs work together to form human body systems. *Clarifications*: *Clarification 1:* Body systems include the circulatory system, digestive system, nervous system, reproductive system, and other body systems.
HE.3.PHC.1.4	Discuss behaviors that avoid or reduce health risks. *Clarifications*: *Clarification 1:* Instruction focuses on following rules and personal hygiene. *Examples*: *Example:* Swimming with a buddy and following playground rules.
HE.3.PHC.1.5	Demonstrate health behaviors to maintain or improve personal health. *Clarifications*: *Clarification 1:* Instruction includes following rules and listening to trusted adults. *Clarification 2:* Instruction includes exercising, eating healthy foods and staying hydrated.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.3.PHC.2.1	Describe how outside influences, family, and friends can influence health behaviors. *Clarifications*: *Clarification 1:* Instruction includes family beliefs and traditions. *Clarification 2:* Instruction includes friends' beliefs and traditions.
HE.3.PHC.2.2	Identify what the school and community do to support personal health practices and behaviors. *Clarifications*: *Clarification 1:* Instruction includes nutrition in school lunches and school and community gardens. *Clarification 2:* Instruction includes safety drills including fire, weather, and lock-down drills in the school.
HE.3.PHC.2.3	Understand the positive and negative impacts technology may have on health. *Clarifications*: *Clarification 1:* Instruction for positive impacts includes calling 911 when help is needed, medical advances, telehealth, and interacting with peers online in a healthy way. *Clarification 2:* Instruction for negative impacts includes excess screen time (over two hours per day), overuse of cell phones and computers, and overuse of video games.
HE.3.PHC.2.4	Identify appropriate and inappropriate uses of the internet and communicating with others through technology. *Clarifications*:

	Clarification 1: Instruction for appropriate uses includes completing homework and visiting safe websites with a parent or trusted adult. *Clarification 2:* Instruction for inappropriate uses includes interacting with unknown users, cyberbullying, and visiting unsafe websites.
HE.3.PHC.2.5	Identify types of cyberbullying. *Clarifications*: *Clarification 1:* Instruction includes sending, posting, or sharing negative, harmful, false, or mean content about someone else online. *Clarification 2:* Instruction includes sharing personal or private information about someone else.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.3.PHC.3.1	Explain when assistance is needed when making a health-related decision. *Clarifications*: *Clarification 1:* Instruction includes when to reach out to an appropriate health helper, when to call 911, and to whom fears of personal safety or health issues should be reported.
HE.3.PHC.3.2	Recognize healthy options when making decisions for yourself that avoid or reduce health risks. *Clarifications*: *Clarification 1:* Instruction includes oral hygiene and going to the doctor. *Clarification 2:* Instruction includes eating healthy foods and participating in physical activity.
HE.3.PHC.3.3	Discuss the potential short-term personal impact of each option when making a health-related decision. *Clarifications*: *Clarification 1:* Instruction includes benefits of personal hygiene, such as preventing illness and disease.
HE.3.PHC.3.4	Select a personal health goal and track progress toward achievement. *Clarifications*: *Clarification 1:* Instruction includes tracking daily physical activity or limiting media use.
HE.3.PHC.3.5	Discuss healthy options to health-related issues or problems. *Clarifications*: *Clarification 1:* Instruction includes choosing healthy foods. *Clarification 2:* Instruction includes choosing safe environments and safe adults to trust.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**

HE.3.PHC.4.1	Practice appropriate responses to unwanted, unsafe, and threatening situations. *Clarifications*: *Clarification 1:* Instruction includes talking to a trusted adult and/or parent. *Clarification 2:* Instruction includes seeking safety and running for help. *Clarification 3:* Instruction includes asking for help with safety items, e.g., a life jacket, hand soap, buckling a seat belt, crossing the street, etc.

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.3.CEH.1.1	Relate how healthy behaviors impact the community. *Clarifications*: *Clarification 1:* Instruction includes practicing good hygiene. *Clarification 2:* Instruction includes working well with others.
HE.3.CEH.1.2	Understand common childhood health conditions and their impact on school and community environments. *Clarifications*: *Clarification 1:* Instruction includes diabetes, asthma, and food allergies.
HE.3.CEH.1.3	Identify the impact of internet and social media in the community. *Clarifications*: *Clarification 1:* Instruction includes positive impact such as spreading awareness and information. *Clarification 2:* Instruction includes negative impact such as sharing misinformation, cyberbullies, and health risks.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.3.CEH.2.1	Identify classroom and school rules that promote health and disease prevention. *Clarifications*: *Clarification 1:* Discussion includes rules such as walking instead of running, keeping areas clean, and listening to school personnel.
HE.3.CEH.2.2	Explore how the traditions and customs of the school and community influence health behavior of children. *Examples*: *Example:* School health fundraisers and health fairs, school assemblies, community gardens.

Standard 3: Prevention and Decision Making

BENCHMARK CODE	BENCHMARK
HE.3.CEH.3.1	Explore ways the community can prevent childhood injuries in the school and community settings. *Examples*: *Example:* Community/school health fairs, immunizations, swimming programs, etc.

Standard 4: Advocacy

BENCHMARK CODE	BENCHMARK
HE.3.CEH.4.1	Encourage positive behaviors and healthy choices by others. *Clarifications*: *Clarification 1:* Instruction includes selecting healthy food choices. *Clarification 2:* Instruction includes following playground rules.

Strand: CONSUMER HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.3.CH.1.1	Locate resources from home, school, and community that provide valid health information, products, and services. *Clarifications*: *Clarification 1:* Resources include internet, brochures, books, and local organizations such as the Department of Health.
HE.3.CH.1.2	Describe why it is important to seek health care. *Clarifications*: *Clarification 1:* Instruction includes prevention of tooth decay, hearing exams to assess hearing, and eye exams to assess vision.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.3.CH.2.1	Describe how the internet and various media/social media outlets influence the selection of health information, products, and services. *Clarifications*: *Clarification 1:* Instruction includes food packaging, television ads, billboards, and social media.
HE.3.CH.2.2	Identify resources that could assist in achieving personal health goals. *Clarifications*: *Clarification 1:* Examples include family support, organized sports, school walking club, teachers, school counselors, etc.

Standard 3: Prevention and Decision Making

BENCHMARK CODE	BENCHMARK
HE.3.CH.3.1	Describe criteria for selecting health information, resources, products, and services. *Clarifications*:

	Clarification 1: Instruction includes reading food labels. *Clarification 2:* Instruction includes finding valid and reputable websites, books, and brochures.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.3.CH.4.1	Describe ways to encourage healthy school environments. *Clarifications*: *Clarification 1:* Instruction includes participating in healthy clubs or activities at school. *Clarification 2:* Instruction includes taking safe routes to school.

GRADE: 4

Strand: RESILIENCY (STARTING 2024-2025)	
Standard 1: Character	
BENCHMARK CODE	**BENCHMARK**
HE.4.R.1.1	Consider the perspectives of others.
HE.4.R.1.2	Identify the benefits of treating others with respect.
HE.4.R.1.3	Predict the potential outcomes of repeating and/or sharing information that is not true.
HE.4.R.1.4	Identify strategies to help persevere in difficult situations.

Standard 2: Personal Responsibility	
BENCHMARK CODE	**BENCHMARK**
HE.4.R.2.1	Discuss ways to take responsibility for one's actions.
HE.4.R.2.2	Identify the value of making healthy choices for personal well-being.
HE.4.R.2.3	Create a personal goal and track progress toward achievement.
HE.4.R.2.4	Explain how attitudes and thoughts can influence your behavior.

Standard 3: Mentorship and Citizenship	
BENCHMARK CODE	**BENCHMARK**
HE.4.R.3.1	Identify opportunities to actively participate as a responsible citizen in the school and the local community.
HE.4.R.3.2	Model serving or helping others in the school or community.

Standard 4: Critical Thinking and Problem Solving	
BENCHMARK CODE	**BENCHMARK**
HE.4.R.4.1	Describe how perseverance may help overcome obstacles.
HE.4.R.4.2	Describe strategies to resolve conflicts. *Clarifications*:

	Clarification 1: Instruction includes compromise, agreeing to disagree, and civil discourse.

Strand: PERSONAL HEALTH CONCEPTS

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.4.PHC.1.1	Identify examples of mental and physical health. *Clarifications*: *Clarification 1:* Mental health: examples include healthy coping skills; self-regulating and self-soothing behaviors; ability to communicate needs, control impulses, and focus/refocusing on current tasks; showing empathy and compassion; listening skills, etc. *Clarification 2:* Physical health: examples include healthy eating behaviors; performing daily physical activity; personal hygiene care; and avoiding tobacco, alcohol, and other drugs.
HE.4.PHC.1.2	Analyze ways you can prevent personal injuries. *Clarifications*: *Clarification 1:* Instruction includes safety practices such as water safety, pedestrian safety, fire safety, gun safety, and bicycle safety. *Clarification 2:* Instruction includes recognizing abusive behaviors (personal safety).
HE.4.PHC.1.3	Identify the human body parts and organs that work together to form healthy body systems. *Clarifications*: *Clarification 1:* Body systems include the circulatory system, digestive system, nervous system, reproductive system, and other body systems.
HE.4.PHC.1.4	Identify the relationship between healthy behaviors and personal health. *Clarifications*: *Clarification 1:* Instruction includes choosing healthy foods for optimal growth and development. *Clarification 2:* Instruction includes participating in daily physical activity to prevent heart disease and obesity. *Clarification 3:* Instruction includes wearing safety gear, including a bike helmet, to prevent injuries. *Clarification 4:* Instruction includes washing hands for disease prevention.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.4.PHC.2.1	Identify how outside influences, including family and friends, affect health practices and behaviors. *Clarifications*:

