

LIFE SCIENCE DAYBOOK
EARTH SCIENCE DAYBOOK
PHYSICAL SCIENCE DAYBOOK

correlated to

**Grade Level Expectations for
the Sunshine State Standards
Grades 6-8**



EDUCATION GROUP



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 correlated to
Grade Level Expectations for the
Sunshine State Standards
Grade 6

Strand A: The Nature of Matter

Standard 1

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

Benchmark S.C.A.1.3.1

The student identifies various ways in which substances differ (e.g., mass, volume, shape, density, texture, and reaction to temperature and light).

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows ways in which substances differ (for example, mass, volume, shape, density, texture, reaction to heat and light).	Earth Science Student Book: 196 Earth Science Teacher's Guide: 31, 82, 87, 196 Physical Science Student Book: 124, 125, 128-129, 146, 148, 149, 150, 160, 162, 163, 164, 165 Physical Science Teacher's Guide: 124, 125, 128, 129, 146, 147-148, 149, 150, 151, 159, 160, 162, 164, 165

Benchmark S.C.A.1.3.2

The student understands the difference between weight and mass.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that mass is the amount of material in an object.	Life Science Student Book: 106, 107, 222 Physical Science Student Book: 24-26, 221 Physical Science Teacher's Guide: 24, 25-26

Benchmark S.C.A.1.3.3

The student knows that temperature measures the average energy of motion of the particles that make up the substance.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that increasing the average motion of the particles in a substance increases the temperature of the substance.	Physical Science Student Book: 187 Physical Science Teacher's Guide: 128, 187
2. understands that decreasing the average motion of the particles decreases the temperature.	Physical Science Student Book: 187 Physical Science Teacher's Guide: 128, 187
3. determines the effect of a change in temperature on common materials (for example, butter, food coloring in water, isopropol alcohol).	Physical Science Student Book: 148-149, 150-151 Physical Science Teacher's Guide: 149, 150, 152

Benchmark S.C.A.1.3.4

The student knows that atoms in solids are close together and do not move around easily; in liquids, atoms tend to move farther apart; in gas, atoms are quite far apart and move around freely.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that matter may exist as solids, liquids, and gases.	Earth Science Student Book: 94 Earth Science Teacher's Guide: 82, 94, 118 Physical Science Student Book: 154 Physical Science Teacher's Guide: 152, 153
2. knows that molecular motion increases from solids to liquids to gases.	Physical Science Student Book: 139 Physical Science Teacher's Guide: 139

Benchmark S.C.A.1.3.5

The student knows the difference between a physical change in a substance (e.g., altering the shape, form, volume, or density) and a chemical change (i.e., producing new substances with different characteristics).

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. knows the physical properties of various substances.</p>	<p>Earth Science Student Book: 196</p> <p>Earth Science Teacher's Guide: 31, 82, 87, 196</p> <p>Physical Science Student Book: 124, 125, 128-129, 139, 146, 148, 149, 150, 160, 162, 163, 164, 165</p> <p>Physical Science Teacher's Guide: 124, 125, 128, 129, 139, 146, 147-148, 149, 150, 151, 159, 160, 162, 164, 165</p>
<p>2. knows the chemical properties of various substances.</p>	<p>Physical Science Student Book: 139, 166-167, 168-171, 172-175</p> <p>Physical Science Teacher's Guide: 139, 166B, 166-167, 168-171, 172-175</p>
<p>3. knows the difference between a physical and chemical change.</p>	<p>Physical Science Student Book: 124-127, 128-129, 130-133, 178-181, 182-185, 186-187, 188-191, 192-195</p> <p>Physical Science Teacher's Guide: 124-127, 128-129, 130-133, 178B, 178-181, 182-185, 186-187, 188B, 188-191, 192-195</p>

Benchmark S.C.A.1.3.6

The student knows that equal volumes of different substances may have different masses.

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. knows that equal volumes of different substances may have different masses.</p>	<p>Earth Science Student Book: 196</p> <p>Earth Science Teacher's Guide: 196</p>

Standard 2

The student understands the basic principles of atomic theory.

Benchmark S.C.A.2.3.1

The student describes and compares the properties of particles and waves.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that particles and objects may be either neutral or have a positive or negative charge.	Physical Science Student Book: 52, 53, 58, 187 Physical Science Teacher's Guide: 52, 53, 54
2. knows the properties of waves (frequency, amplitude, wavelength).	Physical Science Student Book: 97, 100, 103, 117, 224 Physical Science Teacher's Guide: 94B, 97, 100, 101, 103, 114B, 117
3. knows how to compare and contrast the properties of particles and waves.	Physical Science Student Book: 52-55, 97, 100, 103, 224 Physical Science Teacher's Guide: 52-55, 94B, 97, 100, 101, 103

Benchmark S.C.A.2.3.2

The student knows the general properties of the atom (a massive nucleus of neutral neutrons and positive protons surrounded by a cloud of negative electrons) and accepts that single atoms are not visible.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands the behavior of charged particles as evidenced by simple static electricity experiments.	Physical Science Student Book: 52-55 Physical Science Teacher's Guide: 52-55
2. determines the charge of an ion by comparing the number of protons and electrons associated with it.	Physical Science Student Book: 186-187, 221 Physical Science Teacher's Guide: 179, 186-187

Benchmark S.C.A.2.3.3

The student knows that radiation, light, and heat are forms of energy used to cook food, treat diseases, and provide energy.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows forms of radiant energy and their applications to everyday life (for example, visible, microwave, radio).	Earth Science Student Book: 206 Earth Science Teacher's Guide: 206 Physical Science Student Book: 98, 99, 100, 102-103, 117 Physical Science Teacher's Guide: 98, 103, 117

Strand B: Energy

Standard 1

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

Benchmark S.C.B.1.3.1

The student identifies forms of energy and explains that they can be measured and compared.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows different types of energy and the units used to quantify the energy (for example, solar, nuclear, electrical, chemical).	Earth Science Student Book: 30, 34, 35, 130 Earth Science Teacher's Guide: 30, 32, 34, 130 Physical Science Student Book: 14, 15, 70, 71, 94, 96-97, 98-101, 110, 128-129, 183-185, 186-187, 198-199, 200-203, 204-207 Physical Science Teacher's Guide: 14, 94B, 94, 95, 96, 97, 98-101, 110, 128-129, 183-185, 186-187, 198-199, 200-203, 204-207
2. understands that energy can be converted from one form to another (for example, solar energy to heat energy).	Earth Science Student Book: 35, 39, 130 Earth Science Teacher's Guide: 30, 35, 130 Physical Science Student Book: 14, 15, 16, 59, 87, 201, 202 Physical Science Teacher's Guide: 14, 15, 16, 59, 70, 71, 87, 200

Benchmark S.C.B.1.3.2

The student knows that energy cannot be created or destroyed, but only changed from one form to another.

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. understands that energy can be changed in form.</p>	<p>Life Science Student Book: 20-23</p> <p>Life Science Teacher’s Guide: 24-25, 28</p> <p>Earth Science Student Book: 35, 39, 130</p> <p>Earth Science Teacher’s Guide: 30, 35, 130</p> <p>Physical Science Student Book: 14, 15, 16, 87, 201, 202</p> <p>Physical Science Teacher’s Guide: 14, 15, 16, 70, 87, 201, 202</p>
<p>2. uses examples to demonstrate common energy transformations.</p>	<p>Life Science Student Book: 22</p> <p>Life Science Teacher’s Guide: 22</p> <p>Physical Science Student Book: 15, 96, 201, 202</p> <p>Physical Science Teacher’s Guide: 15, 201</p>

Benchmark S.C.B.1.3.3

The student knows that the various forms in which energy comes to Earth from the Sun (e.g., visible light, infrared, and microwave).

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. knows types of radiant energy that come to Earth from the Sun (for example, visible, infrared, ultraviolet).</p>	<p>Earth Science Student Book: 206</p> <p>Earth Science Teacher’s Guide: 206</p> <p>Physical Science Student Book: 98, 99, 100, 101</p> <p>Physical Science Teacher’s Guide: 98, 100</p>
<p>2. knows the effect of sunlight on photosynthetic pigments.</p>	<p>Life Science Student Book: 24-25, 28-29</p> <p>Life Science Teacher’s Guide: 24-25, 28-29</p>

Standard 2

The student understands the interaction of matter and energy.

Benchmark SC.B.2.3.1

The student knows that most events in the universe (e.g., weather changes, moving cars, and the transfer of a nervous impulse in the human body) involve some form of energy transfer and that these changes almost always increase the total disorder of the system and its surroundings, reducing the amount of useful energy.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that energy moves through systems.	Life Science Student Book: 188 Life Science Teacher's Guide: 188 Physical Science Student Book: 15 Physical Science Teacher's Guide: 15

Strand C: Force and Motion

Standard 1

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

Benchmark SC.C.1.3.1

The student knows that the motion of an object can be described by its position, direction of motion, and speed.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that a change in motion and position can be measured.	Earth Science Student Book: 80-81 Earth Science Teacher's Guide: 80-81 Physical Science Student Book: 13, 18-19, 25 Physical Science Teacher's Guide: 13, 18, 19, 25
2. knows ways to measure time intervals.	Life Science Teacher's Guide: 170 Earth Science Teacher's Guide: 35 Physical Science Student Book: 18 Physical Science Teacher's Guide: 89, 150, 201
3. knows ways to estimate speed.	Physical Science Student Book: 25

Benchmark S.C.C.1.3.2

The student knows that vibrations in materials set up wave disturbances that spread away from the source (e.g., sound and earthquake waves).

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. uses common items (a pebble dropped in water, a marble dropped in sand) to demonstrate that vibrations in materials set up visible disturbances that spread away from a force in all directions.	Physical Science Teacher's Guide: 105

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 S.C.C.2.3.3

The student knows that if more than one force acts on an object, then the forces can reinforce or cancel each other, depending on their direction and magnitude.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. recognizes the result of several forces acting on an object.	Life Science Student Book: 46-47 Life Science Teacher's Guide: 46-47 Physical Science Student Book: 22 Physical Science Teacher's Guide: 20B, 21, 22
2. knows that the net force is dependent on the direction and magnitude of forces acting on a body.	Physical Science Student Book: 22 Physical Science Teacher's Guide: 20B, 22

Benchmark S.C.C.2.3.4

The student knows that simple machines can be used to change direction or size of a force.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows uses of simple machines.	Physical Science Student Book: 30, 31, 34, 35 Physical Science Teacher's Guide: 30, 34, 35
2. knows advantages and disadvantages of simple machines.	Physical Science Student Book: 30, 31 Physical Science Teacher's Guide: 30

Benchmark S.C.C.2.3.5

The student understands that an object in motion will continue at a constant speed and in a straight line until acted upon by a force and that an object at rest will remain at rest until acted upon by a force.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that an object at rest will stay at rest unless acted upon by an outside force.	Physical Science Student Book: 12, 22
2. knows objects in motion will remain in motion unless acted upon by an outside force.	Physical Science Student Book: 11, 12, 22 Physical Science Teacher's Guide: 20

Benchmark S.C.C.2.3.7

The student knows that gravity is a universal force that every mass exerts on every other mass.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that gravity is a force that causes an object to fall to the ground.	Earth Science Teacher's Guide: 212 Physical Science Student Book: 16, 22 Physical Science Teacher's Guide: 15, 20, 22
2. know that gravity causes an object to have weight.	Earth Science Teacher's Guide: 212

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 S.C.D.1.3.1

The student knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that the surface of the Earth is constantly changing due to mechanical and chemical action.	Earth Science Student Book: 52, 62, 63, 64, 70, 72, 76, 78, 79, 80 Earth Science Teacher's Guide: 52, 62, 63, 71, 72, 76, 78, 79, 80

Benchmark S.C.D.1.3.2

The student knows over the whole Earth, organisms are growing, dying, and decaying as new organisms are produced by the old ones.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that sedimentary rock may contain fossils of plants, animals, and microbes.	Earth Science Student Book: 42
2. knows ways the systems of Earth change over time and predicts the causes of the change.	Earth Science Teacher's Guide: 47

Benchmark S.C.D.1.3.3

The student knows how conditions that exist in one system influence the conditions that exist in other systems.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that different events on the Earth change features on Earth (for example, hurricanes, earthquakes, volcanoes).	Earth Science Student Book: 70, 78, 79 Earth Science Teacher's Guide: 70, 78, 79, 83

Benchmark S.C.D.1.3.4

The student knows the ways in which plants and animals reshape the landscape (e.g., bacteria, fungi, worms, rodents, and other organisms add organic matter to the soil, increasing soil fertility, encouraging plant growth, and strengthening resistance to erosion).

