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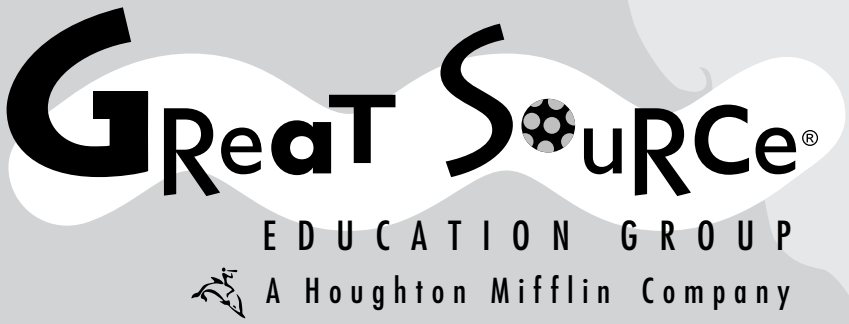
Grades 4-5

correlated to

Grade Level Expectations for the Sunshine State Standards



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correlated to
Grade Level Expectations for the Sunshine State Standards
Grade 4

Strand A: The Nature of Matter

Standard 1

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

Benchmark SC.A.1.2.1

The student determines that the properties of materials (e.g., density and volume) can be compared and measured (e.g., using rulers, balances, and thermometers).

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. uses a variety of measurements to compare and contrast the physical properties of matter.	**Student Book:** 98, 99 **Teacher's Guide:** 98, 99, 100

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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. understands that heating or cooling of matter will speed up or slow down, respectively, the motion of the small particles within matter and that this is what causes a phase change.	**Student Book:** 95, 96, 98, 99, 100 **Teacher's Guide:** 95, 96, 97, 98, 99, 100

Standard 2

The student understands the basic principles of atomic theory.

Benchmark SC.A.2.2.1

The student knows that materials may be made of parts too small to be seen without magnification.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. uses a variety of tools (hand lens, microscope) to observe and study minute details of objects.	**Teacher's Guide:** 49b, 87b, 87c, 156, 145b

Strand B: Energy

Standard 1

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

Benchmark SC.B.1.2.1

The student knows how to trace the flow of energy in a system (e.g., as in an ecosystem).

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 2. knows how to trace the flow of energy in a system (for example, in an ecosystem).	**Student Book:** 98, 99, 113, 115, 117, 118, 122 **Teacher's Guide:** 14, 15, 37, 38, 96, 97, 98, 99, 100, 114, 115, 117, 118, 122, 129, 131

Benchmark SC.B.1.2.2

The student recognizes various forms of energy (e.g., heat, light, and electricity).

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that there are a variety of sources for electricity (for example, hydroelectric, geothermal, windmills).	**Student Book:** 113, 115, 116, 117, 118 **Teacher's Guide:** 113, 114, 115, 116, 117, 118
2. knows the relationship between attributes of all waves (for example, wavelength, frequency) and attributes of sound waves (for example, pitch, intensity).	**Student Book:** 119, 120-121, 122, 123, 124, 125 **Teacher's Guide:** 119, 120-121, 122, 123, 124

Benchmark SC.B.1.2.3

The student knows that most things that emit light also emit heat.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that most objects that emit light also emit heat.	**Student Book:** 95, 107, 113 **Teacher's Guide:** 95, 107, 113

Benchmark SC.B.1.2.4

The student knows the many ways in which energy can be transformed from one type to another.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows ways that energy can be transformed (for example, electricity to light, light to heat, mechanical to heat).	**Student Book:** 14, 95, 96, 98, 99, 100, 113, 114, 115, 116, 117, 118 **Teacher's Guide:** 14, 15, 95, 96, 97, 98, 99, 100, 113, 114, 115, 116, 117, 118
2. knows that moving electric charges produce magnetic forces and moving magnets produce electric currents.	**Student Book:** 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 125 **Teacher's Guide:** 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118

Benchmark SC.B.1.2.5

The student knows that various forms of energy (e.g., mechanical, chemical, electrical, magnetic, nuclear, and radiant) can be measured in ways that make it possible to determine the amount of energy that is transformed.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. extends and refines use of a variety of tools to measure the gain or loss of energy.	**Teacher's Guide:** 15

Standard 2

The student understands the interaction of matter and energy.