	Clarification 1: Instruction includes recognizing and avoiding bullying behaviors. *Clarification 2:* Instruction includes choosing to avoid tobacco products or inhalants.
HE.4.PHC.2.2	Describe ways a safe, healthy school environment can influence personal health. *Clarifications*: *Clarification 1:* Instruction includes safety patrols, school crossing guards, and safety resource officers. *Clarification 2:* Instruction includes hand washing and practicing good hygiene. *Clarification 3:* Instruction includes daily physical activity as part of the school day.
HE.4.PHC.2.3	Discuss how technology influences personal thoughts, feelings, and health behaviors. *Clarifications*: *Clarification 1:* Instruction includes the negative impacts of cyberbullying. *Clarification 2:* Instruction includes limiting screen time to less than two hours per day to prevent health risks such as sleep difficulties, mood problems, physical inactivity, and decreased learning opportunities.
HE.4.PHC.2.4	Discuss how media/social media influences personal thoughts, feelings, and health behaviors. *Clarifications*: *Clarification 1:* Instruction includes marketing strategies to appeal to specific audiences. *Clarification 2:* Instruction includes negative effects on mental health, such as social media addiction. *Examples*: *Example:* Anti-drug campaigns.
HE.4.PHC.2.5	Identify health-related consequences of inappropriate and/or excessive internet use. *Clarifications*: *Clarification 1:* Health-related consequences include decreased mental well-being, loss of vision, sleep difficulties, and decreased physical activity leading to obesity. *Clarification 2:* Health-related consequences include musculoskeletal conditions caused by prolonged use of devices.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.4.PHC.3.1	Examine when assistance is needed to make a health-related decision. *Clarifications*:

	Clarification 1: Instruction includes assistance for administering first aid. *Clarification 2:* Instruction includes addressing conflict between peers.
HE.4.PHC.3.2	Apply healthy options when making decisions to maintain or improve personal health and reduce health risks. *Clarifications*: *Clarification 1:* Instruction includes avoiding substances, such as tobacco and alcohol. *Clarification 2:* Instruction includes practicing general personal hygiene to prevent disease and illness.
HE.4.PHC.3.3	Predict the potential short-term impact of each option on self and others when making a health-related decision. *Clarifications*: *Clarification 1:* Instruction includes participating in physical activity and effect on cardiovascular and physical health. *Clarification 2:* Instruction includes practicing proper hygiene and nutrition and effect on quality of life.
HE.4.PHC.3.4	Create a personal health goal and track progress toward achievement. *Examples*: *Example:* Eating healthy, balanced meals and/or participating in daily physical activity.
HE.4.PHC.3.5	Choose healthy options to health-related issues or problems. *Clarifications*: *Clarification 1:* Instruction includes responding to an injury; connecting with the appropriate health helper, including school counselors (mental health issues); peer pressure/healthy friendships, etc.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.4.PHC.4.1	Select appropriate responses to unwanted, unsafe, and threatening situations. *Clarifications*: *Clarification 1:* Instruction includes talking to a trusted adult and/or parent. *Clarification 2:* Instruction includes seeking safety and running for help. *Clarification 3:* Instruction includes asking for help with safety items, e.g., a life jacket, hand soap. *Examples*: *Example:* Talking to a trusted adult, assertiveness skills.

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH

Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.4.CEH.1.1	Investigate how healthy and unhealthy behaviors impact the community. *Clarifications*: *Clarification 1:* Instruction includes practicing good hygiene to prevent illness. *Clarification 2:* Instruction includes disadvantages of not following community/school rules.
HE.4.CEH.1.2	Recognize common childhood health conditions and their impact on school and community environments. *Clarifications*: *Clarification 1:* Instruction includes diabetes, asthma, and food allergies.
HE.4.CEH.1.3	Discuss the impact of internet and social media in the community. *Clarifications*: *Clarification 1:* Instruction includes positive impact such as spreading awareness and information. *Clarification 2:* Instruction includes negative impacts such as sharing misinformation, human trafficking, cyberbullies, permanence of social media posts, and social media addiction.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.4.CEH.2.1	Recognize types of school rules and community laws that promote health and disease prevention. *Clarifications*: *Clarification 1:* Discussion includes laws such as wearing a seat belt or helmet, clean indoor-air laws, and speed limits.
HE.4.CEH.2.2	Explain the important roles that school and community play in health practices and behaviors. *Clarifications*: *Clarification 1:* Instruction includes disaster preparedness. *Clarification 2:* Instruction includes school and community recycling programs and organizations.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.4.CEH.3.1	Compare community resources available to prevent common childhood injuries and health problems. *Examples*: *Example:* Community/school health fairs, immunizations, swimming programs, etc.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.4.CEH.4.1	Assist others to make positive health choices in their school and community. *Clarifications*: *Clarification 1:* Instruction includes modeling safe behaviors, including water safety and street safety. *Clarification 2:* Instruction includes reporting bullying and unsafe behaviors.

Strand: CONSUMER HEALTH	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.4.CH.1.1	Describe characteristics of valid health information, products, and services. *Clarifications*: *Clarification 1:* Characteristics include professional certification, proper labeling, complete directions for use, source, and date. *Clarification 2:* Instruction includes trusted adults, reliable and trustworthy websites, etc.
HE.4.CH.1.2	Distinguish differences among various healthcare providers, products, and services. *Clarifications*: *Clarification 1:* Instruction includes different types of healthcare providers and emergency medical services. *Clarification 2:* Instruction includes prescription versus non-prescription drugs.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.4.CH.2.1	Recognize ways health messages and communication techniques can be targeted for different audiences through internet and social media sources. *Clarifications*: *Clarification 1:* Instruction includes music, television ads, billboards, and social media.
HE.4.CH.2.2	Categorize resources that could assist in achieving a small group personal health goal. *Clarifications*: *Clarification 1:* Resources include family, school personnel, community service providers, and resource guides.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.4.CH.3.1	Construct criteria for selecting health resources, products, services, and reputable technologies. *Clarifications*:

	Clarification 1: Instruction includes asking if resources are safe, affordable, reliable, and available.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.4.CH.4.1	Choose ways to promote healthy school environments. *Clarifications*: *Clarification 1:* Instruction includes participating in healthy clubs or activities at school. *Clarification 2:* Instruction includes taking safe routes to school.

GRADE: 5

Strand: RESILIENCY (STARTING 2024-2025)	
Standard 1: Character	
BENCHMARK CODE	**BENCHMARK**
HE.5.R.1.1	Discuss how to work together to achieve a positive outcome.
HE.5.R.1.2	Identify how to communicate effectively within a group.
HE.5.R.1.3	Describe the importance of considering the perspective of others when communicating.
HE.5.R.1.4	Discuss ways that honesty and trustworthiness can lead to school and career success.

Standard 2: Personal Responsibility	
BENCHMARK CODE	**BENCHMARK**
HE.5.R.2.1	Describe the importance of having the courage to the do the right thing even when it is difficult.
HE.5.R.2.2	Discuss how responsible decision-making affects personal well-being.
HE.5.R.2.3	Select reliable resources that would assist in achieving a personal goal.
HE.5.R.2.4	Devise an individual goal (short or long term) to adopt, maintain, or improve a personal practice.
HE.5.R.2.5	Explain how attitudes and thoughts can influence your behavior and affect others.
HE.5.R.2.6	Demonstrate how to positively respond to external influences. *Clarifications*: *Clarification 1:* Instruction includes social media, television, music, and peers.

Standard 3: Mentorship and Citizenship	
BENCHMARK CODE	**BENCHMARK**
HE.5.R.3.1	Identify leadership skills that encourage and empower others.
HE.5.R.3.2	Identify ways to participate in decision-making in the school or community.

Standard 4: Critical Thinking and Problem Solving	
BENCHMARK CODE	**BENCHMARK**
HE.5.R.4.1	Apply organizational strategies that support completing multiple tasks efficiently.

HE.5.R.4.2	Identify successful strategies for adjusting to change and setbacks. *Clarifications*: *Clarification 1:* Instruction includes coping, grit, and new learning opportunities.
HE.5.R.4.3	Compare conflict resolution methods to identify potential solutions. *Clarifications*: *Clarification 1:* Methods include negotiation, give and take, and analyze pros and cons.

Strand: PERSONAL HEALTH CONCEPTS

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.5.PHC.1.1	Demonstrate the physical and mental dimensions of health. *Clarifications*: *Clarification 1:* Instruction includes the importance of getting along with others and respecting personal space. *Clarification 2:* Instruction includes the importance of feeling safe.
HE.5.PHC.1.2	Explain ways you can prevent personal injuries. *Clarifications*: *Clarification 1:* Instruction includes safety practices such as water safety, pedestrian safety, fire safety, gun safety, and bicycle safety. *Clarification 2:* Instruction includes recognizing abusive behaviors (personal safety).
HE.5.PHC.1.3	Explain how human body parts and organs work together in healthy body systems, including the endocrine and reproductive systems. *Clarifications*: *Clarification 1:* Instruction includes the digestive and circulatory systems receiving and distributing nutrients to provide energy. *Clarification 2:* Instruction includes endocrine glands influencing the reproductive system. *Clarification 3:* Instruction includes respiratory system providing oxygen to other body systems.
HE.5.PHC.1.4	Describe the relationship between healthy behaviors and personal health. *Clarifications*: *Clarification 1:* Instruction includes avoiding substances, including alcohol and tobacco, to prevent disease. *Clarification 2:* Instruction includes the positive impact of healthy relationships. *Clarification 3:* Instruction includes safe behaviors, including wearing a bike helmet or seatbelt to prevent injuries.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.5.PHC.2.1	Explain how outside influences, including family and friends, affect health practices and behaviors. *Clarifications*: *Clarification 1:* Instruction includes recognizing and avoiding bullying behaviors. *Clarification 2:* Instruction includes choosing to avoid tobacco products or inhalants. *Clarification 3:* Instruction includes media, family system, culture, peers, friends, and community.
HE.5.PHC.2.2	Explain ways a safe, healthy home and school environment promote personal health. *Clarifications*: *Clarification 1:* Instruction includes having a smoke-free home environment. *Clarification 2:* Instruction includes having a clean/orderly environment with rules.
HE.5.PHC.2.3	Explain how technology influences personal thoughts, feelings, and health behaviors. *Clarifications*: *Clarification 1:* Instruction includes the negative impacts of cyberbullying. *Clarification 2:* Instruction includes overuse of screen time leading to mental health challenges, including addiction.
HE.5.PHC.2.4	Discuss how media/social media influences personal and family health behaviors. *Clarifications*: *Clarification 1:* Instruction includes marketing strategies to appeal to specific audiences. *Clarification 2:* Instruction includes social media impact on body image, self-esteem, and self-image. *Examples*: *Example:* Nutrition/diet trends.
HE.5.PHC.2.5	Identify the legal and social consequences of inappropriate social media use. *Clarifications*: *Clarification 1:* Legal consequences includes disciplinary action by the school or criminal penalties. *Clarification 2:* Social consequences include social isolation, decline in academic performance, loss of friendships, and decreased social skills.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**