Grade Level Expectations, Grade 6	Science Daybooks
The student: 2. knows ways that plants and animals reconstitute the soil and alter the landscape.	Earth Science Student Book: 52, 55 Earth Science Teacher's Guide: 52, 60
3. understands the processes that prevent or cause erosion.	Earth Science Student Book: 52, 55, 60, 62, 63, 70 Earth Science Teacher's Guide: 52, 55, 63

Benchmark S.C.D.1.3.5

The student understands concepts of time and size relating to the interaction of Earth's processes (e.g., lightning striking in a split second as opposed to the shifting of the Earth's plates altering the landscape, distance between atoms measured in Angstrom units as opposed to distance between stars measured in light-years).

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands the range of time over which natural events occur (for example, lightning in seconds, mountains form over many years).	Earth Science Student Book: 72, 75 Earth Science Teacher's Guide: 72, 75

Standard 2

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

Benchmark S.C.D.2.3.1

The student understands that quality of life is relevant to personal experience.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that a change in the environment affects the quality of life in different ways for different organisms.	Life Science Student Book: 196-197, 206-207, 208-209, 212-213 Life Science Teacher's Guide: 196-197, 206-207, 208-209, 212-213

Benchmark S.C.D.2.3.2

The student knows the positive and negative consequences of human action on the Earth's systems.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows the positive and negative consequences of human action on the Earth's systems (for example, farming, transportation, mining, manufacturing).	Life Science Student Book: 206-207, 208-209, 212-213 Life Science Teacher's Guide: 206-207, 208-209, 212-213 Earth Science Student Book: 52, 55, 60, 110, 111 Earth Science Teacher's Guide: 55, 94B, 110, 111

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 S.C.E.1.3.3

The student understands that our Sun is one of many stars in our galaxy.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that our Sun is one of many stars in our galaxy.	Earth Science Student Book: 198, 201

Strand F: Processes of Life

Standard 1

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

Benchmark S.C.F.1.3.1

The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows ways systems in an organism function and interact (for example, the muscular system provides the ability to move and is supported by the skeletal system when one is present).	Life Science Student Book: 47, 110, 111, 128, 129, 130, 131, 146, 147, 150, 151, 152, 153, 154, 155 Life Science Teacher's Guide: 47, 110, 111, 128, 129, 130, 131, 146, 147, 150, 151, 152, 153, 154, 155
2. understands the differences between growth and maintenance.	Life Science Student Book: 98, 99, 100, 101, 102, 103, 118, 119, 120, 121, 128, 129, 130, 131, 146, 147, 148, 149 Life Science Teacher's Guide: 98, 99, 100, 101, 102, 103, 118, 119, 120, 121, 128, 129, 130, 131, 146, 147, 148, 149

Benchmark SC.F.1.3.2

The student knows that the structural basis of most organisms is the cell and most organisms are single cells, while some, including humans, are multicellular.

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. knows that the cell is the basic unit of structure and function in all living things.</p>	<p>Life Science Student Book: 10, 11, 12, 13, 14, 15, 16, 17, 20, 23, 24, 25, 26, 27</p> <p>Life Science Teacher's Guide: 20A, 20B, 10, 11, 12, 13, 14, 15, 16, 17, 20, 23, 24, 25, 26, 27</p>
<p>2. knows that there is great diversity among unicellular organisms.</p>	<p>Life Science Student Book: 10</p> <p>Life Science Teacher's Guide: 10</p>
<p>3. knows the basic processes that occur in cells.</p>	<p>Life Science Student Book: 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37</p> <p>Life Science Teacher's Guide: 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37</p>

Benchmark SC.F.1.3.3

The student knows that in multicellular organisms cells grow and divide to make more cells in order to form and repair various organs and tissues.

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. knows that in multicellular organisms cells grow and divide to form and repair various organs and tissues.</p>	<p>Life Science Student Book: 20, 21, 22, 23, 30, 31, 32, 33, 34, 35, 36, 37</p> <p>Life Science Teacher's Guide: 20, 21, 22, 23, 30, 31, 32, 33, 34, 35, 36, 37</p>
<p>2. understands cells reproduce to ensure the growth and repair of tissue.</p>	<p>Life Science Student Book: 30, 31, 32, 33, 34, 35, 36, 37</p> <p>Life Science Teacher's Guide: 30, 31, 32, 33, 34, 35, 36, 37</p>

Benchmark SC.F.1.3.4

The student knows that the levels of structural organization for function in living things include cells, tissues, organs, systems, and organisms.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that the levels of structural organization for function in living things include cells, tissues, organs, systems, and organisms.	Life Science Student Book: 10, 11, 12, 13, 34, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 58, 59 Life Science Teacher's Guide: 10, 11, 12, 13, 34, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 58, 59

Benchmark SC.F.1.3.5

The student explains how the life functions of organisms are related to what occurs within the cell.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that there are structures with particular functions that are unique to certain types of cells (for example, plant cells have cell walls, animal cells do not).	Life Science Student Book: 14, 15, 16, 17, 18, 19, 24, 25, 26, 27 Life Science Teacher's Guide: 14, 15, 16, 17, 18, 19, 24, 25, 26, 27
2. understands the process of osmosis and diffusion.	Life Science Student Book: 12 Life Science Teacher's Guide: 12 Earth Science Teacher's Guide: 119
3. knows the essential functions in cells.	Life Science Student Book: 10, 11, 16, 17, 18, 19, 20, 21, 24, 25, 28, 29 Life Science Teacher's Guide: 10A, 11B, 10, 11, 16, 17, 18, 19, 20, 21, 24, 25, 28, 29

Benchmark SC.F.1.3.6

The student knows that the cells with similar functions have similar structures, whereas those with different structures have different functions.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. uses or constructs models of plant and animal cells to identify the basic structures of each.	Life Science Student Book: 12, 13, 16, 17, 17, 20, 31 Life Science Teacher's Guide: 12, 13, 16, 17, 17, 20, 31

Grade Level Expectations, Grade 6	Science Daybooks
2. knows the functions of structures in plant and animal cells.	<p>Life Science Student Book: 14, 15, 16, 17, 18, 19, 24, 25, 26, 27</p> <p>Life Science Teacher’s Guide: 14, 15, 16, 17, 18, 19, 24, 25, 26, 27</p>

Benchmark SC.F.1.3.7

The student knows that behavior is a response to the environment and influences growth, development, maintenance, and reproduction.

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. knows that behavior is a response to the environment.</p>	<p>Life Science Student Book: 114, 115, 116, 117, 124, 125, 126, 127, 200, 201, 122, 123, 150, 151, 152, 153</p> <p>Life Science Teacher’s Guide: 114, 115, 116, 117, 124, 125, 126, 127, 200, 201, 122, 123, 150, 151, 152, 153</p>

Standard 2

The student understands the process and importance of genetic diversity.

Benchmark SC.F.2.3.3

The student knows that generally organisms in a population live long enough to reproduce because they have survival characteristics.

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. knows adaptations that aid in species survival (for example, protective coloration, hibernation, delayed implantation).</p>	<p>Life Science Student Book: 72, 73, 74, 75, 76, 77, 78, 79</p> <p>Life Science Teacher’s Guide: 72, 73, 74, 75, 76, 77, 78, 79</p> <p>Physical Science Student Book: 147</p> <p>Physical Science Teacher’s Guide: 147</p>

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.1.3.3

The student understands that the classification of living things is based on a given set of criteria and is a tool for understanding biodiversity and interrelationships.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that living things are sorted for convenience and identification.	Life Science Student Book: 82, 83, 84, 85, 86, 87, 88, 89, 90, 91 Life Science Teacher's Guide: 82, 83, 84, 85, 86, 87, 88, 89, 90, 91
2. understands that the structural characteristics among animals and plants are more alike as organisms are closer to the same kind of species within a classification level.	Life Science Student Book: 82, 83, 84, 85, 86, 87, 88, 89, 90, 91 Life Science Teacher's Guide: 82, 83, 84, 85, 86, 87, 88, 89, 90, 91

Benchmark SC.G.1.3.4

The student knows that the interactions of organisms with each other and with the non-living parts of their environments result in the flow of energy and the cycling of matter throughout the system.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows the nonliving (abiotic) and living (biotic) aspects of an ecosystem.	Life Science Student Book: 192-195, 196-197 Life Science Teacher's Guide: 179, 192-195, 196-197
2. understands how the components of an ecosystem interact.	Life Science Student Book: 178, 179, 180, 181, 192, 193, 194, 196, 197 Life Science Teacher's Guide: 178, 179, 180, 181, 189, 192, 193, 194, 196, 197
3. understands that food chains show specific trophic relationships and food webs are used to illustrate interrelationships of trophic levels.	Life Science Student Book: 75, 182, 188, 189, 192, 196, 204 Life Science Teacher's Guide: 75, 182, 188, 192, 196, 204

Standard 2

The student understands the consequences of using limited natural resources.