Benchmark SC.B.2.2.2

The student recognizes the cost and risks to society and the environment posed by the use of nonrenewable energy.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. understands the reasons for energy conservation.	**Teacher's Guide:** 137
2. knows the risk factors associated with the use of nonrenewable energy sources (for example, economic factors and health factors).	**Teacher's Guide:** 137

Benchmark SC.B.2.2.3

The student knows that the limited supply of usable energy sources (e.g., fuels such as coal or oil) places great significance on the development of renewable energy sources.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. understands the processes that created fossil fuels and why they are nonrenewable.	**Teacher's Guide:** 137

Strand C: Force and Motion

Standard 1

The student understands that types of motion may be described, measured, and predicted.

Benchmark SC.C.1.2.2

The student knows that waves travel at different speeds through different materials.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. understands that waves behave differently in different media (for example, water, a wall, the atmosphere, a vacuum).	**Teacher's Guide:** 75, 122

Standard 2

The student understands that the types of force that act on an object and the effect of that force can be described, measured, and predicted.

Benchmark SC.C.2.2.1

The student recognizes that forces of gravity, magnetism, and electricity operate simple machines.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. understands how simple machines are used to make tasks possible.	**Student Book:** 101, 102-103, 104, 105, 106, 125 **Teacher's Guide:** 101, 102-103, 104, 105, 106

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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 2. knows the properties of different types of soil.	**Student Book:** 127, 129, 130, 131, 145 **Teacher's Guide:** 127, 128, 130, 131

Benchmark SC.D.1.2.3

The student knows that the water cycle is influenced by temperature, pressure, and the topography of the land.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. understands how the water cycle is influenced by temperature and land features.	**Teacher's Guide:** 65, 71, 73

Benchmark SC.D.1.2.4

The student knows that the surface of the Earth is in a continuous state of change as waves, weather, and shifts of the land constantly change and produce many new features.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. understands how processes of weathering and erosion constantly change the surface of the Earth.	**Student Book:** 51

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 improve and protect the quality of life.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows ways in which people can conserve natural resources.	**Student Book:** 133, 134-135, 136, 137, 138, 145 **Teacher's Guide:** 133, 135, 136, 137, 138
2. knows ways misuse of natural resources affects the quality of life for all species.	**Student Book:** 133, 134-135, 136, 137, 138, 145 **Teacher's Guide:** 133, 135, 136, 137, 138

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.1.2.1

The student knows that the tilt of the Earth on its own axis as it rotates and revolves around the Sun causes changes in season, length of day, and energy available.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that the tilt of the Earth causes the change of seasons, length of day, and the amount of energy available.	**Teacher's Guide:** 72

Benchmark SC.E.1.2.4

The student knows that the planets differ in size, characteristics, and composition and that they orbit the Sun in our Solar System.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows characteristics of Jupiter, Saturn, Uranus, Neptune, and Pluto.	**Student Book:** 85, 86 **Teacher's Guide:** 83, 84, 85, 86

Benchmark SC.E.1.2.5

The student understands the arrangement of planets in our Solar System.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that gravity is one of the forces that keeps planets arranged in orbits around the Sun and the Moon in orbit around the Earth.	**Teacher's Guide:** 85

Strand F: Processes of Life

Standard 1

The student describes patterns of structure and function in living things.

Benchmark SC.F.1.2.1

The student knows that the human body is made of systems with structures and functions that are related.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that complex animals have specialized organs to carry out life processes.	**Student Book:** 19, 20, 21, 22, 23, 24, 49 **Teacher's Guide:** 19, 20, 21, 22, 23, 24
2. knows the major organ systems of the human body.	**Student Book:** 20, 21, 23 **Teacher's Guide:** 19, 20, 21, 22, 23, 24
3. understands the functions of various body systems.	**Student Book:** 19, 20, 21, 22, 23, 24, 49 **Teacher's Guide:** 19, 20, 21, 22, 23, 24

Strand G: How Living Things Interact with Their Environment

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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows how plants and animals interact with one another in an ecosystem (for example, organization of communities, flow of energy through food webs).	**Student Book:** 37, 38, 39, 40, 41, 42, 49 **Teacher's Guide:** 37, 38, 39, 40, 41, 42, 129
2. understands the relationship among organisms in aquatic and terrestrial food chains (for example, the role of producers, consumers, and decomposers).	**Student Book:** 37, 38, 39, 40, 41, 42, 49, 127, 128-129, 130, 131, 132 **Teacher's Guide:** 37, 38, 39, 40, 41, 42, 127, 128-129, 130, 131, 132

