Kindergarten Science Content Standards and Objectives

Standard 1:	Nature of Science	
SC.S.K.1	Students will • demonstrate an understanding of the history and nature of science as a human endeavor encompassing the contributions of diverse cultures, scientists, and careers. • demonstrate the abilities and understanding necessary to do scientific inquiry. demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations, while incorporating hands-on activities.	
Objectives	**Students will**	**PLT Activity and Page**
SC.O.K.1.01	ask questions about themselves and their world.	#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 #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 #27 Every Tree for Itself p.117 #36 Pollution Search p.153 #39 Energy Sleuths p.167 #43 Have Seeds, Will Travel p.185 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #70 Soil Stories p.297
SC.O.K.1.02	listen to and discuss stories about the lives and discoveries of scientists.	

SC.O.K.1.03	demonstrate curiosity, initiative and creativity by asking questions about the environment noting patterns and variations of natural objects (e.g., trees, leaves, or animal structures).	#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 #6 Picture This! p. 34 #20 Environmental Exchange Box p. 92 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #27 Every Tree for Itself p.117 #41 How Plants Grow p.179 #43 Have Seeds, Will Travel p.185 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #61 The Closer You Look p.263 #62 To Be a Tree p.269 #64 Looking at Leaves p.273 #65 Bursting Buds p.277 #70 Soil Stories p.297 #78 Signs of Fall p.337 #79 Tree Lifecycle p.341
SC.O.K.1.04	explore and describe objects and events using the five senses to develop observational skills and make predictions based on personal observation.	#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 #27 Every Tree for Itself p.117 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #61 The Closer You Look p.263 #62 To Be a Tree p.269 #63 Tree Factory p.269 #64 Looking at Leaves p.273 #78 Signs of Fall p.337

SC.O.K.1.05	use scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, balance, or magnets).	#22 Trees as Habitats p.102 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #64 Looking at Leaves p.273 #70 Soil Stories p.297 #87 Earth Manners p.378
SC.O.K.1.06	use safe and proper techniques for handling, manipulating and caring for science materials (e.g., follow safety rules, maintain a clean work area, or treat living organisms humanely).	#21 Adopt a Tree p. 97 #22 Trees as Habitats p.102 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #61 The Closer You Look p.263 #65 Bursting Buds p.277 #70 Soil Stories p.297
SC.O.K.1.07	collect and record information in a variety of ways (e.g., drawings, weather calendar, or graphs).	#1 The Shape of Things p. 17 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #27 Every Tree for Itself p.117 #36 Pollution Search p.153 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #53 On the Move p.232 #61 The Closer You Look p.263 #62 To Be a Tree p.269
Standard 2:	Content of Science	
SC.S.K.2	Students will • 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.K.2.01	using the five senses, identify living and non-living things.	#1 The Shape of Things p. 17 #3 Peppermint Beetle p. 23 #4 Sounds Around p. 26 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #62 To Be a Tree p.269 #63 Tree Factory p.269
SC.O.K.2.02	observe and describe the movement, growth and changes in plants and animals.	#21 Adopt A Tree p. 97 #27 Every Tree for Itself p.117 #41 How Plants Grow p.179 #43 Have Seeds, Will Travel p.185 #63 Tree Factory p.269 #65 Bursting Buds p.277 #78 Signs of Fall p.337
SC.O.K.2.03	observe and describe models of plants and animals in different environments (e.g., terrariums, aquariums, animals and plants in a forest, pond, or field).	#1 The Shape of Things p. 17 #20 Environmental Exchange Box p. 92 #41 How Plants Grow p.179
SC.O.K.2.04	describe, compare, sort and group objects in terms of what they are made of (e.g., clay, cloth, paper, or metal) and their physical properties of size, shape, color, weight or texture.	#1 The Shape of Things p. 17 #2 Get in Touch with Trees p. 20 #6 Picture This! p. 34 #13 We All Need Trees p. 65 #61 The Closer You Look p.263
SC.O.K.2.05	identify liquids and solids.	
SC.O.K.2.06	identify colors.	#6 Picture This! p. 34 #61 The Closer You Look p.263 #78 Signs of Fall p.337
SC.O.K.2.07	explore and describe changes in energy (e.g., hot/cold or light/dark).	
SC.O.K.2.08	explore and discuss magnetic properties of objects.	