Benchmark SC.G.2.3.1

The student knows that some resources are renewable and others are nonrenewable.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows renewable and nonrenewable energy sources.	Life Science Student Book: 20, 21, 22, 24, 25, 28 Life Science Teacher's Guide: 20, 21, 22, 24, 25, 28 Earth Science Student Book: 30, 34, 37 Earth Science Teacher's Guide: 37

Benchmark SC.G.2.3.2

The student knows that all biotic and abiotic factors are interrelated and that if one factor is changed or removed, it impacts the availability of other resources within the system.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. distinguishes between biotic and abiotic factors in the environment.	Life Science Teacher's Guide: 179, 196

Benchmark SC.G.2.3.3

The student knows that a brief change in the limited resources of an ecosystem may alter the size of a population or the average size of individual organisms and that long-term change may result in the elimination of animal and plant populations inhabiting the Earth.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that changes in the environment may influence the size, number, or diversity of organisms in an area.	Life Science Student Book: 178, 179, 180, 181, 182, 183, 184, 185, 192, 193, 194, 195, 196, 197 Life Science Teacher's Guide: 178, 179, 180, 181, 182, 183, 184, 185, 192, 193, 194, 195, 196, 197

Benchmark S.C.G.2.3.4

The student understands that humans are a part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in ecosystems.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. understands that humans are a part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in the ecosystem.	Life Science Student Book: 196, 197 Life Science Teacher's Guide: 196, 197 Earth Science Student Book: 52, 55, 110, 111 Earth Science Teacher's Guide: 52, 110, 111

Strand H: The Nature of Science

Standard 1

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

Benchmark S.C.H.1.3.1

The student knows that scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows ways scientific theories may change with new discoveries.	Life Science Student Book: 84, 85, 86, 87, 88, 89 Life Science Teacher's Guide: 84, 85, 86, 87, 88, 89 Earth Science Student Book: 24, 72, 74, 78, 79, 80, 192, 193 Earth Science Teacher's Guide: 24, 72B, 72, 74, 78, 79, 81, 192 Physical Science Student Book: 140 Physical Science Teacher's Guide: 138, 140, 141
2. understands that new technology may lead to new discoveries.	Life Science Student Book: 86, 87, 88, 89 Life Science Teacher's Guide: 86, 87, 88, 89 Earth Science Student Book: 80, 185, 203 Earth Science Teacher's Guide: 80, 203

Benchmark S.C.H.1.3.2

The student knows that the study of the events that led scientists to discoveries can provide information about the inquiry process and its effects.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. uses systematic, scientific processes to develop and test hypotheses.	Life Science Student Book: 26, 27 Life Science Teacher's Guide: 26, 27 Earth Science Student Book: 175 Earth Science Teacher's Guide: 171, 175 Physical Science Student Book: 18-19, 77, 119, 149, 150-151 Physical Science Teacher's Guide: 19, 77, 119, 49, 151
2. knows that the scientific method is a process that involves a logical and empirical but flexible approach to problem solving.	Life Science Student Book: 90, 91 Life Science Teacher's Guide: 90, 91

Benchmark S.C.H.1.3.3

The student knows that science disciplines differ from one another in topic, techniques, and outcomes but that they share a common purpose, philosophy, and enterprise.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that that the disciplines of science provide in depth study and information that becomes available for all to share and use.	Life Science Student Book: 24, 25, 26, 27 Life Science Teacher's Guide: 24, 25, 26, 27 Physical Science Student Book: 62 Physical Science Teacher's Guide: 62, 66, 69

Benchmark S.C.H.1.3.4

The student knows that accurate record keeping, openness, and replication are essential to maintaining an investigator’s credibility with other scientists and society.

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. knows that accurate record keeping, openness, and replication are essential to maintaining an investigator’s credibility with other scientists and society.</p>	<p>Life Science Student Book: 24, 26-27, 86-89, 122-123, 166-169</p> <p>Life Science Teacher’s Guide: 24, 26-27, 86-89, 122-123, 166-169</p> <p>Physical Science Student Book: 67</p> <p>Physical Science Teacher’s Guide: 67</p>
<p>2. uses accurate records, openness, and replication of experiments to ensure creditability.</p>	<p>Physical Science Student Book: 67</p> <p>Physical Science Teacher’s Guide: 67</p>

Benchmark S.C.H.1.3.5

The student knows that a change in one or more variables may alter the outcome of an investigation.

Grade Level Expectations, Grade 6	Science Daybooks
<p>The student:</p> <p>1. understands the importance of the control in an experiment.</p>	<p>Life Science Student Book: 27, 138-139</p> <p>Life Science Teacher’s Guide: 27, 138-139</p>
<p>2. knows how to identify the independent and dependent variables in an experiment.</p>	<p>Life Science Student Book: 24, 25, 26, 27, 132-133, 136-139, 188-191</p> <p>Life Science Teacher’s Guide: 24, 25, 26, 27, 132-133, 136-139, 188-191</p>

Benchmark S.C.H.1.3.6

The student recognizes the scientific contributions that are made by individuals of diverse backgrounds, interests, talents, and motivations.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows selected scientists and their accomplishments.	Earth Science Student Book: 25, 40, 41, 72, 73, 76, 78, 136, 200 Earth Science Teacher's Guide: 25, 72 Physical Science Student Book: 11, 12, 22, 25, 30, 31, 33, 36-37, 62, 63, 69, 83, 88, 114, 138 Physical Science Teacher's Guide: 28, 33, 62, 69, 83, 140
2. knows that scientists who make contributions to knowledge come from all kinds of backgrounds and possess varied talents, interests, and goals.	Earth Science Student Book: 25, 40, 41, 72, 76 Earth Science Teacher's Guide: 25, 26, 72 Physical Science Student Book: 30, 33, 62, 83, 88, 114, 138 Physical Science Teacher's Guide: 33, 62, 83

Standard 2

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

Benchmark S.C.H.2.3.1

The student recognizes that patterns exist within and across systems.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that most natural events occur in patterns.	Earth Science Student Book: 123, 126-127, 166, 167, 168, 173 Earth Science Teacher's Guide: 123, 126, 166, 173

Standard 3

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

Benchmark S.C.H.3.3.1

The student knows that science ethics demand that scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that science ethics demand scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.	Physical Science Teacher's Guide: 102
2. uses appropriate procedures for safety in the classroom, home, and community.	Earth Science Teacher's Guide: 20A, 30A, 40A, 52A, 62A, 82A, 94A, 114A, 156A, 166A Physical Science Teacher's Guide: 20A, 30A, 72A, 104A, 136A, 146A, 156A, 178A, 188A, 198A

Benchmark S.C.H.3.3.4

The student knows that technological design should require taking into account constraints such as natural laws, the properties of the materials used, and economic, political, social, ethical, and aesthetic values.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows some ways that scientific discoveries create new technologies that affect society (for example, geographic information systems, gene mapping, electronic communication).	Physical Science Student Book: 68, 69, 83, 88 Physical Science Teacher's Guide: 42, 43, 62, 82

Benchmark S.C.H.3.3.5

The student understands that contributions to the advancement of science, mathematics, and technology have been made by different kinds of people, in different cultures, at different times and are an intrinsic part of the development of human culture.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that the advancement of science, mathematics, and technology is ongoing and influenced by a diverse population of scientists.	Earth Science Student Book: 25, 40, 41, 45, 72, 76 Earth Science Teacher's Guide: 25, 26, 72 Physical Science Student Book: 30, 33, 36, 37, 62, 83, 114, 140 Physical Science Teacher's Guide: 30B, 33, 62, 83

Benchmark S.C.H.3.3.6

The student knows that no matter who does science and mathematics or invents things, or when or where they do it, the knowledge and technology that result can eventually become available to everyone.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. knows that scientific contributions may result in diverse technological products.	Earth Science Student Book: 13, 97, 208 Earth Science Teacher's Guide: 12, 96, 208 Physical Science Student Book: 30, 43, 62, 68, 69, 83, 86, 88, 114, 201, 209, 212, 216 Physical Science Teacher's Guide: 30B, 30, 42, 43, 62, 82, 88, 201, 208, 212, 216

Benchmark S.C.H.3.3.7

The student knows that computers speed up and extend people's ability to collect, sort, and analyze data; prepare research reports; and share data and ideas with others.

Grade Level Expectations, Grade 6	Science Daybooks
The student: 1. uses a computer to collect, analyze, and report scientific findings.	Earth Science Student Book: 23, 59, 133, 159, 169, 205, 213 Earth Science Teacher's Guide: 23, 48, 59, 83, 87, 97, 103, 105, 133, 147, 159, 169, 188B, 203, 205, 213 Physical Science Student Book: 71, 77, 155 Physical Science Teacher's Guide: 38-39, 45, 57, 71, 77, 127, 143, 155, 166B



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and Physical Science Daybook © 2003
 correlated to
Grade Level Expectations for the
Sunshine State Standards
Grade 7

Strand A: The Nature of Matter

Standard 1

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

Benchmark S.C.A.1.3.1

The student identifies various ways in which substances differ (e.g., mass, volume, shape, density, texture, and reaction to temperature and light).

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. uses a variety of measurements to describe the physical properties of matter (for example, volume and mass).	Life Science Student Book: 106, 107, 222 Physical Science Student Book: 24-26, 139, 142-145, 150-151, 152-155, 166-167, 172-175, 221 Physical Science Teacher's Guide: 139, 142-145, 150-151, 152-155, 166-167, 172-175

Benchmark S.C.A.1.3.2

The student understands the difference between weight and mass.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. understands that weight is the result of gravitational pull on an object.	Earth Science Student Book: 185, 186, 204, 212 Earth Science Teacher's Guide: 185, 186, 204, 212 Physical Science Student Book: 16, 224

Benchmark S.C.A.1.3.3

The student knows the temperature measures the average energy of motion of the particles that make up the substance.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the difference between heat and temperature.	Earth Science Student Book: 34, 35, 36, 37 Earth Science Teacher's Guide: 34, 35, 36, 37 Physical Science Student Book: 128 Physical Science Teacher's Guide: 129
2. knows that relative changes of position and motion of atoms in a solid, liquid, and gas are the result of an increase or decrease in temperature.	Physical Science Student Book: 139 Physical Science Teacher's Guide: 128, 129

Benchmark S.C.A.1.3.4

The student knows that atoms in solids are close together and do not move around easily; in liquids, atoms tend to move farther apart; in gas, atoms are quite far apart and move around freely.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the direction of energy flow when a change in the phase of matter occurs.	Physical Science Teacher's Guide: 153

Benchmark S.C.A.1.3.5

The student knows the difference between a physical change in a substance (e.g., altering the shape, form, volume, or density) and a chemical change (i.e., producing new substances with different characteristics).

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows that physical changes do not result in new substances.	Physical Science Student Book: 124-127, 128-129, 130-133 Physical Science Teacher's Guide: 124-127, 128-129, 130-133
2. knows that chemical changes result in new substances with different characteristics.	Physical Science Student Book: 178-181, 182-185, 186-187, 188-191, 192-195 Physical Science Teacher's Guide: 178B, 178-181, 182-185, 186-187, 188B, 188-191, 192-195, 202

Grade Level Expectations, Grade 7	Science Daybooks
<p>3. knows chemical and physical changes that occur in nature.</p>	<p>Life Science Student Book: 20-23, 24-27, 28-29</p> <p>Life Science Teacher’s Guide: 20B, 20-23, 24-27, 28-29</p> <p>Earth Science Student Book: 20-23, 24-27, 28-29, 47, 62-65, 66-69, 70-71, 72-75, 76-79, 80-81, 82-85, 86-87, 88-91, 94-95, 96-99, 100-103, 136-137, 138-141, 142-145, 146-149, 150-153, 154-155, 156-159, 160-163, 164-165, 166-169, 170-171, 172-175</p> <p>Earth Science Teacher’s Guide: 20B, 20-23, 24-27, 28-29, 47, 62B, 62-65, 66-69, 70-71, 72B, 72-75, 76-79, 80-81, 82B, 82-85, 86-87, 88-91, 94B, 94-95, 96-99, 100-103, 136-137, 138-141, 142-145, 146B, 146-149, 150-153, 154-155, 156B, 156-159, 160-163, 164-165, 166B, 166-169, 170-171, 172-175</p> <p>Physical Science Student Book: 124-127, 128-129, 130-133, 178-181, 182-185, 186-187, 188-191, 192-195</p> <p>Physical Science Teacher’s Guide: 124-127, 128-129, 130-133, 178B, 178-181, 182-185, 186-187, 188B, 188-191, 192-195, 202</p>

Standard 2

The student understands the basic principles of atomic theory.