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows organisms that act as decomposers.	**Student Book:** 131, 132 **Teacher's Guide:** 14, 38, 129, 131, 132
2. understands the need for nutrients and minerals for living organisms.	**Student Book:** 127, 129, 131 **Teacher's Guide:** 127, 129, 131
3. understands the process of decay (for example, the stages of decay, the organisms that help the decay process, the nonliving factors that influence the rate of decay, the products of decay).	**Student Book:** 128-129 **Teacher's Guide:** 38, 128, 129

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that organisms are growing, dying, and decaying and that new organisms are being produced.	**Teacher's Guide:** 38, 129, 131

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. 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.	**Student Book:** 45 **Teacher's Guide:** 44, 45, 141, 144

Standard 2

The student understands the consequences of using limited natural resources.

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows the kinds of organisms that lived in the past and compares them to existing species.	**Student Book:** 43, 44-45, 46-47, 48, 49 **Teacher's Guide:** 43, 44-45, 46-47, 48
2. knows characteristics that allow members within a species to survive and reproduce.	**Student Book:** 16, 17, 18, 143 **Teacher's Guide:** 14, 16, 17, 18, 40, 41, 42, 141, 142

Benchmark SC.G.2.2.3

The student understands that changes in the habitat of an organism may be beneficial or harmful.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. understands patterns of interdependency in ecological systems.	**Student Book:** 37, 38, 39, 40, 41, 42, 49, 127, 128-129, 130, 131, 132, 143 **Teacher's Guide:** 37, 38, 39, 40, 41, 42, 127, 128-129, 130, 131, 132, 133, 139, 141, 142
2. understands that what benefits one organism may be harmful to other organisms.	**Student Book:** 40, 41, 42, 143, 144, 145 **Teacher's Guide:** 39, 40, 41, 42, 141, 142, 143, 144
3. understands that changes in a ecological system usually affect the whole system.	**Student Book:** 37, 38, 39, 40, 41, 42, 49, 127, 128-129, 130, 131, 132, 143 **Teacher's Guide:** 37, 38, 39, 40, 41, 42, 127, 128-129, 130, 131, 132, 133, 139, 141, 142

Strand H: The Nature of Science

Standard 1

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

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that scientists make the results of their investigations public, and they describe the investigations in ways that enable others to repeat the investigation.	**Student Book:** 26, 27, 28, 29, 44, 45, 46, 47, 63, 64, 65, 66, 67, 68, 76, 77, 78, 79, 80 **Teacher's Guide:** 26, 27, 28, 29, 44, 45, 46, 47, 63, 64, 65, 66, 67, 68, 76, 77, 78, 79, 80

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. plans and investigates experiments in which hypotheses are formulated based on cause and effect relationships; distinctions are made among observations, conclusions/inferences and predictions; a limited number of variables are controlled; and numerical data that are contradictory or unusual in experimental results are recognized.	**Student Book:** 28, 35, 55-56, 61-62, 66-67, 86, 91, 94, 106, 109, 111, 124, 132 **Teacher's Guide:** 11b, 15, 28, 35, 47, 49b, 55-56, 61-62, 66-67, 83, 84-85, 86, 87b, 91, 92, 94, 104, 106, 109, 111, 117, 118, 122, 123, 124, 125a-125b, 132, 145a
2. uses metric tools to measure, record, and interpret data.	**Student Book:** 86 **Teacher's Guide:** 11b, 45, 86

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. works collaboratively to collect, share, and record information for a scientific investigation.	**Student Book:** 35, 55-56, 61-62, 66-67, 86, 91, 94, 106, 109, 111, 124, 132 **Teacher's Guide:** 11b, 15, 35, 47, 49b, 55-56, 61-62, 66-67, 83, 84-85, 86, 87b, 91, 92, 94, 104, 106, 109, 111, 117, 118, 122, 123, 124, 125a-125b, 132, 145a

Benchmark SC.H.1.2.4

The student knows that to compare and contrast observations and results is an essential skill in science.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that comparisons between experiments can be made when conditions are the same.	**Student Book:** 62, 94, 132 **Teacher's Guide:** 56, 62, 67, 91, 92, 94, 104, 106, 132

