SCIENCE

Strand B: Energy

Standard 2: The student understands the interaction of matter and energy.

Benchmarks
SC.B.2.2.1 The student knows that some source of energy is needed for organisms to stay alive and grow.
SC.B.2.2.2 The student recognizes the costs and risks to society and the environment posed by the use of nonrenewable energy.

Strand D: Processes that Shape the Earth

Standard 1: The student recognizes that processes in the lithosphere, atmosphere, hydrosphere, and biosphere interact to shape the Earth.

Benchmark
SC.D.1.2.1 The student knows that larger rocks can be broken down into smaller rocks, which in turn can be broken down to combine with organic material to form soil.

Standard 2: The student understands the need for protection of the natural systems on Earth.

Benchmark
SC.D.2.2.1 The student knows that reusing, recycling, and reducing the use of natural resources improves and protects the quality of life.

Strand E: Earth and Space

Standard 1: The student understands the interaction and organization in the Solar System and the Universe and how this affects life on Earth.

Benchmark
SC.E.1.2.3 The student knows that the sun is a star and that its energy can be captured or concentrated to generate heat and light for work on Earth.

Strand F: Processes of Life

Standard 1: The Student describes patterns of structure and living things.
Standard 2: The student understands the process and importance of genetic diversity.

Benchmark

SC.F.2.2.1 The student knows that many characteristics of an organism are inherited from the parents of the organism, but that other characteristics are learned from an individual’s interactions with the environment.

Strand G: How Living Things Interact with Their Environments.

Standard 1: The student understands the competitive, interdependent, cyclic nature of living things in the environment.

Benchmarks

SC.G.1.2.1 The student knows ways that plants, animals, and protists interact.
SC.G.1.2.2 The student knows that living things compete in a climatic region with other living things and that structural adaptations make them fit for an environment.
SC.G.1.2.3 The student knows that green plants use carbon dioxide, water, and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction.
SC.G.1.2.4 The student knows that some organisms decompose dead plants and animals into simple minerals and nutrients for use by living things and thereby recycle matter.
SC.G.1.2.5 The student knows that animals eat plants or other animals to acquire the energy they need for survival.
SC.G.1.2.6 The student knows that organisms are growing, dying, and decaying and that new organisms are being produced from the materials of dead organisms.
SC.G.1.2.7 The student knows that variations in light, water, temperature, and soil content are largely responsible for the existence of different kinds of organisms and population densities in an ecosystem.

Standard 2: The student understands the consequences of using limited natural resources.

Benchmarks

SC.G.2.2.1 The student knows that all living things must compete for Earth’s limited resources; organisms best adapted to compete for the available resources will be successful and pass their adaptations (traits) to their offspring.
SC.G.2.2.2 The student knows that the size of a population is dependent upon the available resources within its community.
SC.G.2.2.3 The student understands that changes in the habitat of an organism may be beneficial or harmful.

Strand H: The Nature of Science

Standard 1: The student uses the scientific processes and habits of mind to solve problems.

Benchmarks

SC.H.1.2.1 The student knows that it is important to keep accurate records and descriptions to provide information and clues on causes of discrepancies in repeated experiments.
SC.H.1.2.2 The student knows that a successful method to explore the natural world is to observe and record, and then analyze and communicate the results.
SC.H.1.2.3 The student knows that to work collaboratively, all team members should be free to reach, explain, and justify their own individual conclusions.
SC.H.1.2.4  The student knows that to compare and contrast observations and results is an essential skill in science.

SC.H.1.2.5  The student knows that a model of something is different from the real thing, but can be used to learn something about the real thing.

**Standard 2: The student understands that most natural events occur in comprehensible, consistent patterns.**

**Benchmark**
SC.H.2.1.1  The student knows that most natural events occur in patterns.

**Standard 3: The student understands that science, technology, and society are interwoven and interdependent.**

**Benchmarks**
SC.H.3.2.1  The student understands that people, alone or in groups, invent new tools to solve problems and do work that affects aspects of life outside of science.
SC.H.3.2.2  The student knows that data are collected and interpreted in order to explain an event or concept.
SC.H.3.2.3  The student knows that before a group of people build something or try something new, they should determine how it may affect other people.
SC.H.3.2.4  The student knows that, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas.
Strand A: Number Sense, Concepts, and Operations

Standard 1: The student understands the different ways numbers are represented and used in the real world.

Benchmarks
MA.A.1.2.3 The student understands concrete and symbolic representations of whole numbers, fractions, decimals, and percents in real-world situations.
MA.A.1.2.4 The student understands that numbers can be represented in a variety of equivalent forms using whole numbers, decimals, fractions, and percents.

Standard 3: The student understands the effects of operations on numbers and the relationship among these operations, selects appropriate operations, and computes for problem solving.

Benchmarks
MA.A.3.2.1 The student understands and explains the effects of addition, subtraction, and multiplication on whole numbers, decimals, and fractions, including mixed numbers, and the effects of division on whole numbers, including the inverse relationship of multiplication and division.
MA.A.3.2.2 The student selects the appropriate operation to solve specific problems involving addition, subtraction, and multiplication of whole numbers, decimals, and fractions, and division of whole numbers.

Strand B: Measurement

Standard 1: The student measures quantities in the real world and uses the measures to solve problems.

