

Sixth Grade Science Content Standards and Objectives

Standard 1:	Nature of Science	
SC.S.6.1	Students will <ul style="list-style-type: none"> • demonstrate an understanding of the history of science and the evolvement of scientific knowledge. • demonstrate an understanding of science as a human endeavor encompassing the contributions of diverse cultures and scientists. • demonstrate an understanding of the characteristics of a scientist. • Demonstrate skills of scientific inquiry. 	
Objectives	Students will	PLT Activity and Page
SC.O.6.1.01	realize that scientists formulate and test their explanations of nature using observation and experiments.	#1 The Shape of Things p. 17 #2 Get in Touch with Trees p. 20 #3 Peppermint Beetle p. 23 #4 Sounds Around p. 26 #20 Environmental Exchange Box p. 92 #21 Adopt a Tree p. 97 #48 Field, Forest, and Stream p.203 #61 The Closer You Look p.263 #70 Soil Stories p.297 #76 Tree Cookies p.327 #77 Trees in Trouble p.332
SC.O.6.1.02	recognize scientific knowledge is subject to modification as new scientific information challenges current explanations.	
SC.O.6.1.03	examine the careers and contributions of men and women of diverse cultures to the development of science.	
SC.O.6.1.04	compare and contrast the historical significance of scientific discoveries.	#82 Resource-Go-Round p.355 #85 In the Driver's Seat p.370 #92 A Look at Lifestyles p.401

<p>SC.O.6.1.05</p>	<p>cooperate and collaborate to ask questions, design and conduct investigations to find answers and solve problems.</p>	<p>#3 Peppermint Beetle p. 23 #4 Sounds Around p. 26 #14 Renewable or Not? p. 69 #21 Adopt a Tree p. 97 #22 Trees as Habitats p.102 #37 Reduce, Reuse, Recycle p.159 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #70 Soil Stories p.297 #76 Tree Cookies p.327 #77 Trees in Trouble p.332 #78 Signs of Fall p.337 #80 Nothing Succeeds Like Succession p.345 #83 A Peek at Packaging p.360 #85 In the Driver's Seat p.370 #88 Life on the Edge p.382</p>
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<p>SC.O.6.1.06</p>	<p>formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.</p>	<p>#1 The Shape of Things p. 17 #2 Get in Touch with Trees p. 20 #3 Peppermint Beetle p. 23 #6 Picture This! p. 34 #14 Renewable or Not? p. 69 #21 Adopt A Tree p. 97 #23 The Fallen Log p.105 #37 Reduce, Reuse, Recycle p.159 #43 Have Seeds, Will Travel p.185 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #61 The Closer You Look p.263 #65 Bursting Buds p.277 #68 Name That Tree p.288 #70 Soil Stories p.297 #76 Tree Cookies p.327 #77 Trees in Trouble p.332 #78 Signs of Fall p.337 #83 A Peek at Packaging p.360 #85 In the Driver's Seat p.370 #88 Life on the Edge p.382 #89 Trees for Many Reasons p.387 #92 A Look at Lifestyles p.401</p>
<p>SC.O.6.1.07</p>	<p>apply skepticism, careful methods, logical reasoning and creativity in investigating the observable universe.</p>	<p>#12 Invasive Species p. 59 #20 Environmental Exchange Box p. 92 #43 Have Seeds, Will Travel p.185 #48 Field, Forest, and Stream p.203 #61 The Closer You Look p.263 #67 How Big is Your Tree? p.284 #70 Soil Stories p.297</p>

SC.O.6.1.08	use a variety of technologies and scientific instruments to conduct explorations, investigations and experiments of the natural world.	#43 Have Seeds, Will Travel p.185 #64 Looking at Leaves p.273 #76 Tree Cookies p.327 #80 Nothing Succeeds Like Succession p.345 #81 Living with Fire p.350
SC.O.6.1.09	demonstrate safe techniques for handling, manipulating and caring for science materials, equipment, natural specimens and living organisms.	#2 Get in Touch with Trees p. 20 #20 Environmental Exchange Box p. 92
SC.O.6.1.10	utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses, quantifying, or identifying dependent and independent variables).	#2 Get in Touch with Trees p. 20 #3 Peppermint Beetle p. 23 #70 Soil Stories p.297 #76 Tree Cookies p.327 #78 Signs of Fall p.337 #80 Nothing Succeeds Like Succession p.345 #81 Living with Fire p.350 #83 A Peek at Packaging p.360
SC.O.6.1.11	construct and use charts, graphs and tables to organize, display, interpret, analyze and explain data.	#4 Sounds Around p. 26 #22 Trees as Habitats p.102 #23 The Fallen Log p.105 #37 Reduce, Reuse, Recycle p.159 #70 Soil Stories p.297 #77 Trees in Trouble p.332 #88 Life on the Edge p.382 #92 A Look at Lifestyles p.401