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that a model of something is different from the real thing, but can be used to learn something about the real thing.	**Student Book:** 55-56, 81, 82-83, 84-85, 86, 87 **Teacher's Guide:** 55-56, 81, 82-83, 84-85, 86, 117

Standard 2

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

Benchmark SC.H.2.2.1

The student knows that natural events are often predictable and logical.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 2. knows basic patterns, sequences, and cycles occurring in nature.	**Student Book:** 14, 16, 18, 32-33, 34, 35, 36, 37, 38, 39, 42, 51, 52-53, 54, 55-56, 63, 64-65, 66-67, 69, 70, 71, 72, 73, 74, 78-79, 80, 99, 137 **Teacher's Guide:** 14, 15, 16, 18, 34, 35, 36, 37, 38, 40, 42, 51, 52-53, 54, 55-56, 63, 64, 65, 66-67, 69, 70, 71, 72, 73, 74, 78, 79, 80, 99, 129, 137

Standard 3

The student understands that science, technology, and society are interwoven and interdependent.

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows that technologies often have costs, as well as benefits, and can have an enormous effect on people and other living things.	**Student Book:** 133, 134-135, 136, 137, 138, 139, 140-141, 142, 143, 144, 145, 147, 148-149, 150, 151, 152 **Teacher's Guide:** 133, 134-135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 147, 148-149, 150, 151, 152

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
2. researches and reports on a science topic.	**Student Book:** 13, 19, 25, 31, 37, 43, 51, 57, 63, 69, 75, 81, 89, 95, 101, 107, 113, 119, 127, 133, 139, 147, 153, 159 **Teacher's Guide:** 13, 14, 19, 20, 25, 26, 31, 32, 37, 38, 43, 44, 51, 52, 57, 58, 63, 64, 69, 70, 75, 76, 81, 82, 89, 90, 95, 96, 97, 101, 102, 107, 108, 113, 114, 119, 120, 127, 128, 133, 134, 135, 139, 140, 147, 148, 153, 154, 159, 160

Benchmark SC.H.3.2.2

The student knows that data are collected and interpreted in order to explain an event or concept.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. constructs and analyzes graphs, tables, maps, and charts to organize, examine, and evaluate information.	**Student Book:** 18, 24, 42, 48, 60, 67, 71, 73, 91, 94, 99, 118, 123, 131, 143, 162, 163, 164 **Teacher's Guide:** 15, 18, 19, 24, 27, 42, 46, 48, 53, 60, 67, 71, 73, 91, 94, 99, 113, 118, 123, 131, 143, 162, 163, 164

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. uses criteria to understand and analyze the impact of scientific discoveries (for example, determines whether or not scientific claims are backed by sufficient evidence and logical arguments).	**Student Book:** 25-30, 43-48, 51-56, 57-62, 63-68, 75-80, 81-86, 101-106, 119-124, 127-132, 153-158 **Teacher's Guide:** 25-30, 43-48, 51-56, 57-62, 63-68, 75-80, 81-86, 101-106, 119-124, 127-132, 153-158

Benchmark 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.

Grade Level Expectations, Grade 4	Science Daybook, Grade 4
The student: 1. knows ways that, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas.	**Student Book:** 76, 77, 78, 79, 80, 98-99,104, 105, 159, 160, 161, 162, 163, 164, 165 **Teacher's Guide:** 76, 77, 78, 79, 80, 104, 105, 159, 160, 161, 162, 163, 164, 165

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Grade Level Expectations for the Sunshine State Standards
Grade 5

Strand A: The Nature of Matter

Standard 1

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

Benchmark SC.A.1.2.1

The student determines that the properties of materials (e.g., density and volume) can be compared and measured (e.g., using rulers, balances, and thermometers).

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. uses metric tools to determine the density and volume of materials.	**Student Book:** 60 **Teacher's Guide:** 60

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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that matter is conserved during heating and cooling.	**Student Book:** 95, 96, 98, 99, 100 **Teacher's Guide:** 87a, 87c, 95, 96-97, 98, 99, 100

Benchmark SC.A.1.2.4

The student knows that different materials are made by physically combining substances and that different objects can be made by combining different materials.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that different materials can be physically combined to produce different substances.	**Student Book:** 89, 90-91, 92, 93, 94, 95, 96, 98, 99, 100 **Teacher's Guide:** 87a, 87c, 89, 90-91, 92, 93, 94, 95, 96-97, 98, 99, 100
2. knows the differences and similarities between mixtures and solutions.	**Student Book:** 96 **Teacher's Guide:** 96, 97