SC.O.K.2.09	explore and state different ways objects can be moved (e.g., straight, circular, fast, or slow).	
SC.O.K.2.10	observe and record daily changes in weather (e.g., clouds or air temperature).	
SC.O.K.2.11	identify objects in the day and night sky (e.g., moon, stars, or sun).	
SC.O.K.2.12	observe and compare differences in earth materials.	#3 Peppermint Beetle p. 23 #20 Environmental Exchange Box p. 92 #43 Have Seeds, Will Travel p.185 #61 The Closer You Look p.263 #62 To Be a Tree p.269 #78 Signs of Fall p.337
Standard 3:	Application of Science	
SC.S.K.3	Students will • recognize models as representations of real things. • observe that changes occur gradually, repetitively, or randomly within the environment. • listen and be tolerant of different viewpoints while working in collaborative groups. observe and identify the use of tools and appliances in everyday life.	
Objectives	**Students will**	**PLT Activity and Page**
SC.O.K.3.01	recognize that models are representations of real things.	#27 Every Tree for Itself p.117 #62 To Be a Tree p.269 #63 Tree Factory p.269 #81 Living with Fire p.350
SC.O.K.3.02	observe and point out that change occurs gradually, repetitively, or randomly within the environment.	#21 Adopt A Tree p. 97 #43 Have Seeds, Will Travel p.185 #78 Signs of Fall p.337
SC.O.K.3.03	observe and identify the uses of tools and appliances at home and at play.	
SC.O.K.3.04	work in groups, listen to and be tolerant of different viewpoints.	#18 Tale of the Sun p. 86 #53 On the Move p.232 #67 How Big is Your Tree? p.284

First Grade Science Content Standards and Objectives

Standard 1:	Nature of Science	
SC.S.1.1	Students will • demonstrate an understanding of the history and nature of science as a human endeavor encompassing the contributions of diverse cultures, scientists, and careers. • demonstrate the abilities and understanding necessary to do scientific inquiry. demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations, while incorporating hands-on activities.	
Objectives	**Students will**	**PLT Activity and Page**

SC.O.1.1.01	ask questions about themselves and their world.	#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 #13 We All Need Trees p. 65 #16 Pass The Plants, Please p. 77 #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 #24 Nature's Recyclers p.108 #25 Birds and Worms p.111 #27 Every Tree for Itself p.117 #30 Three Cheers for Trees p.130 #31 Plant a Tree p.132 #32 A Forest of Many Uses p.135 #36 Pollution Search p.153 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #51 Make Your Own Paper p.224 #53 On the Move p.232 #54 I'd Like to Visit a Place Where... p.236 #61 The Closer You Look p.263 #62 To Be a Tree p.269 #64 Looking at Leaves p.273 #67 How Big is Your Tree? p.284 #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

SC.O.1.1.02	discuss the lives and discoveries of scientists after listening to stories about their lives and discoveries.	
SC.O.1.1.03	demonstrate curiosity, initiative and creativity by questioning observations of changes in the environment (e.g., life cycles, motion of celestial objects, or sun and shadow).	#2 Get in Touch with Trees p. 20 #4 Sounds Around p. 26 #18 Tale of the Sun p. 86 #24 Nature's Recyclers p.108 #27 Every Tree for Itself p.117 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #46 Schoolyard Safari p.197 #48 Field, Forest, and Stream p.203 #61 The Closer You Look p.263 #76 Tree Cookies p.327 #78 Signs of Fall p.337
SC.O.1.1.04	use scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, balance, magnets, thermometer, seeds, or rocks).	#1 The Shape of Things p. 17 #2 Get in Touch with Trees p. 20 #3 Peppermint Beetle p. 23 #13 We All Need Trees p. 65 #20 Environmental Exchange Box p. 92 #22 Trees as Habitats p.102 #24 Nature's Recyclers p.108 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #64 Looking at Leaves p.273 #70 Soil Stories p.297 #76 Tree Cookies p.327