Benchmark S.C.A.2.3.1

The student describes and compares the properties of particles and waves.

Grade Level Expectations, Grade 7	Science Daybooks
<p>The student:</p> <p>1. knows that charged particles and objects will attract or repel each other.</p>	<p>Physical Science Student Book: 52, 58, 79</p> <p>Physical Science Teacher’s Guide: 52, 53, 58, 78</p>
<p>2. knows the relationship between frequency and wavelength (the greater the frequency of the wave, the smaller the wavelength of the wave).</p>	<p>Earth Science Student Book: 13</p> <p>Earth Science Teacher’s Guide: 13</p> <p>Physical Science Student Book: 100, 109</p> <p>Physical Science Teacher’s Guide: 100, 109</p>

Benchmark S.C.A.2.3.2

The student knows the general properties of the atom (a massive nucleus of neutral neutrons and positive protons surrounded by a cloud of negative electrons) and accepts that single atoms are not visible.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. understands that protons and neutrons are located in the nucleus of the atom while electrons exist in areas of probability outside of the nucleus.	Physical Science Student Book: 140
2. understands that the mass of an atom is concentrated in the nucleus where the protons and neutrons are located.	Physical Science Student Book: 140
3. determines the mass number and atomic number of an atom from the number of protons and neutrons.	Physical Science Student Book: 140, 174
4. understands that most of the atom is empty space.	Physical Science Student Book: 140 Physical Science Teacher's Guide: 140

Benchmark S.C.A.2.3.3

The student knows that radiation, light, and heat are forms of energy used to cook food, treat diseases, and provide energy.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows uses of radiation, light, and thermal energy to improve the quality of life for human beings (for example, cooking food, treating disease).	Physical Science Student Book: 100, 102, 103 Physical Science Teacher's Guide: 102, 103

Strand B: Energy

Standard 1

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

Benchmark S.C.B.1.3.1

The student identifies forms of energy and explains that they can be measured and compared.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows examples of uses of energy in the home and ways to measure its use.	Earth Science Student Book: 30, 31, 32, 33 Earth Science Teacher's Guide: 30, 31, 32, 33 Physical Science Student Book: 64, 70, 87, 100, 203 Physical Science Teacher's Guide: 59, 62, 87

Benchmark S.C.B.1.3.2

The student knows that energy cannot be created or destroyed, but only changed from one form to another.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the difference between potential and kinetic energy.	Earth Science Student Book: 35 Earth Science Teacher's Guide: 35 Physical Science Student Book: 14, 15, 18 Physical Science Teacher's Guide: 14, 16
2. knows ways to change energy from potential to kinetic.	Earth Science Student Book: 35 Earth Science Teacher's Guide: 35 Physical Science Student Book: 14, 15, 16, 17, 18 Physical Science Teacher's Guide: 18

Benchmark S.C.B.1.3.3

The student knows that the various forms in which energy comes to Earth from the Sun (e.g., visible light, infrared, and microwave).

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the characteristics, effects, and common uses of ultraviolet, visible and infrared light.	Physical Science Student Book: 100, 101 Physical Science Teacher's Guide: 100

Benchmark S.C.B.1.3.4

The student knows that the energy conversions are never 100% efficient (e.g., some energy is transformed to heat and is unavailable for further useful work).

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows that useful energy is lost as heat energy in every energy conversion.	Physical Science Student Book: 128-129

Standard 2

The student understands the interaction of matter and energy.

Benchmark S.C.B.2.3.2

The student knows that most of the energy used today is derived from burning stored energy collected by organisms millions of years ago (e.g., nonrenewable fossil fuels).

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows that fossil fuels are found in the Earth, they are nonrenewable, and the advantages and disadvantages of their use.	Earth Science Student Book: 30, 31, 32, 33 Earth Science Teacher's Guide: 30, 31, 32, 33

Strand C: Force and Motion

Standard 1

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

Benchmark S.C.1.3.1

The student knows that the motion of an object can be described by its position, direction of motion, and speed.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows that the motion of an object can be described by its position, direction of motion, and speed.	Physical Science Student Book: 13 Physical Science Teacher's Guide: 13

Benchmark S.C.1.3.2

The student knows that vibrations in materials set up wave disturbances that spread away from the source (e.g., sound and earthquake waves).

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows factors that influence the amount of damage vibrations can cause.	Physical Science Student Book: 105 Physical Science Teacher's Guide: 97, 105
2. knows intensity of some common waves.	Earth Science Student Book: 62, 64, 124 Earth Science Teacher's Guide: 62, 64, 124 Physical Science Student Book: 95, 97, 100, 109, 113 Physical Science Teacher's Guide: 97, 109
3. knows some causes and effects of waves.	Earth Science Student Book: 124 Earth Science Teacher's Guide: 124 Physical Science Student Book: 95, 96, 98, 99, 100, 101, 105, 109, 113 Physical Science Teacher's Guide: 97, 107

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 S.C.C.2.3.1

The student knows that many forces (e.g., gravitational, electrical, and magnetic) act at a distance (e.g., without contact).

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the properties of forces.	Earth Science Student Book: 185, 186 Physical Science Student Book: 25, 29, 79, 80 Physical Science Teacher's Guide: 15, 20B, 23, 24, 78, 80
2. knows that like poles of the magnet (two north poles or two south poles) will repel and opposite poles (north and south) will attract.	Earth Science Student Book: 76, 78, 79 Earth Science Teacher's Guide: 76, 78, 79 Physical Science Student Book: 79, 80 Physical Science Teacher's Guide: 78, 80
3. knows that a simple electromagnet uses both electrical force and a magnetic force.	Physical Science Student Book: 79, 81 Physical Science Teacher's Guide: 79, 81

Benchmark S.C.C.2.3.3

The student knows that if more than one force acts on an object, then the forces can reinforce or cancel each other, depending on their direction and magnitude.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 2. understands that as objects fall to Earth, speed increases until they reach terminal velocity.	Physical Science Student Book: 15 Physical Science Teacher's Guide: 15

Benchmark S.C.2.3.4

The student knows that simple machines can be used to change the direction or size of a force.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. understands uses and combinations of simple machines in complicated machines.	Physical Science Student Book: 34, 35 Physical Science Teacher's Guide: 34, 35

Benchmark S.C.2.3.7

The student knows that gravity is a universal force that every mass exerts on every other mass.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. understands that gravity is a force exerted on a mass that causes an object to have weight.	Earth Science Teacher's Guide: 212

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 S.C.D.1.3.1

The student knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the relationship between run-off and the development of a river system.	Earth Science Student Book: 104, 105 Earth Science Teacher's Guide: 104, 105
3. knows the ways in which the Earth's surface is eroded and reshaped (for example, weathering, erosion, deposition).	Earth Science Student Book: 20, 21, 22, 23 Earth Science Teacher's Guide: 20, 21, 22, 23

Benchmark S.C.D.1.3.2

The student knows that over the whole Earth, organisms are growing, dying, and decaying as new organisms are produced by the old ones.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. understands that fossils are used to predict and explain the similarities and differences of organisms that lived in the past and compare them with those living today.	Earth Science Student Book: 40, 41, 72, 73, 74, 75 Earth Science Teacher's Guide: 40, 41, 72, 73, 74, 75

Benchmark S.C.D.1.3.3

The student knows how conditions that exist in one system influence the conditions that exist in other systems.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. understands that changes on the surface of the Earth affect living systems.	Earth Science Student Book: 56, 57, 58, 59 Earth Science Teacher's Guide: 56, 57, 58, 59

Benchmark S.C.D.1.3.4

The student knows the ways in which plants and animals reshape the landscape (e.g., bacteria, fungi, worms, rodents, and other organisms add organic matter to the soil, increasing soil fertility, encouraging plant growth, and strengthening resistance to erosion).

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the ways in which living things reshape the landscape (for example, bacteria, fungi, worms, rodents, and other organisms add organic matter to the soil, increasing soil fertility, encouraging plant growth, and strengthening resistance to erosion).	Earth Science Student Book: 55, 60-61 Earth Science Teacher's Guide: 52, 56, 60-61

Standard 2

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

Benchmark SC.D.2.3.1

The student understands that quality of life is relevant to personal experience.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows ways to conserve and recycle resources (for example, develops and uses a personal action plan to use recyclable materials whenever possible).	Life Science Student Book: 207 Physical Science Teacher's Guide: 213

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.1.3.1

The student understands the vast size of our Solar System and the relationship of the planets and their satellites.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the relative sizes of planets.	Earth Science Student Book: 188, 189, 190, 191, 192, 193, 194, 195, 196, 197 Earth Science Teacher's Guide: 188, 189, 190, 191, 192, 193, 194, 195, 196, 197
2. understands the distances of the planets and the asteroid belt from the Sun are vast.	Earth Science Student Book: 190 Earth Science Teacher's Guide: 190

Benchmark SC.E.1.3.4

The student knows that stars appear to be made of similar chemical elements, although they differ in age, size, temperature, and distance.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the life cycle of a star.	Earth Science Student Book: 198, 199, 200, 201 Earth Science Teacher's Guide: 198, 199, 200, 201

Grade Level Expectations, Grade 7	Science Daybooks
2. knows the process used to determine the age of a star.	Earth Science Student Book: 198, 199, 200, 201 Earth Science Teacher's Guide: 198, 199, 200, 201

Strand F: Processes of Life

Standard 1

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

Benchmark SC.F.1.3.2

The student knows that the structural basis of most organisms is the cell and most organisms are single cells, while some, including humans, are multicellular.

Grade Level Expectations, Grade 7	Science Daybooks
The student:	Life Science Student Book: 10-13
1. understands the concept of multicellular organisms.	Life Science Teacher's Guide: 10B, 10-13

Benchmark SC.F.1.3.6

The student knows that the cells with similar functions have similar structures, whereas those with different structures have different functions.

Grade Level Expectations, Grade 7	Science Daybooks
The student:	Life Science Student Book: 80, 81
1. understands that there are many similarities among the great diversity of living things.	Life Science Teacher's Guide: 80, 81, 201

Benchmark SC.F.1.3.7

The student knows that behavior is a response to the environment and influences growth, development, maintenance, and reproduction.

Grade Level Expectations, Grade 7	Science Daybooks
The student:	Life Science Student Book: 200
1. determines the behavioral responses of different organisms to common stimuli (for example, temperature, light, pressure, moisture).	Life Science Teacher's Guide: 200

Standard 2

The student understands the process and importance of genetic diversity.