Benchmark SC.A.1.2.5

The student knows that materials made by chemically combining two or more substances may have properties that differ from the original materials.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that materials made by chemically combining two or more substances have properties that differ from the original materials.	**Student Book:** 95, 96, 98, 99, 100 **Teacher's Guide:** 87a, 87c, 95, 96-97, 98, 99, 100
2. knows the difference between physical and chemical changes.	**Student Book:** 95, 96, 98, 99, 100 **Teacher's Guide:** 87a, 87c, 95, 96-97, 98, 99, 100

Strand B: Energy

Standard 1

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

Benchmark SC.B.1.2.1

The student knows how to trace the flow of energy in a system (e.g. as in an ecosystem).

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows how to trace the flow of energy in a system (for example, electricity in a circuit to produce heat, light, sound, or magnetic fields).	**Student Book:** 101, 102-103, 104, 105, 106, 107, 108-109, 110, 111, 112 **Teacher's Guide:** 87a, 87c, 87d, 101, 102, 103, 104, 105, 106, 107, 108-109, 110, 111, 112

Benchmark SC.B.1.2.2

The student recognizes various forms of energy (e.g., heat, light, and electricity).

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that energy can be described as stored energy (potential) or energy of motion (kinetic).	**Student Book:** 101, 102-103, 104, 105, 106, 107, 108-109, 110, 111, 112, 125 **Teacher's Guide:** 87a, 87c, 87d, 101, 102, 103, 104, 105, 107, 108-109, 110, 111, 112

Benchmark SC.B.1.2.5

The student knows that various forms of energy (e.g., mechanical, chemical, electrical, magnetic, nuclear, and radiant) can be measured in ways that make it possible to determine the amount of energy that is transformed.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. extends and refines use of a variety of tools to measure the gain or loss of energy.	**Student Book:** 117 **Teacher's Guide:** 103, 111, 116, 117

Benchmark SC.B.1.2.6

The student knows ways that heat can move from one object to another.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that some materials conduct heat better than others.	**Student Book:** 113, 114-115, 116, 117, 118 **Teacher's Guide:** 87a, 87d, 113, 114-115, 116, 117, 118

Standard 2

The student understands the interaction of matter and energy.

Benchmark SC.B.2.2.3

The student knows that the limited supply of usable energy sources (e.g., fuels such as coal or oil) places great significance on the development of renewable energy sources.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that the limited supply of usable energy sources (for example, fuels such as coal or oil) places great significance on the development of renewable energy sources.	**Student Book:** 127, 128-129, 130, 131, 132, 145 **Teacher's Guide:** 125a, 125b, 127, 128, 129, 130, 131, 132

Strand C: Force and Motion

Standard 1

The student understands that types of motion may be described, measured, and predicted.

Benchmark SC.C.1.2.1

The student understands that the motion of an object can be described and measured.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. uses scientific tools (for example, stopwatch, meter stick, compass) to measure speed, distance, and direction of an object.	**Student Book:** 107, 108-109, 110, 111, 112 **Teacher's Guide:** 87a, 87d, 107, 108-109, 110, 111, 112

Benchmark SC.C.1.2.2

The student knows that waves travel at different speeds through different materials.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that waves travel at different speeds through different materials.	**Student Book:** 51, 53, 54 **Teacher's Guide:** 49a, 49b, 49c, 51, 53, 54

Standard 2

The student understands that the types of force that act on an object and the effect of that force can be described, measured, and predicted.

Benchmark SC.C.2.2.2

The student knows that an object may move in a straight line at a constant speed, speed up, slow down, or change direction dependent on net force acting on the object.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that objects do not change their motion unless acted upon by an outside force.	**Student Book:** 107 **Teacher's Guide:** 107, 111
2. understands how friction affects an object in motion.	**Student Book:** 112 **Teacher's Guide:** 112

Benchmark SC.C.2.2.3

The student knows that the more massive an object is, the less effect a given force has.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows the relationship between the strength of a force and its effect on an object (for example, the greater the force, the greater the change in motion; the more massive the object, the smaller the effect of a given force).	**Student Book:** 106 **Teacher's Guide:** 106