HE.5.PHC.3.1	Analyze when assistance is needed when making a health-related decision. *Clarifications*: *Clarification 1:* Instruction includes safety practices. *Clarification 2:* Instruction includes addressing peer relationships and dangerous events.
HE.5.PHC.3.2	Select a healthy option when making decisions for yourself to maintain or improve personal health and reduce health risks. *Clarifications*: *Clarification 1:* Instruction includes reporting bullying and resolving conflicts with peers. *Clarification 2:* Instruction includes using safety equipment and gear.
HE.5.PHC.3.3	Compare the potential short-term impact of each option on self and others when making a health-related decision. *Clarifications*: *Clarification 1:* Instruction includes the impact of substance use, including alcohol or tobacco. *Clarification 2:* Instruction includes practicing positive character traits and behavior to form relationships.
HE.5.PHC.3.4	Develop a personal health goal and track progress toward achievement.
HE.5.PHC.3.5	Summarize healthy options to health-related issues or problems. *Clarifications*: *Clarification 1:* Instruction includes discussion with a trusted adult, parent, or school counselor.

Standard 4: Advocacy

BENCHMARK CODE	BENCHMARK
HE.5.PHC.4.1	Evaluate appropriate responses to unwanted, unsafe, and threatening situations. *Clarifications*: *Clarification 1:* Instruction includes talking to a trusted adult and/or parent. *Clarification 2:* Instruction includes seeking safety and running for help. *Clarification 3:* Instruction includes asking for help with safety items, e.g., a life jacket, hand soap.

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.5.CEH.1.1	Compare and contrast how healthy and unhealthy behaviors impact the community. *Clarifications*:

	Clarification 1: Instruction includes outcomes of not following school and community rules.
HE.5.CEH.1.2	Explain common childhood health conditions and their impact on school and community environments. *Clarifications*: *Clarification 1:* Instruction includes diabetes, asthma, and food allergies.
HE.5.CEH.1.3	Explain how community health can be impacted by internet and social media in the community. *Clarifications*: *Clarification 1:* Instruction includes spreading awareness and information. *Clarification 2:* Instruction includes public service announcements on health.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.5.CEH.2.1	Give examples of school and public health policies that influence health promotion and disease prevention. *Clarifications*: *Clarification 1:* Examples include seat belt laws, helmet laws, emergency drills, and school bus policies.
HE.5.CEH.2.2	Investigate influences that change health beliefs and behaviors. *Clarifications*: *Clarification 1:* Instruction includes substance use behaviors being portrayed in the media. *Clarification 2:* Instruction includes social media influence.
HE.5.CEH.2.3	Determine how media/social media influences health behaviors and the selection of health information, products, and services. *Clarifications*: *Clarification 1:* Instruction includes social media platforms influencing the selection of products.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.5.CEH.3.1	Research community resources available to prevent common childhood injuries and health problems. *Examples*: *Example:* Community/school health fairs, immunizations, swimming programs, etc.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.5.CEH.4.1	Persuade others to make positive health choices. *Clarifications*:

	Clarification 1: Instruction includes practicing negotiation skills. *Clarification 2:* Instruction includes advocating for a tobacco-free environment.

Strand: CONSUMER HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.5.CH.1.1	Discuss characteristics of valid health information, products, and services. *Clarifications*: *Clarification 1:* Characteristics include professional certification, proper labeling, complete directions for use, source, and date.
HE.5.CH.1.2	Research resources from home, school, and the community that provide valid health information. *Clarifications*: *Clarification 1:* Resources include technology (phone, television, internet, radio), media, locations (library, health department, pharmacy, hospitals), and items (scale, pedometer).
HE.5.CH.1.3	Recognize appropriate health care products and services in the community. *Clarifications*: *Clarification 1:* Instruction includes seeking counseling or healthcare for individual needs.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.5.CH.2.1	Identify ways health messages and communication techniques can be targeted for different audiences through internet and social media sources. *Clarifications*: *Clarification 1:* Instruction includes surveys, advertisements, billboards, and social media.
HE.5.CH.2.2	Select reliable resources that would assist in achieving a personal health goal. *Clarifications*: *Clarification 1:* Resources include family, school personnel, community service providers, and resource guides.

Standard 3: Prevention and Decision Making

BENCHMARK CODE	BENCHMARK
HE.5.CH.3.1	Evaluate criteria for selecting health resources, products, and services. *Clarifications*: *Clarification 1:* Instruction includes determining criteria function, directions for use, competence of providers, and costs.

Standard 4: Advocacy

BENCHMARK CODE	BENCHMARK

HE.5.CH.4.1	Develop a plan as a class to champion healthy school environments. *Clarifications*: *Clarification 1:* Instruction includes participating in healthy clubs or activities at school. *Clarification 2:* Instruction includes taking safe routes to school.

GRADE: 68

Strand: RESILIENCY (STARTING 2024-2025)	
Standard 1: Character	
BENCHMARK CODE	**BENCHMARK**
HE.68.R.1.1	Demonstrate the ability to respond with empathy in a variety of contexts and situations. *Clarifications*: *Clarification 1:* Instruction includes identifying others' feelings, perspectives, circumstances, experiences, and active listening.
HE.68.R.1.2	Describe the importance of empathy, kindness, honesty and trust in building and sustaining relationships.
HE.68.R.1.3	Identify sources of relational conflicts and healthy approaches to conflict resolutions.

Standard 2: Personal Responsibility	
BENCHMARK CODE	**BENCHMARK**
HE.68.R.2.1	Discuss how character is shaped by attitudes, decisions and actions.
HE.68.R.2.2	Demonstrate responsible decision-making that considers multiple perspectives.
HE.68.R.2.3	Describe the importance of following school and community laws and rules.
HE.68.R.2.4	Monitor progress toward attaining a personal goal.
HE.68.R.2.5	Explain strategies and skills needed to assess progress and maintenance of a challenging personal goal.
HE.68.R.2.6	Describe how personal goals can vary with changing abilities, priorities, and responsibilities.
HE.68.R.2.7	Identify how continuous learning leads to personal growth.
HE.68.R.2.8	Identify strategies to manage challenges and setbacks. *Clarifications*: *Clarification 1:* Instruction includes time management, setting boundaries, setting realistic goals, and self-care.
HE.68.R.2.9	Identify healthy responses to negative peer pressure.

Standard 3: Mentorship and Citizenship	
BENCHMARK CODE	**BENCHMARK**
HE.68.R.3.1	Discuss ways a leader can build the trust of individuals and groups.
HE.68.R.3.2	Explain and develop ways to apply leadership skills in the school and the community.
HE.68.R.3.3	Identify the importance of volunteerism in positively affecting the community and nation.
HE.68.R.3.4	Identify ways to participate in our constitutional republic through public policy, voting, and leadership positions.

Standard 4: Critical Thinking and Problem Solving	
BENCHMARK CODE	**BENCHMARK**
HE.68.R.4.1	Analyze possible solutions to a problem to determine the best outcome for oneself and others.
HE.68.R.4.2	Develop and apply conflict resolution skills in a variety of situations. *Clarifications*: *Clarification 1:* Instruction includes coping, grit, and new learning opportunities.
HE.68.R.4.3	Analyze ways to pursue common goals as a part of a team or group. *Clarifications*: *Clarification 1:* Methods include negotiation, give and take, and analyze pros and cons.
HE.68.R.4.4	Identify the importance of perseverance when facing difficulty solving a problem.

GRADE: 6

Strand: PERSONAL HEALTH CONCEPTS	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.6.PHC.1.1	Describe how the physical, mental social, and intellectual dimensions of health are interrelated. *Clarifications*: *Clarification 1:* Instruction includes nutrition, sleep, physical stamina, and hunger. *Clarification 2:* Instruction includes mental alertness, interpersonal conflicts, mental stress, and solving problems.
HE.6.PHC.1.2	Identify personal health problems and concerns common to adolescents including reproductive development. *Clarifications*: *Clarification 1:* Instruction includes acne, eating disorders, depression, suicidal ideations, and puberty.
HE.6.PHC.1.3	Examine the importance of assuming responsibility for personal reproductive health behaviors. *Clarifications*: *Clarification 1:* Instruction includes hygiene, physical activity, nutrition, and medical/dental checkups. *Clarification 2:* Instruction includes resisting peer pressure and developing healthy relationships.
HE.6.PHC.1.4	Describe situations when professional health services may be required. *Clarifications*: *Clarification 1:* Instruction includes injuries, influenza, and depression. *Clarification 2:* Instruction includes substance use and abuse, child abuse, and domestic violence.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.6.PHC.2.1	Analyze how media/social media influences personal and peer thoughts, feelings, and health behaviors. *Clarifications*: *Clarification 1:* Instruction includes marketing strategies to appeal to specific audiences. *Clarification 2:* Instruction includes misconception of "friends" online versus friendship in real life. *Examples*: *Example:* Social media dependence affecting friendships and body image influence.
HE.6.PHC.2.2	Identify environmental factors that affect personal health. *Clarifications*: *Clarification 1:* Instruction includes contaminated food, air, and water quality. *Clarification 2:* Instruction includes availability of sidewalks and road hazards.
HE.6.PHC.2.3	Examine how friends and peers influence the health of adolescents. *Clarifications*: *Clarification 1:* Instruction includes media, social media, and spreading rumors. *Clarification 2:* Instruction includes conflict resolution skills.
HE.6.PHC.2.4	Examine how family and culture influence the health of adolescents. *Clarifications*: *Clarification 1:* Instruction includes family rules, family diet, and physical activity. *Clarification 2:* Instruction includes how family relationships impact behaviors.
HE.6.PHC.2.5	Recognize how personal health choices can affect hereditary risk factors. *Clarifications*: *Clarification 1:* Instruction includes healthy choices that reduce the impact of hereditary diseases such as heart disease or cancers, allergies, and asthma.
HE.6.PHC.2.6	Determine how social norms may impact healthy and unhealthy behavior. *Clarifications*: *Clarification 1:* Instruction includes how social norms can function as unspoken rules or guidelines for behavior and expected behavior, such as substance use, bullying, and participating in extracurricular activities.
HE.6.PHC.2.7	Explain how body systems are impacted by hereditary factors and infectious diseases. *Clarifications*: *Clarification 1:* Instruction includes hereditary diseases, such as sickle cell disease, cancer, and heart disease. *Clarification 2:* Instruction includes how medical conditions, such as asthma, allergies, diabetes, and Cystic Fibrosis, are exacerbated by infectious diseases.