Benchmark SC.F.2.3.1

The student knows the patterns and advantages of sexual and asexual reproduction in plants and animals.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the differences between and advantages of sexual and asexual reproduction.	Life Science Teacher's Guide: 54

Benchmark SC.F.2.3.3

The student knows that generally organisms in a population live long enough to reproduce because they have survival characteristics.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the life cycles of a variety of organisms, including non-flowering and flowering plants, insects, amphibians, reptiles, birds, and mammals.	Life Science Student Book: 184 Life Science Teacher's Guide: 184

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.1.3.1

The student knows that viruses depend on other living things.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows the unique characteristics of a virus that cause them to be considered living at some times and nonliving at others.	Life Science Teacher's Guide: 94
2. knows ways that viruses depend on other living things.	Life Science Student Book: 166-169, 172-176 Life Science Teacher's Guide: 166-169, 172-176

Grade Level Expectations, Grade 7	Science Daybooks
3. knows that viruses may causes diseases in other living things.	Life Science Student Book: 166-169, 172-176 Life Science Teacher’s Guide: 166-169, 172-176

Benchmark SC.G.1.3.2

The student knows that biological adaptations include changes in structures, behaviors, or physiology that enhance reproductive success in a particular environment.

Grade Level Expectations, Grade 7	Science Daybooks
The student:	Life Science Student Book: 72, 73, 76, 77, 78, 128, 132, 200, 201
1. knows that biological adaptations include changes in structures, behaviors, or physiology that enhance reproductive success in a particular environment.	Life Science Teacher’s Guide: 72, 75, 76, 130, 198, 200

Benchmark SC.G.1.3.3

The student understands that the classification of living things is based on a given set of criteria and is a tool for understanding biodiversity and interrelationships.

Grade Level Expectations, Grade 7	Science Daybooks
The student:	Life Science Student Book: 90-91
1. knows how to design and use a dichotomous guide to identify organisms based on structural characteristics.	Life Science Teacher’s Guide: 90-91

Benchmark SC.G.1.3.4

The student knows that the interactions of organisms with each other and with the non-living parts of their environments result in the flow of energy and the cycling of matter throughout the system.

Grade Level Expectations, Grade 7	Science Daybooks
The student:	Life Science Student Book: 28-29
1. understands how the carbon dioxide-oxygen cycle, water cycle, and nitrogen cycle are important for the survival of organisms.	Life Science Teacher’s Guide: 28, 29 Earth Science Student Book: 94-95, 96-99, 100-103 Earth Science Teacher’s Guide: 94B, 94-95, 96-99, 100-103
2. knows the interrelationships in a local ecosystem.	Life Science Student Book: 178, 182, 184, 185, 186-187, 192, 194, 196 Life Science Teacher’s Guide: 178, 182, 185, 186, 187, 192

Benchmark S.C.G.1.3.5

The student knows that life is maintained by a continuous input of energy from the sun and by the recycling of the atoms that make up the molecules of living organisms.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. understands ways matter is recycled (for example, water cycle, carbon cycle).	Earth Science Student Book: 94-95, 96-99, 100-103 Earth Science Teacher's Guide: 94B, 94-95, 96-99, 100-103
2. knows that life on earth is dependent upon a continuous supply of energy from the sun.	Life Science Student Book: 24, 25 Life Science Teacher's Guide: 25
3. understands that individual food chains occur within a food web and that both show the flow of energy.	Life Science Student Book: 188, 196 Life Science Teacher's Guide: 188, 189, 196

Standard 2

The student understands the consequences of using limited natural resources.

Benchmark S.C.G.2.3.1

The student knows that some resources are renewable and others are nonrenewable.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. understands the importance of informed use of natural resources.	Earth Science Student Book: 34, 37, 38-39 Earth Science Teacher's Guide: 37, 38-39

Benchmark S.C.G.2.3.2

The student knows that all biotic and abiotic factors are interrelated and that if one factor is changed or removed, it impacts the availability of other resources within the system.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows biotic and abiotic components in a small, local area and ways they interact (for example, field, pond).	Life Science Student Book: 178-181, 182-185, 186-187, 188-191, 192-195, 196-197, 198-201, 202-205, 206-207, 208-211, 212, 213, 214-217 Life Science Teacher's Guide: 178B, 178-181, 182-185, 186-187, 188B, 188-191, 192-195, 196-197, 198B, 198-201, 202-205, 206-207, 108B, 208-211, 212, 213, 214-217

Grade Level Expectations, Grade 7	Science Daybooks
2. understands the consequences that might result when changes occur in populations.	Life Science Student Book: 77, 182, 184, 185, 186-187 Life Science Teacher’s Guide: 76, 182, 184-185, 186
3. understands that changes in one part of the ecosystem will affect other parts of the ecosystem.	Life Science Student Book: 186-187, 190, 192, 197 Life Science Teacher’s Guide: 178, 182, 184, 185, 186, 190, 192, 196

Benchmark S.C.G.2.3.3

The student knows that a brief change in the limited resources of an ecosystem may alter the size of a population or the average size of individual organisms and that long-term change may result in the elimination of animal and plant populations inhabiting the Earth.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows possible causes for a species to become threatened, endangered, or extinct.	Life Science Student Book: 199, 206-207, 212 Life Science Teacher’s Guide: 205, 207, 214 Earth Science Student Book: 112 Earth Science Teacher’s Guide: 112

Benchmark S.C.G.2.3.4

The student understands that humans are a part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in ecosystems.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows ways that human activities may deliberately or inadvertently alter the equilibrium in the ecosystem.	Life Science Student Book: 178, 186, 197, 199, 206-207, 208, 209, 210, 212, 213, Life Science Teacher’s Guide: 178, 185, 197, 206, 208, 209, 212 Earth Science Student Book: 112 Earth Science Teacher’s Guide: 112

Strand H: The Nature of Science

Standard 1

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

Benchmark S.C.H.1.3.1

The student knows that scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. understands that new scientific knowledge is often used to reevaluate existing theories.	Life Science Student Book: 73, 86, 88 Life Science Teacher's Guide: 86 Earth Science Student Book: 24, 167, 192, 193, 194, 195 Earth Science Teacher's Guide: 24, 167, 192, 193, 194, 195 Physical Science Student Book: 140 Physical Science Teacher's Guide: 138, 140, 141

Benchmark S.C.H.1.3.2

The student knows that the study of the events that led scientists to discoveries can provide information about the inquiry process and its effects.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. uses systematic, scientific processes to solve problems and reach conclusions.	Life Science Student Book: 26-27, 190-191 Life Science Teacher's Guide: 190-191 Earth Science Student Book: 25, 27, 40, 172 Earth Science Teacher's Guide: 25, 27, 40, 172 Physical Science Student Book: 18-19, 77, 119, 149, 150-151 Physical Science Teacher's Guide: 19, 77, 119, 149, 151

Benchmark S.C.H.1.3.3

The student knows that science disciplines differ from one another in topic, techniques, and outcomes but that they share a common purpose, philosophy, and enterprise.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows that science disciplines differ from one another in topic, techniques, and outcomes but that they share a common purpose, philosophy, and enterprise.	Life Science Student Book: 44, 45 Earth Science Student Book: 172, 173 Earth Science Teacher's Guide: 172, 173 Physical Science Student Book: 62 Physical Science Teacher's Guide: 62, 66, 69

Benchmark S.C.H.1.3.4

The student knows that accurate record keeping, openness, and replication are essential to maintaining an investigator's credibility with other scientists and society.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. extends and refines use of accurate records, openness, and replication of experiments to ensure credibility.	Physical Science Student Book: 67 Physical Science Teacher's Guide: 67

Benchmark S.C.H.1.3.5

The student knows that a change in one or more variables may alter the outcome of an investigation.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. extends and refines knowledge of how to identify the independent and dependent variables in an experiment.	Life Science Student Book: 132-133 Life Science Teacher's Guide: 27, 132-133 Earth Science Student Book: 174, 175 Earth Science Teacher's Guide: 174, 175
2. extends and refines use of appropriate experimental design, with consideration for rules, time, and materials required to solve a problem.	Earth Science Student Book: 168, 169 Earth Science Teacher's Guide: 168, 169

Benchmark S.C.H.1.3.6

The student recognizes the scientific contributions that are made by individuals of diverse backgrounds, interests, talents, and motivations.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. extends and refines knowledge of selected scientists and their accomplishments and recognizes their varied backgrounds, talents, interests, and goals.	Life Science Student Book: 24, 54, 122, 166, 167, 188, 190 Life Science Teacher's Guide: 26, 54, 72B, 94B, 122, 167 Earth Science Student Book: 46, 168, 169 Earth Science Teacher's Guide: 46, 168, 169 Physical Science Student Book: 11, 12, 22, 25, 30, 31, 33, 36-37, 62, 63, 69, 83, 88, 114, 138 Physical Science Teacher's Guide: 28, 33, 62, 69, 83, 140

Standard 2

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

Benchmark S.C.H.2.3.1

The student recognizes that patterns exist within and across systems.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows that natural events (for example, seasons, hurricanes) occur in patterns.	Earth Science Student Book: 146-149, 150-153, 156-159, 160-163, 164-165 Earth Science Teacher's Guide: 146B, 146-149, 150-153, 156A, 156-159, 160-163, 164-165

Standard 3

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

Benchmark S.C.H.3.3.1

The student knows that science ethics demand that scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. knows that science ethics demand that scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.	Physical Science Teacher's Guide: 102

Grade Level Expectations, Grade 7	Science Daybooks
<p>2. uses appropriate procedures for safety in the classroom, home, and community.</p>	<p>Life Science Teacher’s Guide: 10A, 20A, 52A, 72A, 94A, 124A, 136A, 146A, 156A, 198A, 208A</p> <p>Physical Science Teacher’s Guide: 20A, 30A, 72A, 104A, 136A, 146A, 156A, 178A, 188A, 198A</p>

Benchmark S.C.H.3.3.5

The student understands that contributions to the advancement of science, mathematics, and technology have been made by different kinds of people, in different cultures, at different times and are an intrinsic part of the development of human culture.

Grade Level Expectations, Grade 7	Science Daybooks
<p>The student:</p> <p>1. knows that scientific and technological contributions are made by individuals of different ethnic, economic, and cultural backgrounds.</p>	<p>Life Science Student Book: 54</p> <p>Earth Science Student Book: 44, 45, 48, 49</p> <p>Earth Science Teacher’s Guide: 44, 45, 48, 49</p> <p>Physical Science Student Book: 30, 33, 62, 83, 88, 114</p> <p>Physical Science Teacher’s Guide: 30B, 33, 62, 83</p>

Benchmark S.C.H.3.3.6

The student knows that no matter who does science and mathematics or invents things, or when or where they do it, the knowledge and technology that result can eventually become available to everyone.