Benchmark SC.C.2.2.4

The student knows that the motion of an object is determined by the overall effect of all the forces acting on the object.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 2. understands how inertia, gravity, friction, mass, and force affect motion.	**Student Book:** 107, 108-109, 110, 111, 112 **Teacher's Guide:** 107, 108-109, 110, 111, 112

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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that rocks are constantly being formed and worn away.	**Student Book:** 62, 66 **Teacher's Guide:** 57, 62, 66

Benchmark SC.D.1.2.4

The student knows that the surface of the Earth is in a continuous state of change as waves, weather, and shifts of the land constantly change and produce many new features.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. understands how eroded materials are transported and deposited over time in new areas to form new features (for example, deltas, beaches, dunes).	**Student Book:** 63, 64-65, 66, 67, 68, 87 **Teacher's Guide:** 49a, 49c, 63, 64-65, 66, 67, 68
2. understands that geological features result from the movement of the crust of the Earth (for example, mountains, volcanic islands).	**Student Book:** 51, 52-53, 54, 55, 56, 63, 64-65, 66, 67, 68, 87 **Teacher's Guide:** 49a, 49c, 51, 52-53, 54, 55, 56, 63, 64-65, 66, 67, 68

Benchmark SC.D.1.2.5

The student knows that some changes in the Earth's surface are due to slow processes and some changes are due to rapid processes.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. understands how the surface of the Earth is shaped by both slow processes (for example, weathering, erosion, deposition) and rapid, cataclysmic events (for example, earthquakes, tsunamis, volcanoes).	**Student Book:** 51, 52-53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64-65, 66, 67, 68, 87 **Teacher's Guide:** 49a, 49b, 49c, 51, 52-53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64-65, 66, 67, 68, 87

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 improve and protect the quality of life.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. extends and refines knowledge of ways people can reuse, recycle, and reduce the use of resources to improve and protect the quality of life.	**Student Book:** 147, 151 **Teacher's Guide:** 147, 151

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.1.2.2

The student knows that the combination of Earth's movement and the Moon's own orbit around the Earth results in the appearance of cyclical phases of the Moon.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows the relative positions of the Moon, Earth, and Sun during each of the phases of the Moon.	**Teacher's Guide:** 81, 82

Benchmark SC.E.1.2.4

The student knows that the planets differ in size, characteristics, and composition and that they orbit the Sun in our Solar System.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that the planets differ in size, characteristics, and composition and that they orbit the Sun in our Solar System.	**Student Book:** 81, 82, 83, 84, 85, 86 **Teacher's Guide:** 81, 82, 83, 84-85, 86

Strand F: Processes of Life

Standard 1

The student describes patterns of structure and function in living things.

Benchmark SC.F.1.2.4

The student knows that similar cells form different kinds of structures.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 2. knows the parts of plants and animal cells.	**Student Book:** 25 **Teacher's Guide:** 25, 28

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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that many characteristics of an organism are inherited from the genetic ancestors of the organism (for example, eye color, flower color).	**Student Book:** 14-15, 16, 17, 37, 40, 41 **Teacher's Guide:** 11a, 11b, 11c, 11d, 14-15, 16, 17, 37, 40, 41
2. knows that some characteristics result from the organism's interactions with the environment (for example, flamingos eat a certain crustacean that causes their feathers to be pink).	**Student Book:** 43, 44, 45, 46, 47, 48 **Teacher's Guide:** 11a, 11d, 43, 44, 45, 46, 47, 48

Strand G: How Living Things Interact with Their Environment

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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. understands the various roles of single-celled organisms in the environment.	**Teacher's Guide:** 19

Benchmark SC.G.1.2.2

The student knows living things compete in a climatic region with other living things and that structural adaptations make them fit for an environment.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. understands how changes in the environment affect organisms (for example, some organisms move in, others move out; some organisms survive and reproduce, others die).	**Student Book:** 43, 44, 45, 46, 47, 48, 49, 133, 134-135, 136, 137, 138, 145 **Teacher's Guide:** 43, 44, 45, 46, 47, 48, 133, 134-135, 136, 137, 138

Benchmark 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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that green plants use carbon dioxide, water, and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction.	**Student Book:** 25, 26-27, 28, 29, 30 **Teacher's Guide:** 11a, 11c, 25, 26, 27, 28, 29, 30

Standard 2

The student understands the consequences of using limited natural resources.