SC.O.6.1.12	use inferential reasoning to make logical conclusions from collected data.	#70 Soil Stories p.297 #76 Tree Cookies p.327 #77 Trees in Trouble p.332 #78 Signs of Fall p.337 #81 Living with Fire p.350 #85 In the Driver's Seat p.370 #88 Life on the Edge p.382
Standard 2:	Content of Science	
SC.S.6.2	Students will <ul style="list-style-type: none"> demonstrate knowledge, understanding and applications of scientific facts, concepts, principles, theories and models as delineated in the objectives. demonstrate an understanding of the interrelationships among physics, chemistry, biology and the earth and space sciences. apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences. 	
Objectives	Students will	PLT Activity and Page
SC.O.6.2.01	demonstrate the interrelationships among physics, chemistry, biology, earth and environmental science, and astronomy.	#8 The Forest Of S.T. Shrew p. 40 #9 Planet Diversity p. 45 #11 Can It Be Real? p. 54 #17 People Of The Forest p. 82 #20 Environmental Exchange Box p. 92 #31 Plant a Tree p.132 #36 Pollution Search p.153 #45 Web of Life p.194 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #70 Soil Stories p.297 #86 Our Changing World p.375 #88 Life on the Edge p.382 #90 Native Ways p.389

SC.O.6.2.02	use pictures to show cyclical processes in nature (e.g., nitrogen cycle, carbon cycle, or water cycle).	#28 Air Plants p.120 #42 Sunlight and Shades of Green p.182 #44 Water Wonders p.188 #48 Field, Forest, and Stream p.203
SC.O.6.2.03	classify living organisms according to their structure and functions.	#6 Picture This! p. 34 #7 Habitat Pen Pals p. 37 #28 Air Plants p.120 #32 A Forest of Many Uses p.135 #42 Sunlight and Shades of Green p.182 #49 Tropical Treehouse p.207 #61 The Closer You Look p.263 #63 Tree Factory p.269 #65 Bursting Buds p.277 #88 Life on the Edge p.382
SC.O.6.2.04	compare the similarities of internal features of organisms, which can be used to infer relatedness.	
SC.O.6.2.05	examine how abiotic and biotic factors affect the interdependence among organisms.	
SC.O.6.2.06	construct models of plant and animal cells and compare the basic parts (e.g., cytoplasm, cell wall, cell membrane, nucleus, or chloroplasts).	

<p>SC.O.6.2.07</p>	<p>compare growth cycles in different plants (e.g., mosses, ferns, perennials, biennials, woody plants, or herbaceous plants).</p>	<p>#17 People Of The Forest p. 82 #26 Dynamic Duos p.113 #27 Every Tree for Itself p.117 #32 A Forest of Many Uses p.135 #41 How Plants Grow p.179 #42 Sunlight and Shades of Green p.182 #43 Have Seeds, Will Travel p.185 #48 Field, Forest, and Stream p.203 #49 Tropical Treehouse p.207 #63 Tree Factory p.269 #64 Looking at Leaves p.273 #69 Forest for the Trees p.291 #77 Trees in Trouble p.332 #79 Tree Lifecycle p.341</p>
<p>SC.O.6.2.08</p>	<p>predict changes in populations of organisms due to limiting environmental factors (e.g., food supply, predators, disease, or habitat).</p>	<p>#8 The Forest Of S.T. Shrew p. 40 #9 Planet Diversity p. 45 #12 Invasive Species p. 59 #16 Pass The Plants, Please p. 77</p>

SC.O.6.2.09	analyze the ecological consequences of human interactions with the environment (e.g., renewable and non-renewable resources).	#13 We All Need Trees p. 65 #14 Renewable or Not? p. 69 #15 A Few Of My Favorite Things p. 75 #17 People Of The Forest p. 82 #32 A Forest of Many Uses p.135 #37 Reduce, Reuse, Recycle p.159 #38 Every Drop Counts p.163 #39 Energy Sleuths p.167 #49 Tropical Treehouse p.207 #51 Make Your Own Paper p.224 #52 A Look at Aluminum p.228 #69 Forest for the Trees p.291 #82 Resource-Go-Round p.355 #83 A Peek at Packaging p.360 #85 In the Driver's Seat p.370 #88 Life on the Edge p.382 #89 Trees for Many Reasons p.387 #90 Native Ways p.389
SC.O.6.2.10	classify and investigate properties and processes (changes) as either physical or chemical.	#8 The Forest Of S.T. Shrew p. 40
SC.O.6.2.11	investigate the formation and separation of simple mixtures of matter concluding that matter is composed of tiny particles and that the particles are the same for the same type of matter.	
SC.O.6.2.12	use indicators to classify substances as acidic, basic or neutral.	
SC.O.6.2.13	using the periodic table, identify the symbols of elements as solids, liquids, and gases; metals or nonmetals.	
SC.O.6.2.14	describe the composition and properties of matter (e.g., particles, malleability, melting point, density, inertia, or specific heat).	
SC.O.6.2.15	investigate the properties of the electromagnetic spectrum (e.g., wavelengths, frequencies, visible light); relate wavelengths and/or frequencies to position on the electromagnetic spectrum (e.g., colors, x-ray).	
SC.O.6.2.16	recognize that an object's color is based upon the absorption and reflection of light waves.	