HE.6.PHC.2.8	Describe legal and ethical behaviors when using the internet and social media. *Clarifications*: *Clarification 1:* Instruction includes respecting privacy, being honest, and sharing appropriate information. *Clarification 2:* Instruction includes recognizing and reporting signs of human trafficking and cyberbullying.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.6.PHC.3.1	Distinguish between the need for individual or collaborative decision making. *Clarifications*: *Clarification 1:* Instruction includes considering the severity of the situation and personal skills. *Clarification 2:* Instruction includes considering when someone is a danger to self or others.
HE.6.PHC.3.2	Specify the potential outcomes of each option when making a personal health-related decision. *Clarifications*: *Clarification 1:* Instruction includes physical, social, financial, and legal consequences. *Clarification 2:* Instruction includes emergency preparedness.
HE.6.PHC.3.3	Predict the potential outcomes of a health-related decision. *Clarifications*: *Clarification 1:* Instruction includes negative outcomes of not following safety guidelines and being inactive. *Clarification 2:* Instruction includes positive outcomes of eating healthy and being physically active.
HE.6.PHC.3.4	Use various methods to measure personal health status. *Clarifications*: *Clarification 1:* Instruction includes body composition, surveys, heart-rate monitors, pedometer, blood pressure cuff, and other clinical measurements. *Clarification 2:* Instruction includes stress-management techniques, such as breathing exercises and journaling.
HE.6.PHC.3.5	Develop an individual goal to adopt, maintain, or improve a personal health practice. *Clarifications*: *Clarification 1:* Instruction includes physical activity, eating habits, and personal hygiene.

	Clarification 2: Instruction includes safety habits, internet use/safety, and bullying-prevention strategies.
HE.6.PHC.3.6	Determine strategies and skills needed to attain a personal health goal. *Clarifications*: *Clarification 1:* Instruction includes journaling, daily checklists, identify peer supports, injury-prevention measures, and use of health-related apps.
HE.6.PHC.3.7	Monitor progress toward attaining a personal health goal. *Clarifications*: *Clarification 1:* Instruction includes use of checklists, logs, pedometers, websites, and health monitoring apps.
HE.6.PHC.3.8	Examine the likelihood of injury or illness if engaging in unhealthy/risky behaviors. *Clarifications*: *Clarification 1:* Instruction includes disease related to poor nutrition and inactivity. *Clarification 2:* Instruction includes cancer and chronic lung disease related to tobacco use. *Clarification 3:* Instruction includes injuries caused from failure to follow safety guidelines.
HE.6.PHC.3.9	Explore healthy practices and behaviors that will maintain or improve personal health and reduce health risks. *Clarifications*: *Clarification 1:* Instruction includes internal influences, such as hygiene, sleep, and fitness. *Clarification 2:* Instruction includes external influences, such as healthy relationship skills, influences of advertising, social media, and internet safety. *Clarification 3:* Instruction includes abstaining from risky behaviors.

Standard 4: Advocacy

BENCHMARK CODE	BENCHMARK
HE.6.PHC.4.1	Use valid and reliable information to request access to health products, services, or environments. *Clarifications*: *Clarification 1:* Instruction includes requesting sidewalks and accessing recreational areas.

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.6.CEH.1.1	Describe how the physical, mental, social, and intellectual dimensions of community health are interrelated. *Clarifications*: *Clarification 1:* Instruction includes connections between healthy behaviors and healthy outcomes.

	Examples: *Example:* Nutrition leading to increased mental alertness, interpersonal conflicts leading to mental stress.
HE.6.CEH.1.2	Identify community health problems and concerns common to adolescents. *Clarifications*: *Clarification 1:* Community health problems may include teen dating violence and teen pregnancy. *Clarification 2*: Instruction may include human trafficking awareness and prevention.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.6.CEH.2.1	Identify the impact of health information conveyed to students by the school and community. *Clarifications*: *Clarification 1:* Instruction includes first-aid education and safety education in school and how it benefits students. *Clarification 2:* Instruction includes the impact of substance use prevention programs.
HE.6.CEH.2.2	Investigate changes to societal norms and how they influence health beliefs and behaviors. *Examples*: *Example:* Location sharing, creation of designated smoking areas, increased access to community-based activities.
HE.6.CEH.2.3	Examine how media/social media influences peer and community health behaviors. *Clarifications*: *Clarification 1:* Instruction includes social media platforms influencing health behaviors and practices. *Examples*: *Example:* Music lyrics that encourage risky health behaviors, vaping and tobacco ads targeting younger populations, body image influence on social media.
HE.6.CEH.2.4	Propose ways that technology can influence peer and community health behaviors. *Clarifications*: *Clarification 1:* Instruction includes how internet and social media apps influence nutrition and physical activity.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.6.CEH.3.1	Choose healthy alternatives over unhealthy alternatives when making a decision. *Clarifications*: *Clarification 1:* Instruction includes practicing responsible behavior such as treating others with respect. *Examples*: *Example:* Saying no to drugs, eating a balanced diet over fast food, exercising daily.

HE.6.CEH.3.2	Specify the potential outcomes of each option when making a community health-related decision. *Examples*: *Example:* Building trails, opening/closing community centers, opportunities to access fresh fruits/vegetables.

Standard 4: Advocacy

BENCHMARK CODE	BENCHMARK
HE.6.CEH.4.1	Describe how the community can influence and support others to make positive health choices. *Examples*: *Example:* Bike trails, recreational areas, health-related community events.
HE.6.CEH.4.2	State a health-enhancing position on a topic and support it with accurate information. *Examples*: *Example:* Health-enhancing positions may include tobacco and vaping laws, zero-tolerance policies, and bullying rules.

Strand: CONSUMER HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.6.CH.1.1	Examine how appropriate health care can promote personal health. *Clarifications*: *Clarification 1:* Instruction includes following recommended visits to health care providers, such as pediatrician and dentist.
HE.6.CH.1.2	Investigate a variety of technologies to gather health information. *Clarifications*: *Clarification 1:* Technologies include a thermometer, scale, blood pressure machine, and other health related tools. *Clarification 2:* Technologies may include television, internet, social media, and health-related apps.
HE.6.CH.1.3	Identify available resources and services needed to attain a personal health goal. *Clarifications*: *Clarification 1:* Resources include technology (phone, television, internet, radio), media, locations (library, health department, pharmacy, hospitals), and items (scale, pedometer).

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.6.CH.2.1	Illustrate ways health messages and communication techniques can be targeted for different audiences through internet and social media sources. *Clarifications*: *Clarification 1:* Instruction includes how social media platforms use algorithms to target specific audiences to promote products or services.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.6.CH.3.1	Examine the validity of health information and determine the cost benefit of health products and services. *Clarifications*: *Clarification 1:* Instruction includes determining criteria function, directions for use, competence of providers, and costs.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.6.CH.4.1	Identify ways students can request access to appropriate resources and services that promote healthy living. *Clarifications*: *Clarification 1:* Instruction includes contacting a school counselor, school nurse, and school personnel for medical care.

GRADE: 7

Strand: PERSONAL HEALTH CONCEPTS	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.7.PHC.1.1	Explain how physical, mental, social, and intellectual dimensions of health are interrelated. *Clarifications*: *Clarification 1:* Instruction includes mental stress that may arise from exam season at school. *Clarification 2:* Instruction includes mental stress leading to physical illness. *Clarification 3:* Instruction includes peer relationship conflict leading to decreased self-esteem.
HE.7.PHC.1.2	Classify infectious diseases and their modes of transmission to the human body. *Examples*: *Example:* Malaria and Zika through mosquitoes, transmission of viruses through sharing of personal items, human immunodeficiency virus.
HE.7.PHC.1.3	Explain the importance of assuming responsibility for personal and reproductive health behaviors. *Clarifications*: *Clarification 1:* Instruction includes physical activity, eating habits, and adequate sleep. *Clarification 2:* Instruction includes proper care of reproductive organs/systems.
HE.7.PHC.1.4	Differentiate among professional health services that may be required. *Clarifications*:

	Clarification 1: Instruction includes difference between dentist vs. orthodontist. *Clarification 2:* Instruction includes difference between family physician vs. specialist.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.7.PHC.2.1	Interpret the potential impact of media/social media on health behaviors, personal thoughts, and feelings. *Clarifications*: *Clarification 1:* Instruction includes social media influence, such as targeted ads, "influencers," challenges, and trends. *Clarification 2:* Instruction includes misconception of "friends" online versus friendship in real life. *Clarification 3:* Instruction includes the permanence of what a person posts online, and how it may affect them throughout life.
HE.7.PHC.2.2	Analyze how environmental factors affect personal health. *Clarifications*: *Clarification 1:* Instruction includes safe food handling practices to avoid foodborne illnesses. *Clarification 2:* Instruction includes appropriate home heating and cooling, air, and water quality.
HE.7.PHC.2.3	Analyze how friends and peers influence the health of adolescents. *Clarifications*: *Clarification 1:* Instruction includes how friends and peers can influence self-confidence, behaviors, and relationships. *Examples*: *Example:* Teen dating violence and abuse.
HE.7.PHC.2.4	Analyze how family and cultural changes influence the health of adolescents. *Clarifications*: *Clarification 1:* Instruction includes family communication behaviors. *Clarification 2:* Instruction includes smoking in home and alcohol consumption by family members.
HE.7.PHC.2.5	Describe how personal health choices can affect hereditary risk factors. *Clarifications*: *Clarification 1:* Instruction includes healthy choices that reduce the impact of hereditary diseases such as sickle cell disease, diabetes, and acne.
HE.7.PHC.2.6	Analyze personal beliefs as they relate to health practices. *Clarifications*:

	Clarification 1: Instruction includes weight management through physical activity. *Clarification 2:* Instruction includes disease prevention through hand washing. *Clarification 3:* Instruction includes knowing when sharing personal information is safe and secure.
HE.7.PHC.2.7	Explain the influence of personal values, attitudes, and beliefs about individual health practices and behaviors. *Clarifications*: *Clarification 1:* Instruction includes how a healthy level of self-respect deters unhealthy choices and behaviors.
HE.7.PHC.2.8	Describe safe and legal practices when participating in online communities. *Clarifications*: *Clarification 1:* Instruction includes online communities such as discussion groups, blogs, and social networking websites. *Clarification 2:* Instruction includes reporting unsafe activity, reporting dangerous or unwanted activity, reporting cyberbullying, and limiting screen time for personal health.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.7.PHC.3.1	Predict when health-related situations require the application of a thoughtful decision-making process. *Examples*: *Example:* Riding in a vehicle with underage drivers, drug use, determining whether a relationship is healthy or not.
HE.7.PHC.3.2	Select healthy alternatives over unhealthy alternatives when making a decision. *Examples*: *Example:* Prescription drug use, using safety equipment, selecting nutritious food, internet safety, managing stress.
HE.7.PHC.3.3	Determine when individual or collaborative decision making is appropriate. *Clarifications*: *Clarification 1:* Instruction includes identifying healthy peer groups and trusted adults. *Clarification 2:* Instruction includes identifying when to reach out for help. *Examples*: *Example:* Reaching a fork in the road.
HE.7.PHC.3.4	Predict the short and long-term consequences of engaging in health-risk behaviors. *Clarifications*: *Clarification 1:* Instruction includes risky behaviors such as driving under the influence.

	Clarification 2: Instruction includes poor health maintenance such as lack of exercise and poor diet. *Clarification 3:* Instruction includes consequences of teenage pregnancy.
HE.7.PHC.3.5	Devise an individual goal (short or long term) to adopt, maintain, or improve a personal health practice. *Clarifications*: *Clarification 1:* Instruction includes participation in organized activities/sports. *Clarification 2:* Instruction includes safety habits, internet use and safety, and conflict resolution.
HE.7.PHC.3.6	Explain strategies and skills needed to assess progress and maintenance of a personal health goal. *Clarifications*: *Clarification 1:* Instruction includes journaling, daily checklists, and rewarding milestones. *Clarification 2:* Instruction includes use of pedometers, monitoring healthy food intake, and identification of groups for support.
HE.7.PHC.3.7	Compare and contrast the effects of healthy and unhealthy behaviors on personal health. *Examples*: *Example:* Smoking vs. nonsmoking, fast food vs. well-balanced diet.
HE.7.PHC.3.8	Describe ways one can reduce or prevent injuries and adolescent health problems. *Clarifications*: *Clarification 1:* Instruction includes helmet use, seat belt use, pedestrian safety, unsupervised handling of firearms, and proper use of over-the-counter medications.
HE.7.PHC.3.9	Practice behaviors that will maintain or improve personal health and reduce health risks, including reproductive health. *Clarifications*: *Clarification 1:* Instruction includes refusal skills, problem solving, and engaging in respectful relationships. *Clarification 2:* Instruction includes engaging or reengaging abstinence.

Standard 4: Advocacy

BENCHMARK CODE	BENCHMARK
HE.7.PHC.4.1	Articulate ways to request access to healthy products, services, and environments. *Clarifications*: *Clarification 1:* Instruction includes appropriate communication to a trusted adult that products or services are needed. *Examples*: *Example:* Accessing first aid, band-aids, hygiene products, counseling services, smoke free environments, healthy food options.

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.7.CEH.1.1	Investigate how the physical, mental, social, and intellectual dimensions of community health are interrelated. *Clarifications*: *Clarification 1:* Instruction includes connections between healthy behaviors and healthy outcomes. *Examples*: *Example:* Nutrition leading to increased mental alertness, interpersonal conflicts leading to mental stress.
HE.7.CEH.1.2	Describe community health problems and concerns common to adolescents. *Clarifications*: *Clarification 1:* Instruction includes community health problems may include teen dating violence and teen pregnancy. *Clarification 2:* Instruction includes human trafficking awareness and prevention.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.7.CEH.2.1	Examine how the school and community may influence the health behaviors of adolescents. *Clarifications*: *Clarification 1:* Instruction includes rules and policies enforced by the school and community that may lead to better health outcomes. *Examples*: *Example:* Safety drills and education, digital devices policies, food choices.
HE.7.CEH.2.2	Evaluate how changes in social norms impact healthy and unhealthy behavior. *Clarifications*: *Clarification 1:* Instruction includes impact of substance abuse, including secondhand smoke or driving/operating under the influence.
HE.7.CEH.2.3	Evaluate how media/social media influences peer and community health behaviors. *Clarifications*: *Clarification 1:* Instruction includes social media platforms influencing health behaviors and practices. *Clarification 2:* Instruction includes permanency of sharing materials online. *Examples*: *Example:* Music lyrics that encourage risky health behaviors, vaping and tobacco ads targeting younger populations, body image influence on social media.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.7.CEH.3.1	Describe ways the community can reduce or prevent injuries and adolescent health problems. *Clarifications*: *Clarification 1:* Instruction includes safe practices such as protective gear. *Clarification 2:* Instruction includes safe practices on the internet such as reporting cyberbullying and practicing safety on social media. *Examples*: *Example:* Helmet use, seat belt use, firearm safety, internet safety.
HE.7.CEH.3.2	Explain how injury or illness stemming from unhealthy or risky behaviors impacts the community. *Clarifications*: *Clarification 1:* Instruction includes how increased community illnesses burdens local resources, such as healthcare and workforce. *Clarification 2:* Instruction includes the impact of death, illness, or injury of a community member.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.7.CEH.4.1	Evaluate how community practices influence the positive health choices of others. *Examples*: *Example:* Public service announcements, health forums, guest speakers.
HE.7.CEH.4.2	Articulate a position on a health-related issue and support it with accurate health information. *Examples*: *Example:* Health-enhancing positions may include tobacco and vaping laws, zero-tolerance policies, and bullying rules.

Strand: CONSUMER HEALTH

Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.7.CH.1.1	Explain how appropriate health care can promote personal health. *Clarifications*: *Clarification 1:* Instruction includes having a health action plan or provider to contact when help is needed. *Examples*: *Example:* Asthma action plan, registered dietitian to plan healthy meals, doctor to prescribe medicine.

HE.7.CH.1.2	Evaluate a variety of technologies to gather health information. *Clarifications*: *Clarification 1:* Instruction includes identifying appropriate technologies under a variety of circumstances. *Examples*: *Example:* Technologies may include fitness apps, wearable devices, web resources.
HE.7.CH.1.3	Determine appropriate resources and services needed to attain a personal health goal. *Clarifications*: *Clarification 1:* Resources include technology (phone, television, internet, apps), media, locations (library, health department, pharmacy, hospitals), support groups (weight management, running clubs, fitness classes), and items (scale, pedometer).

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.7.CH.2.1	Analyze ways consumer health messages can target different audiences through internet and social media sources. *Clarifications*: *Clarification 1:* Instruction includes how organizations/companies use a variety of public service announcements, celebrities, social media posts, and platforms.
HE.7.CH.2.2	Analyze how messages from media/social media influence health behaviors. *Clarifications*: *Clarification 1:* Instruction includes cyberbullying affecting mental well-being. *Clarification 2:* Instruction includes the compounding influence of “likes” and “comments” on posts and how they activate the reward centers in the brain. *Examples*: *Example:* Examples include sports figures promoting fast food and provocative images on media/social media.
HE.7.CH.2.3	Evaluate the influence of technology in locating valid health information. *Clarifications*: *Clarification 1:* Instruction includes evaluation of a variety of health websites, apps, health devices, and organizations to receive information.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.7.CH.3.1	Analyze the validity of health information, products, and services. *Clarifications*: *Clarification 1:* Instruction includes reviewing a variety of resources including advertisements, health-claim articles, and personal claims.
HE.7.CH.3.2	Compare resources and services needed to attain a personal health goal. *Clarifications*: *Clarification 1:* Instruction includes determining criteria function, directions for use, competence of providers, and costs.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.7.CH.4.1	Articulate ways students can request access to appropriate resources and services that promote healthy living. *Clarifications*: *Clarification 1:* Instruction includes how to request support from a school counselor, school nurse, and school personnel for medical care.

