Hot Water and Warm Homes from Sunlight
Grades 4-8

Grade Level Expectations for the Sunshine State Standards
Correlation for Primary Grades 4-5 Only

SCIENCE

Strand A: The Nature of Matter

Standard 1: The student understands that all matter has observable, measurable properties.

Benchmark
SC.A.1.2.2 The student knows that common materials (e.g., water) can be changed from one state to another by heating and cooling.

Strand B: Energy

Standard 1: The student recognizes that energy may be changed in form with varying efficiency.

Benchmarks
SC.B.1.2.1 The student knows how to trace the flow of energy in a system (e.g., as in an ecosystem).
SC.B.1.2.2 The student recognizes various forms of energy (e.g., heat, light, and electricity).
SC.B.1.2.4 The student knows the many ways in which energy can be transformed from one type to another.
SC.B.1.2.6 The student knows ways that heat can move from one object to another.

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 function in living things.

Benchmarks
SC.F.1.2.3 The student knows that living things are different but share similar structures.
SC.F.1.2.4 The student knows that similar cells form different kinds of structures.

Standard 2: The student understands the process and importance of genetic diversity.

Benchmark
SC.F.2.1.2 The student knows that there are many different kinds of living things that live in a variety of environments.

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.

Benchmark
SC.G.1.2.1 The student knows ways that plants, animals, and protists interact.

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

Benchmark
SC.G.2.1.2 The student knows that the activities of humans affect plants and animals in many ways.

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.

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

Benchmarks
SC.H.2.1.1 The student knows that most natural events occur in patterns.
SC.H.2.2.1 The student knows that natural events are often predictable and logical.

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

SCH.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, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas.
MATH

Strand B: Measurement

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

Benchmarks
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.
MA.B.1.2.2 The student solves real-world problems involving length, weight, perimeter, area, capacity, volume, time, temperature, and angles.

Standard 2: The student compares, contrasts, and converts within systems of measurement (both standard/nonstandard and metric/customary).

Benchmarks
MA.B.2.2.1 The student uses direct (measured) and indirect (not measured) measures to calculate and compare measurable characteristics.
MA.B.2.2.2 The student selects and uses appropriate standard and nonstandard units of measurement, according to type and size.

Standard 4: The student selects and uses appropriate units and instruments for measurement to achieve the degree of precision and accuracy required in real-world situations.

Benchmark
MA.B.4.2.2 The student selects and uses appropriate instruments and technology, including scales, rulers, thermometers, measuring cups, protractors, and gauges, to measure in real-world situations.

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, rules using algebraic symbols.

Strand E: Data Analysis and Probability

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

Benchmarks
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.
MA.E.1.2.3 The student analyzes real-world data to recognize patterns and relationships of the measures of central tendency using tables, charts, histograms, bar graphs, line graphs, pictographs, and circle graphs generated by appropriate technology, including calculators and computers.
LANGUAGE ARTS

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.

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.

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.