Grade Level Expectations, Grade 7	Science Daybooks
<p>The student:</p> <p>1. knows that scientific contributions may result in diverse technological products.</p>	<p>Earth Science Student Book: 16, 80</p> <p>Earth Science Teacher’s Guide: 16</p> <p>Physical Science Student Book: 30, 43, 62, 68, 69, 83, 86, 88, 114, 201, 209, 212, 216</p> <p>Physical Science Teacher’s Guide: 30, 30B, 42, 43, 62, 82, 88, 201, 208, 212, 216</p>

Benchmark S.C.H.3.3.7

The student knows that computers speed up and extend people’s ability to collect, sort, and analyze data; prepare research reports; and share data and ideas with others.

Grade Level Expectations, Grade 7	Science Daybooks
The student: 1. extends and refines use of a computer to collect, analyze, and report scientific findings.	Life Science Student Book: 33, 39, 61, 198, 207, 211 Life Science Teacher’s Guide: 23, 33, 39, 61, 67, 81, 83, 184, 188B, 207, 211 Physical Science Student Book: 71, 77, 155 Physical Science Teacher’s Guide: 38-39, 45, 57, 71, 77, 127, 143, 155, 166B



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and Physical Science Daybook © 2003
 correlated to
Grade Level Expectations for the
Sunshine State Standards
Grade 8

Strand A: The Nature of Matter

Standard 1

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

Benchmark S.C.A.1.3.1

The student identifies various ways in which substances differ (e.g., mass, volume, shape, density, texture, and reaction to temperature and light).

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. determines the physical properties of matter that can be observed without altering the substance (for example, mass, volume, boiling point, density).	Earth Science Student Book: 94 Earth Science Teacher's Guide: 94 Physical Science Student Book: 134, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155 Physical Science Teacher's Guide: 134, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155

Benchmark S.C.A.1.3.2

The student understands the difference between weight and mass.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands that weight will vary with the location of the mass in the universe, but the mass will remain constant.	Physical Science Student Book: 14, 16, 24, 25, 26 Physical Science Teacher's Guide: 14, 16, 24, 25, 26

Benchmark S.C.A.1.3.3

The student knows the temperature measures the average energy of motion of the particles that make up the substance.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that the average kinetic energy of the atoms or molecules of different objects varies with their temperature.	Physical Science Student Book: 14, 15, 16, 17, 186 Physical Science Teacher's Guide: 14, 15, 16, 17, 186

Benchmark S.C.A.1.3.4

The student knows that atoms in solids are close together and do not move around easily; in liquids, atoms tend to move farther apart; in gas, atoms are quite far apart and move around freely.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands that changes in energy cause phase changes.	Earth Science Student Book: 118, 120 Physical Science Student Book: 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 Physical Science Teacher's Guide: 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27

Benchmark S.C.A.1.3.5

The student knows the difference between a physical change in a substance (e.g., altering the shape, form, volume, or density) and a chemical change (i.e., producing new substances with different characteristics).

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows how to use clues (for example, change in color or form) to determine whether a change is chemical or physical.	Physical Science Student Book: 179 Physical Science Teacher's Guide: 179

Benchmark S.C.A.1.3.6

The student knows that equal volumes of different substances may have different masses.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. determines the relationship between mass and volume of an assortment of common substances.	Physical Science Student Book: 14, 24, 25, 26, 129 Physical Science Teacher's Guide: 14, 24, 25, 26, 129

Standard 2

The student understands the basic principles of atomic theory.

Benchmark S.C.A.2.3.1

The student describes and compares the properties of particles and waves.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that matter is mostly neutral, but that particles can attain a charge by the gain or loss of electrons.	Life Science Student Book: 42 Life Science Teacher's Guide: 42 Physical Science Student Book: 52, 53, 54, 55 Physical Science Teacher's Guide: 52, 53, 54, 55
2. understands the relationship between the energy of a wave and its frequency (the greater the frequency of the wave, the greater the energy of the wave).	Physical Science Student Book: 100 Physical Science Teacher's Guide: 100
3. understands the relationship of energy and wavelength to the electromagnetic spectrum.	Physical Science Student Book: 109 Physical Science Teacher's Guide: 109

Benchmark S.C.A.2.3.2

The student knows the general properties of the atom (a massive nucleus of neutral neutrons and positive protons surrounded by a cloud of negative electrons) and accepts that single atoms are not visible.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that there is an energy difference between an electron near the nucleus and one further away.	Physical Science Student Book: 140 Physical Science Teacher's Guide: 140
2. knows that when electrons are transferred from one substance to another, the general properties of both substances change.	Physical Science Student Book: 145 Physical Science Teacher's Guide: 145

Benchmark S.C.A.2.3.3

The student knows that radiation, light, and heat are forms of energy used to cook food, treat diseases, and provide energy.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. extends and refines knowledge of uses of forms of energy to improve the quality of life.	Earth Science Student Book: 34, 35, 37 Earth Science Teacher's Guide: 34, 35 Physical Science Student Book: 59, 62, 63, 64, 65, 82, 83, 84, 85, 86, 87, 89, 102, 103, 128, 129, 183, 184, 185, 186, 200, 202, 204, 205, 206, 207 Physical Science Teacher's Guide: 59, 62, 63, 64, 65, 82, 83, 84, 85, 86, 87, 89, 102, 103, 128, 129, 183, 184, 185, 186, 200, 202, 204, 205, 206, 207

Strand B: Energy

Standard 1

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

Benchmark S.C.B.1.3.1

The student identifies forms of energy and explains that they can be measured and compared.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands that energy can be transferred by radiation, conduction, and convection.	Earth Science Student Book: 34, 35, 37 Earth Science Teacher's Guide: 34, 35, 37 Physical Science Student Book: 14, 15, 16, 17, 18, 19, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 82, 83, 84, 85, 86, 87, 94, 97, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 152, 153, 154, 155, 182, 183, 184, 185, 186, 187, 200, 201, 202, 203, 204, 205, 206, 207 Physical Science Teacher's Guide: 14, 15, 16, 17, 18, 19, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 82, 83, 84, 85, 86, 87, 94, 97, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 152, 153, 154, 155, 182, 183, 184, 185, 186, 187, 200, 201, 202, 203, 204, 205, 206, 207

Grade Level Expectations, Grade 8	Science Daybooks
<p>2. knows examples of natural and man-made systems in which energy is transferred from one form to another.</p>	<p>Life Science Student Book: 20, 22, 24-25, 28-29</p> <p>Life Science Teacher’s Guide: 23, 28, 29</p> <p>Earth Science Student Book: 34, 35, 130, 131</p> <p>Earth Science Teacher’s Guide: 30, 35, 130</p> <p>Physical Science Student Book: 14, 15, 16, 17, 18, 19, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 82, 83, 84, 85, 86, 87, 94, 97, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 152, 153, 154, 155, 182, 183, 184, 185, 186, 187, 200, 201, 202, 203, 204, 205, 206, 207</p> <p>Physical Science Teacher’s Guide: 14, 15, 16, 17, 18, 19, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 82, 83, 84, 85, 86, 87, 94, 97, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 152, 153, 154, 155, 182, 183, 184, 185, 186, 187, 200, 201, 202, 203, 204, 205, 206, 207</p>

Benchmark S.C.B.1.3.3

The student knows that the various forms in which energy comes to Earth from the Sun (e.g., visible light, infrared, and microwave).

Grade Level Expectations, Grade 8	Science Daybooks
<p>The student:</p> <p>1. knows ways to measure the various forms of energy that come from the Sun.</p>	<p>Physical Science Student Book: 98, 99, 100, 125</p> <p>Physical Science Teacher’s Guide: 98, 99, 100, 125</p>

Benchmark S.C.B.1.3.4

The student knows that the energy conversions are never 100% efficient (e.g., some energy is transformed to heat and is unavailable for further useful work).

Grade Level Expectations, Grade 8	Science Daybooks
<p>The student:</p> <p>1. knows that energy conversions are never 100% efficient and that some energy is transformed to heat and is unavailable for further useful work (for example, a food pyramid reflects the energy that is used and lost in each part of a food chain).</p>	<p>Physical Science Student Book: 14, 15, 16, 17, 198, 199</p> <p>Physical Science Teacher’s Guide: 14, 15, 16, 17, 198, 199</p>

Grade Level Expectations, Grade 8	Science Daybooks
2. knows that a transfer of thermal energy occurs in chemical reactions.	Life Science Student Book: 22 Physical Science Student Book: 128, 129, 132 Physical Science Teacher’s Guide: 128, 129, 132

Benchmark SC.B.1.3.5

The student knows the processes by which thermal energy tends to flow from a system of higher temperature to a system of lower temperature.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows the processes by which thermal energy tends to flow from a system of higher temperature to a system of lower temperature.	Earth Science Student Book: 34 Earth Science Teacher’s Guide: 34 Physical Science Student Book: 128, 129 Physical Science Teacher’s Guide: 128, 129
2. knows that the average kinetic energy of the atoms or molecules that make up an object changes when the temperature of the object changes.	Physical Science Student Book: 14, 15, 16, 17, 186 Physical Science Teacher’s Guide: 14, 15, 16, 17, 186
3. understands that energy changes cause weather to change (for example, formation of high and low pressure systems in the atmosphere results from changes in temperature).	Earth Science Student Book: 142 Earth Science Teacher’s Guide: 144 Physical Science Student Book: 152, 153 Physical Science Teacher’s Guide: 152, 153

Benchmark SC.B.1.3.6

The student knows the properties of waves (e.g., frequency, wavelength, and amplitude); that each wave consists of a number of crests and troughs; and the effects of different media on waves.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that sound travels in a medium (cannot travel in a vacuum), and travels at different speeds through various media.	Physical Science Student Book: 86, 87, 104, 105, 106, 107, 108, 109, 110, 111 Physical Science Teacher’s Guide: 86, 87, 104, 105, 106, 107, 108, 109, 110, 111

Grade Level Expectations, Grade 8	Science Daybooks
2. knows the parts of a wave (crest, trough, wavelength, amplitude).	Earth Science Student Book: 13 Physical Science Student Book: 224 Physical Science Teacher’s Guide: 224
3. understands that wavelength determines the colors of visible light.	Physical Science Student Book: 109, 224 Physical Science Teacher’s Guide: 109, 224
4. understands that wavelength determines the pitch of sound.	Physical Science Student Book: 108, 109 Physical Science Teacher’s Guide: 108, 109
5. knows that waves vary greatly in character (for example, sound, ultraviolet, infrared, ocean waves).	Physical Science Student Book: 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 108, 109, 112, 113 Physical Science Teacher’s Guide: 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 108, 109, 112, 113

Standard 2

The student understands the interaction of matter and energy.

Benchmark SC.B.2.3.1

The student knows that most events in the universe (e.g., weather changes, moving cars, and the transfer of a nervous impulse in the human body) involve some form of energy transfer and that these changes almost always increase the total disorder of the system and its surroundings, reducing the amount of useful energy.

Grade Level Expectations, Grade 8	Science Daybooks
The student:	Physical Science Student Book: 14, 15, 16, 17, 198, 199 Physical Science Teacher’s Guide: 14, 15, 16, 17, 198, 199
1. understands that as energy is transferred from one system to another there is a reduction in the amount of useful energy.	
2. knows that energy transfer is not efficient.	Physical Science Student Book: 14, 15, 16, 17 Physical Science Teacher’s Guide: 14, 15, 16, 17

Benchmark SC.B.2.3.2

The student knows that most of the energy used today is derived from burning stored energy collected by organisms millions of years ago (e.g., nonrenewable fossil fuels).