SC.O.1.1.05	use safe and proper techniques for handling, manipulating and caring for science materials (e.g., follow safety rules, maintain a clean work area, or treat living organisms humanely).	#3 Peppermint Beetle p. 23 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #24 Nature's Recyclers p.108 #41 How Plants Grow p.179 #47 Are Vacant Lots Vacant? p.200 #64 Looking at Leaves p.273 #70 Soil Stories p.297 #87 Earth Manners p.378
SC.O.1.1.06	collect, record and compare information using a variety of classification systems (e.g., ordering, sorting, or sequencing) and using a variety of communication techniques (e.g., sketches, pictographs, or models).	#4 Sounds Around p. 26 #13 We All Need Trees p. 65 #16 Pass The Plants, Please p. 77 #20 Environmental Exchange Box p. 92 #25 Birds and Worms p.111 #27 Every Tree for Itself p.117 #32 A Forest of Many Uses p.135 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #53 On the Move p.232 #62 To Be a Tree p.269 #76 Tree Cookies p.327
Standard 2:	Content of Science	
SC.S.1.2	Students will • 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.1.2.01	classify objects as living or non-living.	#8 The Forest Of S.T. Shrew #21 Adopt A Tree #22 Trees as Habitats #31 Plant a Tree #46 Schoolyard Safari #48 Field, Forest, and Stream	p. 40 p. 97 p.102 p.132 p.197 p.203
SC.O.1.2.02	identify that most living things need water, food, light and air.	#18 Tale of the Sun #21 Adopt A Tree #22 Trees as Habitats #24 Nature's Recyclers #27 Every Tree for Itself #31 Plant a Tree #39 Energy Sleuths #41 How Plants Grow #43 Have Seeds, Will Travel #46 Schoolyard Safari #77 Trees in Trouble	p. 86 p. 97 p.102 p.108 p.117 p.132 p.167 p.179 p.185 p.197 p.332
SC.O.1.2.03	describe changes in life cycle of living organisms.	#8 The Forest Of S.T. Shrew #21 Adopt A Tree #24 Nature's Recyclers #27 Every Tree for Itself #41 How Plants Grow #43 Have Seeds, Will Travel #78 Signs of Fall #79 Tree Lifecycle	p. 40 p. 97 p.108 p.117 p.179 p.185 p.337 p.341
SC.O.1.2.04	identify the parts of growing plants as they develop.	#41 How Plants Grow #43 Have Seeds, Will Travel #62 To Be a Tree #63 Tree Factory #64 Looking at Leaves #79 Tree Lifecycle	p.179 p.185 p.269 p.269 p.273 p.341

SC.O.1.2.05	depict movement of living things in air, water and on land. (e.g., birds flying, fish swimming, or worms burrowing in soil).	#18 Tale of the Sun p. 86 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200
SC.O.1.2.06	recognize that materials are composed of smaller parts that may be seen with a magnifier.	#41 How Plants Grow p.179
SC.O.1.2.07	recognize that materials can be recycled and used again, sometimes in different forms.	#13 We All Need Trees p. 65 #24 Nature's Recyclers p.108 #51 Make Your Own Paper p.224 #87 Earth Manners p.378
SC.O.1.2.08	recognize that water can change from one form to another and give examples of changes.	
SC.O.1.2.09	predict and investigate the buoyancy of objects in water.	
SC.O.1.2.10	classify objects as magnetic or non-magnetic.	
SC.O.1.2.11	observe and record shadows at different times of the day.	
SC.O.1.2.12	describe the changes in the motion of objects (e.g., slowing down, speeding up, or curving).	
SC.O.1.2.13	demonstrate that sounds are produced by vibrations.	
SC.O.1.2.14	observe, identify and record changes in weather and effects on living organisms.	#2 Get in Touch with Trees p. 20 #27 Every Tree for Itself p.117 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #48 Field, Forest, and Stream p.203 #70 Soil Stories p.297 #77 Trees in Trouble p.332
SC.O.1.2.15	recognize that the sun, moon, and stars appear to move.	
SC.O.1.2.16	observe and discuss the importance of objects in the day and night sky.	#39 Energy Sleuths p.167 #78 Signs of Fall p.337
SC.O.1.2.17	use a model to compare land and water features on the Earth.	#20 Environmental Exchange Box p. 92