Benchmark
MA.B.1.2.1 The student uses concrete and graphic models to develop procedures for solving problems related to measurement including length, weight, time, temperature, perimeter, area, volume, and angle.

Standard 3: The student estimates measurements in real-world problem situations.

Benchmark
MA.B.3.2.1 The student solves real-world problems involving estimates of measurements, including length, time, weight, temperature, money, perimeter, area, and volume.

Strand D: Algebraic Thinking

Standard 1: The student describes, analyzes, and generalizes a wide variety of patterns, relations, and functions.

Benchmark
MA.D.1.2.1 The student describes a wide variety of patterns and relationships through models, such as manipulatives, tables, graphs, and rules using algebraic symbols.

Standard 2: The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations.
Benchmark
MA.D.2.1.2 The student uses informal methods to solve real-world problems requiring simple equations that contain one variable.

**Strand E: Data Analysis and Probability**

**Standard 1:** The student understands and uses the tools of data analysis for managing information.

**Benchmark**
MA.E.1.2.1 The student solves problems by generating, collecting, organizing, displaying, and analyzing data using histograms, bar graphs, circle graphs, line graphs, pictographs, and charts.

**Standard 2:** The student identifies patterns and makes predictions from an orderly display of data using the concepts of probability and statistics.

**Benchmarks**
MA.E.2.2.1 The student uses models, such as tree diagrams, to display possible outcomes and to predict events.
MA.E.2.2.2 The student predicts the likelihood of simple events occurring.

**Standard 3:** The student uses statistical methods to make inferences and valid arguments about real-world situations.

**Benchmarks**
MA.E.3.2.1 The student designs experiments to answer class or personal questions, collects information, and interprets the results using statistics (range, mean, median, and mode) and pictographs, charts, bar graphs, circle graphs, and line graphs.
MA.E.3.2.2 The student uses statistical data about life situations to make predictions and justifies reasoning.
Strand A: Reading

Standard 1: The student uses the reading process effectively.

Benchmarks
LA.A.1.1.1 The student predicts what a passage is about based on its title and illustrations.
LA.A.1.1.3 The student uses knowledge of appropriate grade-, age-, and developmental-level vocabulary in reading.
LA.A.1.1.4 The student increases comprehension by rereading, retelling, and discussion.

Standard 2: The student constructs meaning from a wide range of texts.

Benchmarks
LA.A.2.1.1 The student determines the main idea or essential message from text and identifies supporting information.
LA.A.2.1.2 The student selects material to read for pleasure.
LA.A.2.1.3 The student reads for information to use in performing a task and learning a new task.
LA.A.2.1.4 The student knows strategies to use to discover whether information presented in a text is true, including asking others and checking another source.
LA.A.2.1.5 The student uses simple materials of the reference system to obtain information.

Strand B: Writing

Standard 2: The student writes to communicate ideas and information effectively.

Benchmarks
LA.B.2.2.3 The student writes for a variety of occasions, audiences, and purposes.
LA.B.2.2.5 The student creates narratives in which ideas, details, and events are in logical order and are relevant to the story line.
LA.B.2.2.6 The student creates expository responses in which ideas and details follow an organizational pattern and are relevant to the purpose.

Strand C: Listening, Viewing, and Speaking

Standard 1: The student uses listening strategies effectively.

Benchmarks
LA.C.1.1.1 The student listens for a variety of informational purposes, including curiosity, pleasure, getting directions, performing tasks, solving problems, and following rules.
LA.C.1.1.3 The student carries on a conversation with another person, seeking answers and further explanations of the other’s ideas through questioning and answering.
LA.C.1.1.4 The student retells specific details of information heard, including sequence of events.

Standard 3: The student uses speaking strategies effectively.

Benchmarks
LA.C.3.1.1 The student speaks clearly and at a volume audible in large- or small-group settings.
LA.C.3.1.2 The student asks questions to seek answers and further explanation of other people’s ideas.
LA.C.3.1.4 The student uses eye contact and simple gestures when speaking.
**Strand D: Language**

**Standard 1: The student understands the nature of language.**

**Benchmark**
LA.D.1.1.1  The student recognizes basic patterns in and functions of language (patterns such as characteristic sounds and rhythms and those found in written forms; functions such as asking questions, expressing oneself, describing objects or experience, and explaining).

**Standard 2: The student understands the power of language.**

**Benchmarks**
LA.D.2.1.1  The student understands that word choice can shape ideas, feelings, and actions.
LA.D.2.1.2  The student identifies and uses repetition, rhyme, and rhythm in oral and written text.

**Strand E: Literature**

**Standard 1: The student understands the common features of a variety of literary forms.**

**Benchmarks**
LA.E.1.1.1  The student knows the basic characteristics of fables, stories, and legends.
LA.E.1.1.2  The student identifies the story elements of setting, plot, character, problem, and solution/resolution.

**Standard 2: The student responds critically to fiction, nonfiction, poetry, and drama.**

**Benchmarks**
LA.E.2.1.1  The student uses personal perspective in responding to a work of literature, such as relating characters and simple events in a story or biography to people or events in his or her own life.
LA.E.2.1.2  The student recognizes rhymes, rhythm, and patterned structures in children’s texts.