GRADE: 8

Strand: PERSONAL HEALTH CONCEPTS	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.8.PHC.1.1	Analyze how the physical, mental, social, and intellectual dimensions of personal health are interrelated. *Clarifications*: *Clarification 1:* Instruction includes the relationship between sleeping and studying for tests. *Clarification 2:* Instruction includes the relationship between road rage and vehicular crashes. *Clarification 3:* Instruction includes the relationship between bullying, dating violence, human trafficking and self-esteem.
HE.8.PHC.1.2	Identify major chronic diseases that impact human body systems. *Clarifications*: *Clarification 1:* Instruction includes cancer, hypertension and coronary artery disease, asthma, and diabetes.
HE.8.PHC.1.3	Assess the importance of assuming responsibility for personal health behaviors. *Clarifications*: *Clarification 1:* Instruction includes teen pregnancy, sexually transmitted infections (STI), and abstinence to prevent STIs. *Clarification 2:* Instruction includes diet, physical activity, hygiene.
HE.8.PHC.1.4	Assess personal health practices. *Clarifications*: *Clarification 1:* Instruction includes physical activity and sleep habits. *Clarification 2:* Instruction includes interpersonal skills. *Clarification 3:* Instruction includes risky behavior and injury prevention.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.8.PHC.2.1	Analyze the influences of media/social media on physical, emotional, and social health. *Clarifications*: *Clarification 1:* Instruction includes sleep deprivation influencing increased risk of disease, obesity, and chronic health conditions. *Clarification 2:* Instruction includes too much screen time leading to loss of cognitive capacity, stress management capabilities, and social skills. *Examples*: *Example:* Normalization of underage substance use.
HE.8.PHC.2.2	Analyze the influence of personal values, attitudes, and beliefs about individual health practices and behaviors. *Clarifications*: *Clarification 1:* Instruction includes social conformity, desires, and impulses. *Clarification 2:* Instruction includes how a healthy level of self-respect deters unhealthy choices and behaviors.
HE.8.PHC.2.3	Predict how environmental factors affect personal health. *Clarifications*: *Clarification 1:* Instruction includes heat index, air, and water quality. *Clarification 2:* Instruction includes streetlights and signs. *Clarification 3:* Instruction includes bullying, gangs, and weapons in the community.
HE.8.PHC.2.4	Assess the role of the beliefs of friends and peers on the health of adolescents. *Clarifications*: *Clarification 1:* Instruction includes drug-use myths. *Clarification 2:* Instruction includes perception of healthy body composition. *Clarification 3:* Instruction includes energy drink myths.
HE.8.PHC.2.5	Assess the role of the beliefs of family and culture on the health of adolescents. *Clarifications*: *Clarification 1:* Instruction includes impact of alternative medical care and family religious beliefs on health practices.
HE.8.PHC.2.6	Describe the influence of culture on health beliefs, practices, and behaviors. *Examples*: *Example:* Faith-based fasting, diet, rites of passage, exercise.
HE.8.PHC.2.7	Explore how heredity and family history can affect personal health. *Clarifications*:

	Clarification 1: Instruction includes sickle cell disease, heart disease, diabetes, and mental health.
HE.8.PHC.2.8	Explain how the perceptions of norms influence healthy and unhealthy behaviors. *Examples*: *Example:* Body size determining health status, fad diets leading to weight loss.
HE.8.PHC.2.9	Describe how personal health goals can vary with changing abilities, priorities, and responsibilities. *Clarifications*: *Clarification 1:* Instruction includes weight reduction, cost of healthier food, availability of exercise equipment, and general health.
HE.8.PHC.2.10	Explain the impact of cyberbullying and inappropriate use of social media on personal wellness. *Clarifications*: *Clarification 1:* Instruction includes the compounding impact on mental health, such as depression, anxiety, loneliness, social isolation, and susceptibility to human trafficking.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.8.PHC.3.1	Determine when health-related situations require the application of a thoughtful prepared plan of action. *Clarifications*: *Clarification 1:* Instruction includes consumption of alcohol, use of marijuana, and prescription drug abuse. *Clarification 2:* Instruction includes prevention of dating violence.
HE.8.PHC.3.2	Compile the potential outcomes of each option when making a health-related decision. *Clarifications*: *Clarification 1:* Instruction includes consequences related to injury, addiction, and reproductive health. *Clarification 2:* Instruction includes consequences related to legal, social, and financial ramifications.
HE.8.PHC.3.3	Distinguish when individual or collaborative decision-making is appropriate. *Clarifications*: *Clarification 1:* Instruction includes pressure to consume alcohol, self-injury, weight management, and mental-health concerns.
HE.8.PHC.3.4	Evaluate the outcomes of a health-related decision. *Clarifications*: *Clarification 1:* Instruction includes substance use and abuse outcomes such as addiction and brain damage. *Clarification 2:* Instruction includes weight management from proper nutrition and exercise. *Clarification 3:* Instruction includes disease prevention from personal hygiene practices and reproductive health.

	Clarification 4: Instruction includes injury prevention from safety practices.
HE.8.PHC.3.5	Determine situations when specific professional health services or providers may be required. *Clarifications*: *Clarification 1:* Instruction includes head injuries, infections, depression, human trafficking, and abuse.
HE.8.PHC.3.6	Investigate personal strategies to reduce or prevent injuries and other adolescent health problems. *Clarifications*: *Clarification 1:* Instruction includes recognize signs and symptoms of depression, accessing resources, avoiding unsafe areas, and healthy relationship skills.
HE.8.PHC.3.7	Design an individual goal to adopt, maintain, or improve a personal health practice. *Clarifications*: *Clarification 1:* Instruction includes physical activity, eating habits, and sleep habits.
HE.8.PHC.3.8	Apply strategies and skills needed to attain a personal health goal. *Clarifications*: *Clarification 1:* Instruction includes physical activity and nutrition modification. *Clarification 2:* Instruction includes use of health apps.
HE.8.PHC.3.9	Apply healthy practices and behaviors that will maintain or improve personal health and reduce health risks. *Clarifications*: *Clarification 1:* Instruction includes participating in various physical activities, setting healthy goals, making healthy food choices, adequate sleep patterns. *Clarification 2:* Instruction includes fostering healthy relationships, resisting negative peer pressure, and reproductive health practices. *Clarification 3:* Instruction includes practicing internet safety. *Clarification 4:* Instruction includes limiting screentime to reduce the risk of musculoskeletal conditions caused by prolonged use of devices.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.8.PHC.4.1	Promote ways to acquire health services, products and or environments based on accurate and truthful information. *Clarifications*: *Clarification 1:* Instruction includes advocating for one's own health, wellbeing, and quality of life. *Examples*: *Example:* Safe routes to school, such as lighting, sidewalks, crosswalks, and/or environments.
HE.8.PHC.4.2	Identify strategies to combat cyberbullying and online harassment. *Examples*: *Example:* Reporting online suspicious behavior, reporting cyberbullying and harassment, maintaining personal security, identifying human trafficking.

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.8.CEH.1.1	Analyze how the physical, mental, social, and intellectual dimensions of community health are interrelated. *Clarifications*: *Clarification 1:* Instruction includes connections between healthy behaviors and healthy outcomes. *Examples*: *Example:* Road rage leading to vehicular crashes, bullying impacting self-esteem, interpersonal conflicts leading to mental stress.
HE.8.CEH.1.2	Evaluate community health problems and concerns common to adolescents. *Clarifications*: *Clarification 1:* Instruction includes community health problems may include teen dating violence and teen pregnancy. *Clarification 2:* Instruction includes human trafficking and cyberbullying awareness/prevention.
HE.8.CEH.1.3	Identify the social determinants of health. *Clarifications*: *Clarification 1:* Instruction includes economic stability, education access and quality, healthcare access and quality, neighborhood and built environment, and social and community context.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.8.CEH.2.1	Analyze how the school and community may influence adolescent health. *Clarifications*: *Clarification 1:* Instruction includes practices and resources in the school and community that may lead to better health outcomes for adolescents. *Examples*: *Example:* Drug abuse education programs, volunteering opportunities, availability of facilities and programs for students.
HE.8.CEH.2.2	Critique school and public health policies that influence health promotion and disease prevention. *Clarifications*: *Clarification 1:* Instruction includes rules and policies enforced by the school and community that may lead to better health outcomes. *Examples*: *Example:* Driving laws and sanitation laws.
HE.8.CEH.2.3	Analyze how media/social media influences community health behaviors. *Examples*: *Example:* Ads encouraging substance use in youth populations, language on social media and in music/television shows, fashion trends.

HE.8.CEH.2.4	Predict how environmental factors affect community health. *Clarifications*: *Clarification 1:* Instruction includes impact of weather, to include hurricanes and tornadoes, on community health and wellbeing. *Clarification 2:* Instruction includes impact of violence and safety on community health and wellbeing.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.8.CEH.3.1	Investigate community strategies to reduce or prevent injuries and other adolescent health problems. *Clarifications*: *Clarification 1:* Instruction includes recognizing signs and symptoms of physical or mental illness. *Clarification 2:* Instruction includes identifying and accessing resources to reduce or prevent injuries and other adolescent health problems.
HE.8.CEH.3.2	Anticipate how injury or illness stemming from unhealthy or risky behaviors impacts the community. *Clarifications*: *Clarification 1:* Instruction includes death or injury from car crashes and underage drinking/distracted driving. *Clarification 2:* Instruction includes infections and disease from poor personal health practices.
HE.8.CEH.3.3	Categorize healthy and unhealthy alternatives to community health-related issues or problems. *Examples*: *Example:* Health-related issues may include drug use, obesity, teen pregnancy, food deserts.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.8.CEH.4.1	Promote positive health choices with the influence and support of others. *Clarifications*: *Clarification 1:* Instruction includes promotion of sexual abstinence and substance use prevention.
HE.8.CEH.4.2	Justify a health-enhancing position on a topic and support it with accurate information. *Examples*: *Example:* Health-enhancing positions may include abstinence from unhealthy behaviors, legal-age limits, and zero-tolerance policies.
HE.8.CEH.4.3	Work cooperatively to advocate for healthy individuals, peers, families, and schools. *Clarifications*:

	Clarification 1: Instruction includes promotion of community initiatives, such as media or prevention campaigns. *Clarification 2:* Instruction includes participation in school community wellness and organizations. *Examples*: *Example:* Media campaigns, posters, performances, public service announcements, School Health Advisory Committee.