SC.O.1.2.18	identify important uses of air.	#22 Trees as Habitats p.102 #24 Nature's Recyclers p.108 #27 Every Tree for Itself p.117 #31 Plant a Tree p.132 #36 Pollution Search p.153 #41 How Plants Grow p.179 #46 Schoolyard Safari p.197 #53 On the Move p.232 #81 Living with Fire p.350
SC.O.1.2.19	investigate and compare the properties of soil (e.g., sand, clay, or humus).	#31 Plant a Tree p.132 #41 How Plants Grow p.179 #46 Schoolyard Safari p.197 #70 Soil Stories p.297 #77 Trees in Trouble p.332
Standard 3:	Application of Science	
S.C.S.1.3	Students will • identify how the parts of a system interact, • recognize and use models as representations of real things, • demonstrate the ability to distinguish between natural and man-made objects, • Listen and be tolerant of different viewpoints while working in collaborative groups, and demonstrate the ability to evaluate the impact of different points of view on health, population, resources and environment practices.	
Objectives	**Students will**	**PLT Activity and Page**

SC.O.1.3.01	identify that systems are made of parts that interact with one another.	#8 The Forest Of S.T. Shrew #22 Trees as Habitats #27 Every Tree for Itself #31 Plant a Tree #32 A Forest of Many Uses #36 Pollution Search #41 How Plants Grow #43 Have Seeds, Will Travel #46 Schoolyard Safari #47 Are Vacant Lots Vacant? #49 Tropical Treehouse #63 Tree Factory #78 Signs of Fall	p. 40 p.102 p.117 p.132 p.135 p.153 p.179 p.185 p.197 p.200 p.207 p.269 p.337
SC.O.1.3.02	use models as representations of real things.	#51 Make Your Own Paper #53 On the Move #63 Tree Factory #76 Tree Cookies #79 Tree Lifecycle	p.224 p.232 p.269 p.327 p.341
SC.O.1.3.03	distinguish between natural and man-made objects.	#51 Make Your Own Paper	p.224
SC.O.1.3.04	listen to and be tolerant of different viewpoints while working in collaborative groups.	#18 Tale of the Sun #31 Plant a Tree #36 Pollution Search #48 Field, Forest, and Stream #49 Tropical Treehouse #53 On the Move	p. 86 p.132 p.153 p.203 p.207 p.232

SC.O.1.3.05	develop respect and responsibility for the environment by engaging in conservation practices (e.g., recycling, or trash clean-up).	#13 We All Need Trees p. 65 #31 Plant a Tree p.132 #32 A Forest of Many Uses p.135 #36 Pollution Search p.153 #39 Energy Sleuths p.167 #53 On the Move p.232 #54 I'd Like to Visit a Place Where... p.236 #87 Earth Manners p.378

Second Grade Science Content Standards and Objectives		
Standard 1:	Nature of Science	
SC.S.2.1	Students will • demonstrate an understanding of the history and nature of science as a human endeavor encompassing the contributions of diverse cultures, scientists, and careers. • demonstrate the abilities and understanding necessary to do scientific inquiry. demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations, while incorporating hands-on activities.	
Objectives	**Students will**	**PLT Activity and Page**
SC.O.2.1.01	interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.	#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 #6 Picture This! p. 34 #8 The Forest of S.T. Shrew p. 40 #16 Pass The Plants, Please p. 77 #18 Tale of the Sun p. 86 #20 Environmental Exchange Box p. 92 #22 Trees as Habitats p.102 #41 How Plants Grow p.179 #62 To Be a Tree p.269 #76 Tree Cookies p.327 #77 Trees in Trouble p.332 #89 Trees for Many Reasons p.387
SC.O.2.1.02	compare the lives and discoveries of scientists of different cultures and backgrounds.	
SC.O.2.1.03	identify and discuss science careers in the community.	#32 A Forest of Many Uses p.135