SC.O.6.2.17	describe light and sound in terms of longitudinal or transverse waves.	
SC.O.6.2.18	describe the flow of heat between objects (e.g., hot air rises, or absorption and release of heat by metals).	
SC.O.6.2.19	diagram simple parallel and series circuits (e.g., bulbs, battery, wires, or switch).	
SC.O.6.2.20	correlate the relationship of mass to gravitational force (e.g., larger the mass the larger the gravitational force, or the closer the objects the stronger the force).	
SC.O.6.2.21	examine simple machines and the forces involved.	
SC.O.6.2.22	apply the effects of balanced and unbalanced forces on motion of objects.	
SC.O.6.2.23	explain motion in terms of frames of reference and analyze graphs depicting motion and predicted future motion.	
SC.O.6.2.24	monitor major atmospheric events using a variety of resources including technology.	
SC.O.6.2.25	compare and contrast continental drift hypothesis to the plate tectonic theory.	
SC.O.6.2.26	associate plant and animal life forms with specific geologic time periods.	
SC.O.6.2.27	recognize the phases of the moon.	
SC.O.6.2.28	investigate models of earth-moon-sun relationships (e.g., gravity, time, or tides).	
SC.O.6.2.29	compare the earth's tilt and revolution to the seasonal changes.	
Standard 3:	Application of Science	
SC.S.6.3	<p>Students will</p> <ul style="list-style-type: none"> • explore the relationship between the parts and the whole system; construct a variety of useful models; examine changes that occur in an object or system. • demonstrate an understanding of the interdependence between science and technology. • demonstrate the ability to utilize technology to gather data and communicate designs, results and conclusions. • demonstrate the ability to evaluate the impact of different points of view on health, population, resource and environmental practices. 	
Objectives	Students will	PLT Activity and Page

SC.O.6.3.01	explore the relationship between the parts of a system to the whole system.	#16 Pass The Plants, Please p. 77 #17 People Of The Forest p. 82 #18 Tale of the Sun p. 86 #20 Environmental Exchange Box p. 92 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #32 A Forest of Many Uses p.135 #45 Web of Life p.194 #49 Tropical Treehouse p.207 #54 I'd Like to Visit a Place Where... p.236 #69 Forest for the Trees p.291 #70 Soil Stories p.297 #76 Tree Cookies p.327 #79 Tree Lifecycle p.341 #88 Life on the Edge p.382 #90 Native Ways p.389
SC.O.6.3.02	construct a variety of useful models of an object, event, or process.	#53 On the Move p.232 #79 Tree Lifecycle p.341 #83 A Peek at Packaging p.360 #89 Trees for Many Reasons p.387

SC.O.6.3.03	compare and contrast changes that occur in an object or a system to its original state.	#5 Poet-Tree p. 31 #36 Pollution Search p.153 #40 Then and Now p.174 #42 Sunlight and Shades of Green p.182 #49 Tropical Treehouse p.207 #51 Make Your Own Paper p.224 #60 Publicize It! p.256 #76 Tree Cookies p.327 #77 Trees in Trouble p.332 #78 Signs of Fall p.337 #79 Tree Lifecycle p.341 #80 Nothing Succeeds Like Succession p.345 #90 Native Ways p.389
SC.O.6.3.04	compare and contrast the influence that a variation in scale will have on the way an object or system works. (e.g., cooling rates of different-sized containers of water, strength of different-sized constructions from the same material, or flight characteristics of different-sized model airplanes).	#53 On the Move p.232
SC.O.6.3.05	research everyday applications and interactions of science and technology.	#36 Pollution Search p.153 #37 Reduce, Reuse, Recycle p.159 #39 Energy Sleuths p.167 #52 A Look at Aluminum p.228 #70 Soil Stories p.297 #82 Resource-Go-Round p.355 #83 A Peek at Packaging p.360 #85 In the Driver's Seat p.370 #86 Our Changing World p.375
SC.O.6.3.06	evaluate and critically analyze mass media reports of scientific developments and events.	