Strand: CONSUMER HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.8.CH.1.1	Analyze how appropriate health care can influence personal health. *Clarifications*: *Clarification 1:* Instruction includes going to a medical professional for prevention and treatment of illness.
HE.8.CH.1.2	Compare and contrast a variety of technologies to gather health information. *Clarifications*: *Clarification 1:* Instruction includes identifying appropriate technologies under a variety of circumstances. *Examples*: *Example:* Technologies may include fitness apps, wearable devices, web resources.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.8.CH.2.1	Evaluate ways consumer health messages and communication techniques can be targeted for different audiences. *Clarifications*: *Clarification 1:* Instruction includes how organizations/companies use a variety of public service announcements, celebrities, social media posts, and platforms.
HE.8.CH.2.2	Research marketing strategies behind health-related media/social media messages. *Clarifications*: *Clarification 1:* Instruction includes identifying and researching strategies that media companies use to create trends. *Examples*: *Example:* Social glorification of substance use, negative body image messaging, and normalization of violence.
HE.8.CH.2.3	Analyze the influence of technology on personal and family health. *Clarifications*: *Clarification 1:* Instruction includes social marketing for health information.

	Clarification 2: Instruction includes how technology can positively and negatively influence personal and family health behaviors.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.8.CH.3.1	Analyze the accessibility, validity, and reliability of products and services that enhance home, school, and community health. *Examples*: *Example:* Products and services may include prescription medication, health clinics, grocery stores.
HE.8.CH.3.2	Analyze valid and reliable health services and the cost of products. *Clarifications*: *Clarification 1:* Instruction includes reviewing a variety of resources including advertisements, health-claim articles, and personal claims.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.8.CH.4.1	Promote resources that assist in goal setting. *Examples*: *Example:* Support groups, running clubs, extracurricular activities.
HE.8.CH.4.2	Recommend a variety of technologies to gather health information. *Clarifications*: *Clarification 1:* Instruction includes technologies including those in available in a provider setting and technologies including cell phones, the internet, and social media. *Examples*: *Example:* Use of a glucose monitor, scale, pedometer, and wearable devices.

GRADE: 912

Strand: RESILIENCY (STARTING 2024-2025)	
Standard 1: Character	
BENCHMARK CODE	**BENCHMARK**
HE.912.R.1.1	Demonstrate effective and respectful communication skills and strategies. *Clarifications*: *Clarification 1:* Instruction includes differing opinions.
HE.912.R.1.2	Demonstrate empathy in a variety of contexts and situations. *Clarifications*: *Clarification 1:* Instruction includes identifying others' feelings, perspectives, circumstances, experiences, and active listening.
HE.912.R.1.3	Adjust behavior to respect the needs of others.

Standard 2: Personal Responsibility	
BENCHMARK CODE	**BENCHMARK**

HE.912.R.2.1	Describe the importance of leadership skills in the school and the community.
HE.912.R.2.2	Analyze different perspectives to inform responsible decision-making.
HE.912.R.2.3	Formulate a plan to attain a personal goal that addresses strengths, needs, and risks.
HE.912.R.2.4	Implement strategies and monitor progress in achieving a personal goal.
HE.912.R.2.5	Formulate an effective long-term plan to include all dimensions of wellness.
HE.912.R.2.6	Analyze how actions and reactions can influence one to respond in different situations. *Clarifications*: *Clarification 1:* Instruction includes emotions not governing behavior.
HE.912.R.2.7	Evaluate strategies that assist with managing challenges or setbacks. *Clarifications*: *Clarification 1:* Instruction includes time management, setting boundaries, setting realistic goals, self-care.

Standard 3: Mentorship and Citizenship	
BENCHMARK CODE	**BENCHMARK**
HE.912.R.3.1	Identify benefits of voting, volunteering, mentoring, and seeking leadership positions. *Clarifications*: *Clarification 1:* Instruction includes student government, school clubs, and volunteering in the community.
HE.912.R.3.2	Analyze ways a leader can inspire confidence and motivate others.
HE.912.R.3.3	Analyze situations and demonstrate strategies to engage in respectful debate. *Clarifications*: Clarification 1: Instruction includes group projects and class discussions.

Standard 4: Critical Thinking and Problem Solving	
BENCHMARK CODE	**BENCHMARK**
HE.912.R.4.1	Analyze the importance of character and grit to achieve successful outcomes.
HE.912.R.4.2	Generate and apply alternative solutions when solving problems or resolving conflict.
HE.912.R.4.3	Describe ways to anticipate, avoid or de-escalate conflicts.
HE.912.R.4.4	Identify the importance of perseverance when facing difficulty solving a problem.

Strand: PERSONAL HEALTH CONCEPTS	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.912.PHC.1.1	Evaluate personal health practices and overall health status to include all dimensions of health. *Clarifications*: *Clarification 1:* Instruction includes evaluating personal strengths, physical fitness, peer relationships, and personal hygiene. *Clarification 2:* Instruction includes evaluating disease and injury prevention practices.
HE.912.PHC.1.2	Analyze personal strategies for prevention, detection, and treatment of communicable and chronic diseases *Clarifications*: *Clarification 1:* Instruction includes prevention, detection, and treatment of cancer,

	obesity, heart disease, respiratory disease, neurological disease, sexually transmitted infections (STI), and additional diseases.
HE.912.PHC.1.3	Analyze the role of individual responsibility in enhancing health. *Clarifications*: *Clarification 1:* Instruction includes food choices, media use, lifestyle choices, stress management, and the individual responsibility for health protection.
HE.912.PHC.1.4	Interpret the significance of interrelationships in mental and physical health. *Clarifications*: *Clarification 1:* Instruction includes interrelationships between mental and physical health and substance use and abuse behaviors. *Clarification 2:* Instruction includes the positive health impact of healthy relationships with friends and family. *Clarification 3:* Instruction includes correlation between body image and relationships with food. *Clarification 4:* Instruction includes correlation between stress and anger management and overall health.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.912.PHC.2.1	Evaluate how the influences of social media affect physical and/or mental health, and the ability to make healthy choices. *Clarifications*: *Clarification 1:* Instruction includes body image, dietary habits, cyberbullying, and online support presence. *Clarification 2:* Instruction includes prevention of human trafficking by maintaining personal security. *Clarification 3:* Instruction includes identification of predatory behavior on the internet.
HE.912.PHC.2.2	Evaluate how environment and personal health are interrelated. *Clarifications*: *Clarification 1:* Instruction includes food options within a community. *Clarification 2:* Instruction includes availability of services such as access to medical care. *Clarification 3:* Instruction includes environmental factors such as weather, air, and water conditions.
HE.912.PHC.2.3	Analyze how friends and peers influence the health of individuals. *Clarifications*: *Clarification 1:* Instruction includes impact of peer relationships on health decisions and behaviors.
HE.912.PHC.2.4	Analyze how family and culture influence the health of individuals. *Clarifications*:

	Clarification 1: Instruction includes impact of family and culture on health decisions and behaviors.
HE.912.PHC.2.5	Analyze how heredity and family history can impact personal health. *Clarifications*: *Clarification 1:* Instruction includes genetic conditions such as substance abuse, family obesity, heart disease, and mental illness.
HE.912.PHC.2.6	Predict how healthy behaviors can affect health status. *Examples*: *Example:* Eating healthy foods, safe driving practices, building healthy relationships, health prevention practices, abstinence.
HE.912.PHC.2.7	Evaluate the influence of personal values, attitudes, and beliefs about individual health practices and behaviors. *Clarifications*: *Clarification 1:* Instruction includes social conformity, self-discipline, and impulse versus delayed gratification.
HE.912.PHC.2.8	Design a social media campaign that positively influences physical and/or mental health. *Examples*: *Example:* Memes, public service announcements, reels that promote healthy behavior outcomes.
HE.912.PHC.2.9	Analyze the impacts of technology and social media on popular culture and personal life. *Clarifications*: *Clarification 1:* Instruction includes impact of “influencers” and trends/challenges relating to mental and physical health. *Clarification 2:* Instruction includes how interactions such as “comments,” “saves,” “likes,” and “shares” on social media can increase the release of dopamine in the brain, similar to other addictive behaviors.
HE.912.PHC.2.10	Demonstrate ethical and responsible use of technology. *Clarifications*: *Clarification 1:* Instruction includes respecting privacy, being honest, and sharing appropriate information. *Clarification 2:* Instruction includes recognizing and reporting signs of human trafficking, cyberbullying, and other suspicious behavior.

Standard 3: Prevention and Decision Making

BENCHMARK CODE	BENCHMARK
HE.912.PHC.3.1	Determine the value of applying a thoughtful decision making process in health-related situations. *Clarifications*: *Clarification 1:* Instruction includes defining healthy boundaries in relationships. Clarification 2: Instruction includes prevention and decision making in scenarios involving peer pressure, substance use, and sexual activity/family planning.