SC.O.2.1.04	demonstrate curiosity, initiative and creativity by observing, classifying, comparing and analyzing natural objects in the environment.	#2 Get in Touch with Trees p. 20 #6 Picture This! p. 34 #8 The Forest Of S.T. Shrew p. 40 #13 We All Need Trees p. 65 #20 Environmental Exchange Box p. 92 #21 Adopt A Tree p. 97 #24 Nature's Recyclers p.108 #25 Birds and Worms p.111 #41 How Plants Grow p.179 #43 Have Seeds, Will Travel p.185 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #61 The Closer You Look p.263 #62 To Be a Tree p.269 #68 Name That Tree p.288 #70 Soil Stories p.297 #76 Tree Cookies p.327 #89 Trees for Many Reasons p.387
SC.O.2.1.05	manipulate scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, balance, thermometer, metric ruler, magnets, weather instruments, or calculators).	#20 Environmental Exchange Box p. 92 #22 Trees as Habitats p.102 #70 Soil Stories p.297 #77 Trees in Trouble p.332
SC.O.2.1.06	measure the length and width of various objects using standard and non-standard units (e.g., metric ruler, paper clips, or counting bears).	
SC.O.2.1.07	use safe and proper techniques for handling, manipulating, and caring for science materials (e.g., follow safety rules, maintain a clean work area, or treat living organisms humanely).	#24 Nature's Recyclers p.108 #31 Plant a Tree p.132 #46 Schoolyard Safari p.197 #51 Make Your Own Paper p.224 #70. Soil Stories p.297 #76 Tree Cookies p.327

SC.O.2.1.08	design and conduct simple investigations; observe, collect and record information using a variety of classification systems; describe trends of data; and make predictions based on that data (e.g., seasonal changes and plants or temperature and weather).	#2 Get in Touch with Trees p. 20 #4 Sounds Around p. 26 #6 Picture This! p. 34 #13 We All Need Trees p. 65 #20 Environmental Exchange Box p. 92 #21 Adopt A Tree p. 97 #24 Nature's Recyclers p.108 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #76 Tree Cookies p.327
Standard 2:	Content of Science	
SC.S.2.2	Students will ● 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.2.2.01	identify that plants and animals have different structures.	#6 Picture This! p. 34 #61 The Closer You Look p.263 #62 To Be a Tree p.269 #64 Looking at Leaves p.273

SC.O.2.2.02	identify the structures of living things including their systems, and explain their functions (e.g., wings for flying, fins for swimming, or roots for support and obtaining water).	#3 Peppermint Beetle p. 23 #4 Sounds Around p. 26 #6 Picture This! p. 34 #21 Adopt A Tree p. 97 #24 Nature's Recyclers p.108 #41 How Plants Grow p.179 #43 Have Seeds, Will Travel p.185 #61 The Closer You Look p.263 #62 To Be a Tree p.269 #63 Tree Factory p.269 #65 Bursting Buds p.277 #68 Name That Tree p.288
SC.O.2.2.03	sequence pictures of events to illustrate the changes in the life cycle of plants and animals.	#65 Bursting Buds p.277 #79 Tree Lifecycle p.341
SC.O.2.2.04	relate observations of the butterfly's life cycle to student's own growth and change.	
SC.O.2.2.05	compare and contrast simple models of different kinds of habitats, including a forest and a stream.	#6 Picture This! p. 34 #27 Every Tree for Itself p.117 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203
SC.O.2.2.06	identify materials as a solid, a liquid or a gas and recognize that matter takes up space, and can change from one state to another.	
SC.O.2.2.07	demonstrate that a magnet can attract or repel objects.	
SC.O.2.2.08	identify which materials and colors conduct heat better than others.	
SC.O.2.2.09	demonstrate that a shadow is cast when an object blocks light.	
SC.O.2.2.10	compare the effects of force on the motion of an object.	
SC.O.2.2.11	explore how sound can change in pitch and volume.	#4 Sounds Around p. 26
SC.O.2.2.12	identify and examine changes in the earth's surface (e.g., weathering, or erosion).	#36 Pollution Search p.153 #48 Field, Forest, and Stream p.203