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands how fossil fuels are formed in the Earth, why they are nonrenewable, and the advantages and disadvantages of their use.	Earth Science Student Book: 30, 38, 39, 130 Earth Science Teacher's Guide: 38, 39, 130

Strand C: Force and Motion

Standard 1

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

Benchmark SC.C.1.3.1

The student knows that the motion of an object can be described by its position, direction of motion, and speed.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that speed, velocity, and acceleration can be calculated, estimated, and defined.	Physical Science Student Book: 24, 25, 26, 27, 28, 29 Physical Science Teacher's Guide: 24, 25, 26, 27, 28, 29
2. knows that the magnitude of linear acceleration can be calculated.	Physical Science Student Book: 25 Physical Science Teacher's Guide: 25

Benchmark SC.C.1.3.2

The student knows that knows that vibrations in materials set up wave disturbances that spread away from the source (e.g., sound and earthquake waves).

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows ways to measure the frequency of waves.	Physical Science Student Book: 100, 112 Physical Science Teacher's Guide: 100, 112

Grade Level Expectations, Grade 8	Science Daybooks
2. knows some technological devices that use wave energy (for example, sonar, ultrasound, laser).	Physical Science Student Book: 43, 98, 99, 100, 101, 102, 103 Physical Science Teacher's Guide: 43, 98, 99, 100, 101, 102, 103

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 S.C.2.3.1

The student knows that many forces (e.g., gravitational, electrical, and magnetic) act at a distance (e.g., without contact).

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that many forces act at a distance.	Earth Science Teacher's Guide: 210 Physical Science Student Book: 26, 27 Physical Science Teacher's Guide: 26, 27

Benchmark S.C.2.3.2

The student knows common contact forces.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows some common contact forces (for example, friction, buoyancy, tension).	Physical Science Student Book: 15, 53 Physical Science Teacher's Guide: 15, 53

Benchmark S.C.2.3.3

The student knows that if more than one force acts on an object, then the forces can reinforce or cancel each other, depending on their direction and magnitude.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. recognizes the forces that act on a given object.	Earth Science Student Book: 185, 212 Earth Science Teacher's Guide: 209, 210, 212 Physical Science Student Book: 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 29 Physical Science Teacher's Guide: 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 29

Grade Level Expectations, Grade 8	Science Daybooks
2. knows that the overall effect of a force can be predicted.	Physical Science Student Book: 10, 11, 12, 13, 14, 15, 16, 17 Physical Science Teacher's Guide: 10, 11, 12, 13, 14, 15, 16, 17
3. knows that forces may be balanced or unbalanced.	Physical Science Student Book: 14, 15, 16, 17 Physical Science Teacher's Guide: 14, 15, 16, 17
4. understands that unbalanced forces cause objects to accelerate.	Physical Science Student Book: 24, 25, 26, 27 Physical Science Teacher's Guide: 24, 25, 26, 27

Benchmark S.C.C.2.3.4

The student knows that simple machines can be used to change the direction or size of a force.

Grade Level Expectations, Grade 8	Science Daybooks
The student:	Physical Science Student Book: 14, 15, 16, 17, 18, 19
1. knows that simple machines can be used to change the direction or size of a force.	Physical Science Teacher's Guide: 14, 15, 16, 17, 18, 19

Benchmark S.C.C.2.3.5

The student understands that an object in motion will continue at a constant speed and in a straight line until acted upon by a force and that an object at rest will remain at rest until acted upon by a force.

Grade Level Expectations, Grade 8	Science Daybooks
The student:	Physical Science Student Book: 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23
1. understands that an object in motion will continue at a constant speed and in a straight line until acted upon by a force and that an object at rest will remain at rest until acted upon by a force.	Physical Science Teacher's Guide: 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23

Benchmark SC.C.2.3.6

The student explains and shows the ways in which a net force (that is, the sum of all acting forces) can act on an object (e.g., speeding up an object traveling in the same direction as the net force, slowing down an object traveling in the direction opposite of the net force).

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows ways in which a net force (that is, the sum of all acting forces) can act on an object (for example, speeding up an object traveling in the same direction as the net force, slowing down an object traveling in the direction opposite of the net force).	Physical Science Student Book: 14, 15, 16, 17 Physical Science Teacher's Guide: 14, 15, 16, 17

Benchmark SC.C.2.3.7

The student knows that gravity is a universal force that every mass exerts on every other mass.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that gravity is a universal force that every mass exerts on every other mass.	Earth Science Teacher's Guide: 212 Physical Science Student Book: 11, 14, 15, 16, 20, 21, 22 Physical Science Teacher's Guide: 11, 14, 15, 16, 20, 21, 22

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.1.3.1

The student knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. uses observations and tests to identify mineral samples.	Earth Science Teacher's Guide: 24
2. understands how sedimentary, igneous, and metamorphic rocks are formed and categorized.	Earth Science Student Book: 21-22 Earth Science Teacher's Guide: 21-22

Benchmark S.C.D.1.3.2

The student knows over the whole Earth, organisms are growing, dying, and decaying as new organisms are produced by the old ones.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that over the whole Earth, organisms are growing, dying, and decaying and new organisms are being produced.	Earth Science Student Book: 40, 42, 52 Earth Science Teacher's Guide: 40, 44

Benchmark S.C.D.1.3.3

The student knows how conditions that exist in one system influence the conditions that exist in other systems.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows ways conditions that exist in one system influence the conditions that exist in other systems (for example, the relationship between mountain building, island formation, and trench formation; interactions between the atmosphere and hydrosphere affect weather patterns).	Earth Science Student Book: 56, 70-71, 78-79, 86, 110, 111, 142 Earth Science Teacher's Guide: 56, 70, 78, 86, 110, 144

Benchmark S.C.D.1.3.4

The student knows the ways in which plants and animals reshape the landscape (e.g., bacteria, fungi, worms, rodents, and other organisms add organic matter to the soil, increasing soil fertility, encouraging plant growth, and strengthening resistance to erosion).

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. extends and refines knowledge of ways in which living things reshape the landscape.	Life Science Student Book: 203 Earth Science Student Book: 52, 53, 55, 60, 107, 108 Earth Science Teacher's Guide: 52

Benchmark S.C.D.1.3.5

The student understands concepts of time and size relating to the interaction of Earth's processes (e.g., lightning striking in a split second as opposed to the shifting of the Earth's plates altering the landscape, distance between atoms measured in Angstrom units as opposed to distance between stars measured in light-years).

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands concepts of time and size relating to the interaction of Earth's processes (for example, the distance between atoms measured in Angstrom units as opposed to distance between stars measured in light-years).	Earth Science Student Book: 72, 75 Earth Science Teacher's Guide: 72, 75

Standard 2

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

Benchmark S.C.D.2.3.1

The student understands that quality of life is relevant to personal experience.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands that quality of life is relevant to personal experience.	Life Science Student Book: 208, 209, 210 Life Science Teacher's Guide: 208

Benchmark S.C.D.2.3.2

The student knows the positive and negative consequences of human action on the Earth's systems.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that legislation can be adopted to protect the Earth from detrimental human activities.	Earth Science Student Book: 60, 111

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 S.C.E.1.3.2

The student knows that available data from various satellite probes show the similarities and differences among planets and their moons in the Solar System.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that available data from various satellite probes show similarities and differences among planets and their moons in our Solar System.	Earth Science Student Book: 190, 192, 195, 197 Earth Science Teacher's Guide: 190, 192, 195

Benchmark S.C.E.1.3.3

The student understands that our Sun is one of many stars in our galaxy.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows the size, temperature, age, and brightness of the Sun compared to some other stars in the Milky Way Galaxy (for example, white dwarfs, red giants).	Earth Science Student Book: 198, 200-201 Earth Science Teacher's Guide: 201

Benchmark S.C.E.1.3.4

The student knows that stars appear to be made of similar chemical elements, although they differ in age, size, temperature, and distance.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that stars appear to be made of similar chemical elements, although they differ in age, size, temperature, and distance.	Earth Science Student Book: 198-199, 200-201 Earth Science Teacher's Guide: 198, 199, 201

Standard 2

The student recognizes the vastness of the universe and the Earth's place in it.

Benchmark SC.E.2.3.1

The student knows that thousands of other galaxies appear to have the same elements, forces, and forms of energy found in our Solar System.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that thousands of other galaxies appear to have the same elements, forces, and forms of energy found in our Solar System.	Earth Science Student Book: 203 Earth Science Teacher's Guide: 202, 203

Strand F: Processes of Life

Standard 1

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

Benchmark SC.F.1.3.1

The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation.	Life Science Student Book: 48, 49, 146, 147, 150, 154 Life Science Teacher's Guide: 48, 146B, 146, 154

Benchmark SC.F.1.3.2

The student knows that the structural basis of most organisms is the cell and most organisms are single cells, while some, including humans, are multicellular.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows the structures of cells, and their function and ways these mirror the structure and function of multicellular organisms.	Life Science Student Book: 14, 15, 16, 17, 18 Life Science Teacher's Guide: 14, 18
2. understands that cells of unicellular organisms are similar to those of multicellular organisms.	Life Science Student Book: 10

Benchmark SC.F.1.3.3

The student knows that in multicellular organisms cells grow and divide to make more cells in order to form and repair various organs and tissues.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows the processes of division, growth, and maturation that occur during the cell cycle.	Life Science Student Book: 31, 32, 35, 37, 38, 39 Life Science Teacher's Guide: 30B, 31, 32, 35

Benchmark SC.F.1.3.4

The student knows that the levels of structural organization for function in living things include cells, tissues, organs, systems, and organisms.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows some of the functions of some types of cells, tissues, organs, and systems in advanced organisms.	Life Science Student Book: 20, 22, 24, 41, 48, 49, 146, 147, 150, 151, 154, 156 Life Science Teacher's Guide: 20, 48, 146B, 146, 154, 156

Benchmark SC.F.1.3.5

The student explains how the life functions of organisms are related to what occurs within the cell.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands that the diversity of cell structure permits a diversity of functions for the organism.	Life Science Student Book: 14-17, 18-19 Life Science Teacher's Guide: 10B, 14-17, 18-19
2. knows that the cell is a system of organelles that mirrors the systems within multicellular organisms.	Life Science Student Book: 14-17 Life Science Teacher's Guide: 14-17

Benchmark SC.F.1.3.6

The student knows that the cells with similar functions have similar structures, whereas those with different structures have different functions.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that the cells with similar functions have similar structures, whereas those with different structures have different functions.	Life Science Student Book: 18-19 Life Science Teacher's Guide: 10B, 18-19

Grade Level Expectations, Grade 8	Science Daybooks
2. uses tools to identify and compare cell structures (for example, microscope, hand lenses, bioscopes).	Life Science Teacher’s Guide: 10

Benchmark SC.F.1.3.7

The student knows that behavior is a response to the environment and influences growth, development, maintenance, and reproduction.