HE.912.PHC.3.2	Assess whether individual or collaborative decision making is needed to make a healthy decision. *Clarifications*: *Clarification 1:* Instruction includes planning a post-high school career. *Clarification 2:* Instruction includes considering the severity of the situation and personal skills. *Clarification 3:* Instruction includes considering when someone is a danger to self or others.
HE.912.PHC.3.3	Identify protective factors that help to mitigate the risks of suicide and mental health disorders. *Clarifications*: *Clarification 1:* Instruction includes how protective factors promote positive health and well-being. *Examples*: *Example:* Healthy relationships, sense of belonging, support system.
HE.912.PHC.3.4	Recognize the signs, symptoms and how to seek treatment or support for mental health disorders. *Clarifications*: *Clarification 1:* Instruction includes signs and symptoms of mental health disorders, such as dramatic changes to sleeping, eating and behavior patterns, loss of energy, withdrawal from others, increased difficulty with solving problems. *Clarification 2:* Instruction includes accessing support or referral for treatment through school resources, such as school counselors, school nurses, school psychologists, and school social workers. *Examples*: *Example:* Mental health disorders include anxiety, depression, post-traumatic stress disorder, bipolar disorder.
HE.912.PHC.3.5	Recognize the signs and symptoms of suicidal ideations. *Examples*: *Example:* Some signs and symptoms may include risky behavior, self-harm, social withdrawal, writing or drawing about death and dying, feelings of hopelessness.
HE.912.PHC.3.6	Identify when and who can provide assistance with suicidal ideations. *Clarifications*: *Clarification 1:* Instruction includes identification of trusted adult and school supports, such as school counselor, school psychologist, or school social worker. *Clarification 2:* Instruction includes identification of suicidal ideation results in immediate reporting of concerns.
HE.912.PHC.3.7	Assess the degree of susceptibility to injury, illness, or death if engaging in unhealthy/risky behaviors. *Clarifications*:

	Clarification 1: Instruction includes risks associated with alcohol and substance abuse, distracted driving, negative peer groups. *Clarification 2:* Instruction includes risk of chronic disease due to lack of hygiene practices. *Clarification 3:* Instruction includes risk of teenage pregnancy, sexually transmitted infections (STI) and abstinence as the expected standard.
HE.912.PHC.3.8	Formulate a plan to attain a personal health goal that addresses strengths, needs, barriers, and risks. *Clarifications*: *Clarification 1:* Instruction includes using methods such as a SWOT (strengths, weaknesses, opportunities, and threats) analysis or SMART (specific, measurable, achievable, realistic, and timely) goals. *Clarification 2:* Instruction includes setting realistic expectations for oneself and others.
HE.912.PHC.3.9	Implement strategies and monitor progress in achieving a personal health goal. *Clarifications*: *Clarification 1:* Instruction includes stress management such as exercising, coping skills, and talking with a friend or trusted adult. *Clarification 2:* Instruction includes using health apps, logs, and journals. *Clarification 3:* Instruction includes finding support when needed.
HE.912.PHC.3.10	Evaluate healthy practices and behaviors that will maintain or improve health and reduce health risks, including reproductive health. *Clarifications*: *Clarification 1:* Instruction includes lifestyle choices to include substance use and abuse, a healthy diet, physical activity, and abstinence from sexual behavior. *Clarification 2:* Instruction includes riding in a car with impaired drivers. *Clarification 3:* Instruction includes seeking and maintaining healthy relationships. *Clarification 4:* Instruction includes seeking services for physical and mental health when needed.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.912.PHC.4.1	Justify when professional health services or providers may be required. *Clarifications*: *Clarification 1:* Instruction includes addressing a medical emergency, seeking assistance, and calling 911.

	Clarification 2: Instruction includes physical or mental crisis situations, domestic and/or dating violence, and environmental crisis situations.
HE.912.PHC.4.2	Propose strategies to reduce or prevent injuries and health problems. *Clarifications*: *Clarification 1:* Instruction includes safe driving practices, not entering restricted territory, and additional safety practices. *Clarification 2:* Instruction includes refusal skills and healthy relationship skills.
HE.912.PHC.4.3	Develop strategies to combat cyberbullying and online harassment. *Examples*: *Example:* Social media campaign for mental health, reporting online harassment and suspicious behavior, spreading awareness.

Strand: COMMUNITY AND ENVIRONMENTAL HEALTH

Standard 1: Core Concepts

BENCHMARK CODE	BENCHMARK
HE.912.CEH.1.1	Interpret the significance of interrelationships in community health. *Clarifications*: *Clarification 1:* Instruction includes the benefits of relationships between organizations, such as school systems, health department, law enforcement, local government.
HE.912.CEH.1.2	Utilize current, accurate data/information to formulate a health-enhancing message. *Clarifications*: *Clarification 1:* Instruction includes validating and analyzing data regarding drug use, violence, sexual activity, and teen-driving safety. *Examples*: *Example:* Health-enhancing positions may include abstinence from unhealthy behaviors, legal-age limits, and zero-tolerance policies.
HE.912.CEH.1.3	Investigate the social determinants of health in a community. *Examples*: *Example:* Neighborhood violence, lack of education, poverty levels, safe and available housing, polluted air and water.

Standard 2: Internal and External Influence

BENCHMARK CODE	BENCHMARK
HE.912.CEH.2.1	Assess how the school and community can affect personal health practices and behaviors. *Clarifications*: *Clarification 1:* Instruction includes impact of required health education and healthcare screenings. *Clarification 2:* Instruction includes enforcement of “no tolerance” policies related to violence. *Clarification 3:* Instruction includes automated external defibrillator availability and training.

HE.912.CEH.2.2	Evaluate how public health policies and government regulations can influence health promotion and disease prevention. *Examples*: *Example:* Seat belt laws, emergency drills, underage alcohol sales.
HE.912.CEH.2.3	Propose strategies to avoid risks on social media and the internet. *Examples*: *Example:* Limiting screen time to under two hours a day to avoid physical health risks, reporting messages from unknown senders, not sharing personal information online.
HE.912.CEH.2.4	Evaluate how environment and community health are interrelated. *Clarifications*: *Clarification 1:* Instruction includes food options with a community. *Clarification 2:* Instruction includes access to services and healthcare. *Clarification 3:* Instruction includes disaster preparedness and weather, air, and water conditions.
HE.912.CEH.2.5	Predict how healthy behaviors can affect community health status. *Clarifications*: *Clarification 1:* Instruction includes making positive choices that lead to better health outcomes in the community, including reproductive health.
HE.912.CEH.2.6	Analyze how culture supports and challenges health beliefs, practices, and behaviors. *Clarifications*: *Clarification 1:* Instruction includes a variety of cultural dietary patterns, rites of passage, family roles, parenting styles, and ethics.
HE.912.CEH.2.7	Analyze how the perceptions of norms influence healthy and unhealthy behaviors. *Clarifications*: *Clarification 1:* Instruction includes validating and analyzing perceptions of societal norms regarding drug use, violence, sexual activity, and teen-driving safety. *Clarification 2:* Instruction includes substance use and binge drinking due to peer pressure.
HE.912.CEH.2.8	Evaluate how the social determinants of health impact a community's health, wellbeing, and quality of life. *Clarifications*: *Clarification 1:* Instruction includes how barriers affect community health outcomes. *Examples*: *Example:* Low birth rates, higher obesity rates, higher mortality rates, higher rates of disease due to contributing factors.
HE.912.CEH.2.9	Identify computer related laws and analyze their impact on internet safety. *Examples*: *Example:* Digital privacy, security, intellectual property, network access, harassment.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.912.CEH.3.1	Analyze community strategies for prevention, detection, and treatment of communicable and chronic diseases.

	Clarifications: *Clarification 1:* Instruction includes health prevention resources.
HE.912.CEH.3.2	Propose community strategies to reduce or prevent injuries and health problems. *Examples*: *Example:* Street lighting, road signs, health fairs, car seat fittings.
HE.912.CEH.3.3	Formulate alternatives to community health-related issues or problems. *Examples*: *Example:* Obesity, food deserts, lack of prenatal care, drug abuse.
HE.912.CEH.3.4	Appraise the potential short-term and long-term outcomes of alternative solutions to community health-related issues or problems. *Examples*: *Example:* Related to lack of prenatal care, a short-term outcome may include more live births and a long-term outcome may include decrease in infant mortality.
HE.912.CEH.3.5	Examine barriers that can hinder healthy decision making. *Examples*: *Example:* Relationships, finances, environmental factors, educational opportunities.
HE.912.CEH.3.6	Design a campaign promoting health literacy that would result in a variety of positive health and quality of life outcomes. *Examples*: *Example:* Brochures, posters, public service announcements that promote healthy behavior outcomes.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.912.CEH.4.1	Develop a resource that influences and supports others in making positive health choices. *Examples*: *Example:* Positive health choices may include safe driving practices, cardiopulmonary resuscitation certification, recognizing signs of teen dating violence/abuse.
HE.912.CEH.4.2	Demonstrate leadership skills by advocating for personal, family, and community health. *Examples*: *Example:* Writing to government agencies, lead a student group, meet with community leaders.

Strand: CONSUMER HEALTH	
Standard 1: Core Concepts	
BENCHMARK CODE	**BENCHMARK**
HE.912.CH.1.1	Evaluate the relationship between access to health care and health status. *Clarifications*: *Clarification 1:* Instruction includes early detection and treatment of health conditions such as cancer, human immunodeficiency virus, diabetes, asthma, and mental health disorders.
HE.912.CH.1.2	Describe resources or services that facilitate achieving personal health goals.

	Examples: *Example:* Healthcare services, fitness centers, healthy food options.

Standard 2: Internal and External Influence	
BENCHMARK CODE	**BENCHMARK**
HE.912.CH.2.1	Adapt health messages and communication techniques to a specific target audience using various media. *Examples*: *Example:* Positive messaging in music, creating a positive social media message.
HE.912.CH.2.2	Evaluate the effect of media/social media on personal and family health. *Clarifications*: *Clarification 1:* Instruction includes television viewing habits, consumer skills, susceptibility to ads of health-related resources, and participation in risky behaviors.

Standard 3: Prevention and Decision Making	
BENCHMARK CODE	**BENCHMARK**
HE.912.CH.3.1	Authenticate the validity of health information and resources. *Clarifications*: *Clarification 1:* Instruction includes using valid and reliable resources.
HE.912.CH.3.2	Verify the validity of health information, products, and services. *Clarifications*: *Clarification 1:* Instruction includes understanding product-packaging claims, qualifications of service provider, type of service, type of product, product safety, and reliability.

Standard 4: Advocacy	
BENCHMARK CODE	**BENCHMARK**
HE.912.CH.4.1	Justify the use of valid technologies to gather health information. *Clarifications*: *Clarification 1:* Instruction includes 911 access, and access to health information via the internet or telephone. *Clarification 2:* Instruction includes medical technology, including X-rays, ultrasounds, mammograms, thermal imaging, and magnetic resonance imaging.