Benchmark 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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows that adaptations to their environment may increase the survival of a species.	**Student Book:** 25, 26-27, 28, 29, 30, 43, 44, 45, 46, 47, 48, 49, 133, 134-135, 136, 137, 138, 145 **Teacher's Guide:** 11a, 11c, 25, 26, 27, 28, 29, 30, 43, 44, 45, 46, 47, 48, 133, 134-135, 136, 137, 138

Strand H: The Nature of Science

Standard 1

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

Benchmark 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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. understands the importance of communication among scientists (for example, informing and becoming informed about scientific investigations in progress and the work of others; exposing ideas to the criticism of others).	**Student Book:** 72 74 **Teacher's Guide:** 72-74

Benchmark SC.H.1.2.4

The student knows that to compare and contrast observations and results is an essential skill in science.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. uses strategies to review, compare and contrast, and critique scientific investigations.	**Student Book:** 22, 23, 55, 56, 60, 61, 62, 78, 79, 83, 93, 94, 99, 100, 106, 117, 118, 121, 123, 124, 151, 152 **Teacher's Guide:** 22, 23, 55, 56, 60, 61, 62, 78, 79, 83, 93, 94, 99, 100, 106, 117, 118, 121, 123, 124, 151, 152

Benchmark 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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. uses sketches and diagrams to propose scientific solutions to problems.	**Student Book:** 16, 17, 18, 24, 29, 31, 33, 35, 36, 37, 45, 47, 57, 61, 62, 68, 69, 71, 74, 94, 98, 104, 110, 117, 131, 141, 143, 157, 159, 162, 163 **Teacher's Guide:** 16, 17, 18, 24, 27, 29, 31, 33, 35, 36, 37, 40, 45, 47, 57, 61, 62, 68, 71, 74, 91, 94, 98, 104, 105, 106, 110, 111, 116, 117, 131, 141, 143, 157, 159, 162, 163
2. constructs models to compare objects in science.	**Student Book:** 60-61, 63, 78-79, 83 **Teacher's Guide:** 60-61, 63, 66-67, 73, 78-79, 83, 85

Standard 2

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

Benchmark SC.H.2.2.1

The student knows that natural events are often predictable and logical.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. makes a prediction for a new investigation using the data from a previous investigation.	**Student Book:** 43, 47, 133, 138, 139, 143 **Teacher's Guide:** 43, 47, 133, 138, 139, 143
2. understands that change is constantly occurring and uses strategies to analyze different patterns of change.	**Student Book:** 81, 82, 83, 84, 85, 86, **Teacher's Guide:** 81, 82, 83, 84, 85, 86

Standard 3

The student understands that science, technology, and society are interwoven and interdependent.

Benchmark 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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. knows areas in which technology has improved human lives (for example, transportation, communication, nutrition, sanitation, health care, entertainment).	**Student Book:** 101, 102-103, 104, 105, 106, 107, 108-109, 110, 111, 112, 113, 114-115, 116, 117, 118, 147, 148-149, 150 **Teacher's Guide:** 101, 102, 103, 104, 105, 106, 107, 108-109, 110, 111, 112, 113, 114-115, 116, 117, 118, 147, 148-149, 150
2. knows that new inventions often lead to other new inventions and ways of doing things.	**Student Book:** 101, 102-103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114-115, 116, 117, 118 **Teacher's Guide:** 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114-115, 116, 117, 118

Benchmark SC.H.3.2.2

The student knows that data are collected and interpreted in order to explain an event or concept.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. selects appropriate graphical representations (for example, graphs, charts, diagrams) to collect, record, and report data.	**Student Book:** 29, 33, 35, 36, 45, 47, 61, 62, 71, 74, 94, 98, 104, 105, 110, 111, 112, 117, 121, 124, 131, 141, 143, 157, 162, 163 **Teacher's Guide:** 29, 33, 35, 36, 45, 47, 61, 62, 71, 74, 94, 98, 104, 105, 110, 111, 112, 117, 121, 124, 131, 141, 143, 157, 162, 163

Benchmark 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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. understands how a solution to one scientific problem can create another problem.	**Teacher's Guide:** 132

Benchmark 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.

Grade Level Expectations, Grade 5	Science Daybook, Grade 5
The student: 1. extends and refines knowledge of ways that, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas.	**Student Book:** 147, 148-149, 150, 151, 152, 153, 154- 155, 156, 157, 158 **Teacher's Guide:** 147, 148-149, 150, 151, 152, 153, 154-155, 156, 157, 158

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