Science Standards

GRADES: 3-5

Body of Knowledge: COMPUTER SCIENCE - PERSONAL, COMMUNITY, GLOBAL, AND ETHICAL IMPACT	
Standard 1: Responsible use of technology and information	
BENCHMARK CODE	**BENCHMARK**
SC.35.CS-PC.1.1	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	Describe responsible uses of modern communication media and devices.
SC.35.CS-PC.1.3	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	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	Explain how computers and computing devices are used to communicate with others on a daily basis.
SC.35.CS-PC.2.2	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	Identify the legal and social consequences of cyberbullying/harassment in social media.
SC.35.CS-PC.2.4	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	Identify ways in which people with special needs access and use adaptive technology.
SC.35.CS-PC.2.6	Communicate about technology using appropriate terminology.
SC.35.CS-PC.2.7	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	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	Gather, organize, and analyze information from digital resources.
SC.35.CS-PC.3.3	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	Describe the difference between digital artifacts that are open or free and those that are protected by copyright.
SC.35.CS-PC.4.2	Explain fair use for using copyrighted materials (e.g., images, music, video, and text).
SC.35.CS-PC.4.3	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	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

Standard 1: Communication and collaboration

BENCHMARK CODE	BENCHMARK
SC.35.CS-CC.1.1	Identify technology tools for individual and collaborative data collection, writing, communication, and publishing activities.
SC.35.CS-CC.1.2	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	Identify ways that technology can foster teamwork, and collaboration can support problem solving and innovation.
SC.35.CS-CC.1.4	Describe how collaborating with others can be beneficial to a digital project.
SC.35.CS-CC.1.5	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

Standard 1: Modeling and simulations

BENCHMARK CODE	BENCHMARK
SC.35.CS-CS.1.1	Identify the concepts illustrated by a simulation (e.g., ecosystem, predator/prey, and invasive species).
SC.35.CS-CS.1.2	Describe how models and simulations can be used to solve real-world issues in science and engineering.
SC.35.CS-CS.1.3	Answer a question, individually and collaboratively, using data from a simulation.
SC.35.CS-CS.1.4	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	Solve age-appropriate problems using information organized using digital graphic organizers (e.g., concept maps and Venn-diagrams).
SC.35.CS-CS.2.2	Describe how computational thinking can be used to solve real life issues in science and engineering.
SC.35.CS-CS.2.3	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	Solve real-world problems in science and engineering using computational thinking skills.
SC.35.CS-CS.2.5	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	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	Identify and correct logical errors in algorithms; written, mapped, live action, or digital.

SC.35.CS-CS.2.8	Systematically test and identify logical errors in algorithms.
SC.35.CS-CS.2.9	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	Manipulate and publish multimedia artifacts using digital tools (local and online).
SC.35.CS-CS.3.2	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	Identify the basic components of a computer (e.g., monitor, keyboard, mouse, controller, speakers).
SC.35.CS-CS.4.2	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	Compare and contrast hardware and software.
SC.35.CS-CS.4.4	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	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	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	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	Explain that searches may be enhanced by using Boolean logic (e.g., using “not”, “or”, “and”).
SC.35.CS-CP.1.2	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	Identify, research, and collect a data set on a topic, issue, problem, or question using age-appropriate technologies.
SC.35.CS-CP.1.4	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	Perform keyboarding skills for communication and the input of data and information.
SC.35.CS-CP.2.2	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	Create a program using arithmetic operators, conditionals, and repetition in programs.
SC.35.CS-CP.2.4	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	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	Write, communicate and publish activities using technology tools.
SC.35.CS-CP.3.2	Present digitally created products, either individually and collaboratively, where a topic, concept, or skill is carefully analyzed or thoughtfully explored.

Science Standards

GRADE: 3

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 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 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.

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.

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.

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.