Grade Level Expectations, Grade 8	Science Daybooks
The student:	Life Science Student Book: 38-39
1. knows ways behaviors that are responses to the environment may alter the normal growth, development, maintenance, and reproduction of an organism.	Life Science Teacher’s Guide: 38-39

Standard 2

The student understands the process and importance of genetic diversity.

Benchmark SC.F.2.3.1

The student knows the patterns and advantages of sexual and asexual reproduction in plants and animals.

Grade Level Expectations, Grade 8	Science Daybooks
The student:	Life Science Student Book: 58
1. knows the difference between spores and seeds in plant reproduction.	Life Science Teacher’s Guide: 54, 58, 59, 125, 126, 202
2. knows that the flower is the reproductive body of a vascular plant and that it is adapted for pollination.	Life Science Student Book: 132 Life Science Teacher’s Guide: 132
3. knows the difference between meiosis and mitosis and when each occurs.	Life Science Teacher’s Guide: 30B, 31, 32

Benchmark SC.F.2.3.2

The student knows that the variation in each species is due to the exchange and interaction of genetic information as it is passed from parent to offspring.

Grade Level Expectations, Grade 8	Science Daybooks
The student:	Life Science Student Book: 56, 57, 60, 62, 63, 64, 66
1. knows how dominant and recessive traits are inherited.	Life Science Teacher’s Guide: 56, 57, 59, 60, 62, 63, 64, 66, 67

Grade Level Expectations, Grade 8	Science Daybooks
2. uses a Punnett square to predict the results of crosses between pure and hybrid organisms.	Life Science Student Book: 56, 63, 66 Life Science Teacher's Guide: 56, 63, 66
3. knows that variations within a species are the result of genetic information being passed from a parent to offspring and that interactions between the genes may occur in the process (for example, blending, crossing-over).	Life Science Student Book: 59, 60, 61, 62, 63, 64, 70, 76 Life Science Teacher's Guide: 58, 59, 60, 62, 63, 64, 70, 76

Benchmark SC.F.2.3.3

The student knows that generally organisms in a population live long enough to reproduce because they have survival characteristics.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows ways organisms are adapted to their environment.	Life Science Student Book: 72, 73, 74-75, 76, 80, 81, 128, 132, 200, 201 Life Science Teacher's Guide: 72, 75, 76, 80, 81, 110, 129, 130, 131, 132, 200, 201 Physical Science Student Book: 199
2. understands that species have characteristics that enable their populations to cycle within varying periods of time (minutes to hundreds of years).	Life Science Student Book: 179, 181

Benchmark SC.F.2.3.4

The student knows that the fossil record provides evidence that changes in the kinds of plants and animals in the environment have been occurring over time.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that the fossil record provides evidence that changes in the kinds of plants and animals in the environment have been occurring over time.	Life Science Student Book: 80 Life Science Teacher's Guide: 80 Earth Science Teacher's Guide: 44, 46, 47

Strand G: How Living Things Interact with Their Environment

Standard 2

The student understands the consequences of using limited natural resources

Benchmark SC.G.2.3.1

The student knows that some resources are renewable and others are nonrenewable.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. knows that some resources are renewable and others are nonrenewable.	Life Science Student Book: 208, 209 Life Science Teacher's Guide: 209 Earth Science Student Book: 30, 34, 37 Earth Science Teacher's Guide: 37

Benchmark SC.G.2.3.3

The student knows that a brief change in the limited resources of an ecosystem may alter the size of a population or the average size of individual organisms and that long-term change may result in the elimination of animal and plant populations inhabiting the Earth.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands that changes in the environment cause changes in populations.	Life Science Student Book: 76, 186-187, 197, 199, 208, 209 Life Science Teacher's Guide: 76, 187, 197, 207, 208, 212 Earth Science Student Book: 24, 56 Earth Science Teacher's Guide: 56

Benchmark SC.G.2.3.4

The student understands that humans are a part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in ecosystems.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. extends and refines knowledge of ways that human activities may deliberately or inadvertently alter the equilibrium in the ecosystem.	Life Science Student Book: 178, 186, 197, 199, 206-207, 208, 209, 210, 212, 213 Life Science Teacher's Guide: 178, 185, 197, 206, 208, 209, 212 Earth Science Student Book: 52, 55, 110-111 Earth Science Teacher's Guide: 52, 110-111

Strand H: The Nature of Science

Standard 1

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

Benchmark S.C.H.1.3.1

The student knows that scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way.

Grade Level Expectations, Grade 8	Science Daybooks
<p>The student:</p> <ol style="list-style-type: none"> know that scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way. 	<p>Life Science Student Book: 73, 86, 88</p> <p>Life Science Teacher’s Guide: 73, 86</p> <p>Earth Science Student Book: 24, 72, 74, 78, 79, 80, 192, 193</p> <p>Earth Science Teacher’s Guide: 24, 72B, 72, 74, 78, 79, 81, 192</p>

Benchmark S.C.H.1.3.2

The student knows that the study of the events that led scientists to discoveries can provide information about the inquiry process and its effects.

Grade Level Expectations, Grade 8	Science Daybooks
<p>The student:</p> <ol style="list-style-type: none"> extends and refines use of systematic, scientific processes to develop and test hypotheses. 	<p>Life Science Student Book: 26-27, 190-191</p> <p>Life Science Teacher’s Guide: 190-191</p> <p>Earth Science Student Book: 175</p> <p>Earth Science Teacher’s Guide: 171, 175</p> <p>Physical Science Student Book: 18-19, 76, 119, 150, 151, 181</p> <p>Physical Science Teacher’s Guide: 18-19, 76, 119, 124, 150, 151, 181</p>
<ol style="list-style-type: none"> knows that the study of the events that led scientists to discoveries can provide information about the inquiry process and its effects. 	<p>Earth Science Student Book: 171, 173</p> <p>Earth Science Teacher’s Guide: 172</p>

Benchmark S.C.H.1.3.3

The student knows that science disciplines differ from one another in topic, techniques, and outcomes but that they share a common purpose, philosophy, and enterprise.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. extends and refines knowledge that science disciplines differ from one another in topic, techniques, and outcomes but that they share a common purpose, philosophy, and enterprise.	Life Science Student Book: 44, 45 Earth Science Student Book: 74, 78, 79, 80, 173 Earth Science Teacher's Guide: 72B, 78, 79, 80, 111, 172

Benchmark S.C.H.1.3.4

The student knows that accurate record keeping, openness, and replication are essential to maintaining an investigator's credibility with other scientists and society.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. extends and refines use of accurate records, openness, and replication of experiments to ensure credibility.	Physical Science Student Book: 151 Physical Science Teacher's Guide: 105

Benchmark S.C.H.1.3.5

The student knows that a change in one or more variables may alter the outcome of an investigation.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. extends and refines knowledge of how to identify the independent and dependent variables in an experiment.	Life Science Student Book: 132-133 Life Science Teacher's Guide: 27, 132-133 Physical Science Student Book: 133 Physical Science Teacher's Guide: 133

Benchmark S.C.H.1.3.6

The student recognizes the scientific contributions that are made by individuals of diverse backgrounds, interests, talents, and motivations.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. extends and refines knowledge of selected scientists and their accomplishments and recognizes their varied backgrounds, talents, interests, and goals.	Life Science Student Book: 24, 54, 122, 166, 167, 188, 190 Life Science Teacher's Guide: 26, 54, 72B, 94B, 122, 167 Earth Science Student Book: 25, 40, 41, 72, 76, 78, 136, 200 Earth Science Teacher's Guide: 25, 72 Physical Science Student Book: 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 36, 37, 62, 63, 66, 67, 68, 69, 82, 83, 86, 88, 114, 115, 138, 139, 140, 141 Physical Science Teacher's Guide: 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 36, 37, 62, 63, 66, 67, 68, 69, 82, 83, 86, 88, 114, 115, 138, 139, 140, 141

Benchmark S.C.H.1.3.7

The student knows that when similar investigations give different results, the scientific challenge is to verify whether the differences are significant by further study.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 2. knows that statistical tests are used to confirm the significance of data.	Physical Science Student Book: 110

Standard 2

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

Benchmark S.C.H.2.3.1

The student recognizes that patterns exist within and across systems.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands the importance of looking for patterns in natural events.	Earth Science Student Book: 123, 126-127, 166, 167, 168, 173 Earth Science Teacher's Guide: 123, 126, 166, 173 Physical Science Student Book: 40, 41 Physical Science Teacher's Guide: 40, 41

Standard 3

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

Benchmark S.C.H.3.3.1

The student knows that science ethics demand that scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 2. uses appropriate procedures for safety in the classroom, home, and community.	Life Science Teacher's Guide: 10A, 20A, 52A, 72A, 94A, 124A, 136A, 146A, 156A, 198A, 208A Earth Science Teacher's Guide: 20A, 30A, 40A, 52A, 62A, 82A, 94A, 114A, 156A, 166A

Benchmark S.C.H.3.3.5

The student understands that contributions to the advancement of science, mathematics, and technology have been made by different kinds of people, in different cultures, at different times and are an intrinsic part of the development of human culture.

Grade Level Expectations, Grade 8	Science Daybooks
The student: 1. understands that contributions to the advancement of science, mathematics, and technology have been made by different kinds of people, in different cultures, at different times and are an intrinsic part of the development of human culture.	Life Science Student Book: 54 Earth Science Student Book: 25, 40, 41, 45, 72, 76 Earth Science Teacher's Guide: 25, 26, 72 Physical Science Student Book: 12, 30, 62, 114, 139 Physical Science Teacher's Guide: 30B, 62, 62B, 114A, 136B

Benchmark S.C.H.3.3.6

The student knows that no matter who does science and mathematics or invents things, or when or where they do it, the knowledge and technology that result can eventually become available to everyone.

Grade Level Expectations, Grade 8	Science Daybooks
<p>The student:</p> <p>1. knows that no matter who does science and mathematics or invents things, or when or where they do it, the knowledge and technology that result can eventually become available to everyone.</p>	<p>Earth Science Student Book: 13, 97, 208</p> <p>Earth Science Teacher’s Guide: 12, 96, 208</p> <p>Physical Science Student Book: 30, 62, 114, 138</p> <p>Physical Science Teacher’s Guide: 30B, 30, 62B, 136B, 138</p>
<p>2. knows ways the scientific enterprise is global and available to all.</p>	<p>Earth Science Student Book: 97</p>

Benchmark S.C.H.3.3.7

The student knows that computers speed up and extend people’s ability to collect, sort, and analyze data; prepare research reports; and share data and ideas with others.

Grade Level Expectations, Grade 8	Science Daybooks
<p>The student:</p> <p>1. uses a variety of technologies to collect, analyze, and report scientific findings.</p>	<p>Life Science Student Book: 33, 39, 61, 191, 198, 205, 207, 211</p> <p>Life Science Teacher’s Guide: 23, 33, 39, 61, 67, 81, 83, 184, 188B, 191, 207, 211</p> <p>Earth Science Student Book: 23, 59, 133, 145, 159, 169, 205, 213</p> <p>Earth Science Teacher’s Guide: 23, 48, 59, 83, 87, 97, 103, 105, 133, 145, 147, 159, 169, 188B, 199, 203, 205, 213</p>



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