SC.O.2.2.13	identify the effects of wind movement.	#39 Energy Sleuths p.167 #43 Have Seeds, Will Travel p.185 #48 Field, Forest, and Stream p.203 #53 On the Move p.232
SC.O.2.2.14	observe and describe different types of precipitation.	
SC.O.2.2.15	describe daily and seasonal weather changes.	#78 Signs of Fall p.337
SC.O.2.2.16	explain how the rotation of the Earth on its axis causes day and night.	
SC.O.2.2.17	understand that the moon has phases.	
SC.O.2.2.18	describe how fossils are formed, and match a fossil, or a picture of a fossil, to its original organism.	
Standard 3:	Application of Science	
SC.S.2.3	Students will • identify how the parts of a system interact. • recognize and use models as representations of real things. • observe that changes occur gradually, repetitively, or randomly within the environment. • recognize that common objects and events incorporate science to solve human problems and enhance the quality of life. demonstrate the ability to listen to, be tolerant of, and evaluate the impact of different points of view on health, population, resources and environmental practices while working in collaborative groups.	
Objectives	**Students will**	**PLT Activity and Page**

SC.O.2.3.01	identify parts of systems and identify how they interact with one another.	#4 Sounds Around p. 26 #6 Picture This! p. 34 #8 The Forest Of S.T. Shrew p. 40 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #24 Nature's Recyclers p.108 #27 Every Tree for Itself p.117 #30 Three Cheers for Trees p.130 #41 How Plants Grow p.179 #43 Have Seeds, Will Travel p.185 #62 To Be a Tree p.269 #63 Tree Factory p.269 #77 Trees in Trouble p.332 #81 Living with Fire p.350
SC.O.2.3.02	use models as representations of real things.	#6 Picture This! p. 34 #62 To Be a Tree p.269 #81 Living with Fire p.350
SC.O.2.3.03	observe that changes occur gradually, repetitively, or randomly within the environment.	#21 Adopt A Tree p. 97 #27 Every Tree for Itself p.117 #48 Field, Forest, and Stream p.203 #78 Signs of Fall p.337
SC.O.2.3.04	recognize that common objects and events incorporate science (e.g., CD players, Velcro, or weather) to solve human problems and enhance the quality of life.	#15 A Few Of My Favorite Things p. 75 #30 Three Cheers for Trees p.130 #31 Plant a Tree p.132 #32 A Forest of Many Uses p.135 #39 Energy Sleuths p.167 #47 Are Vacant Lots Vacant? p.200 #51 Make Your Own Paper p.224 #53 On the Move p.232
SC.O.2.3.05	listen to and be tolerant of different viewpoints while working in collaborative groups.	#13 We All Need Trees p. 65 #51 Make Your Own Paper p.224 #87 Earth Manners p.378

SC.O.2.3.06	develop respect and responsibility for the environment by engaging in conservation practices (e.g., recycling, trash clean-up, or power consumption reduction).	#30 Three Cheers for Trees p.130 #31 Plant a Tree p.132 #36 Pollution Search p.153 #39 Energy Sleuths p.167 #51 Make Your Own Paper p.224 #87 Earth Manners p.378

Third Grade Science Content Standards and Objectives

Standard 1:	Nature of Science	
SC.S.3.1	Students will • demonstrate an understanding of the history and nature of science as a human endeavor encompassing the contributions of diverse cultures, scientists, and careers. • demonstrate the abilities and understanding necessary to do scientific inquiry. • demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations, while incorporating hands-on activities.	
Objectives	**Students will**	**PLT Activity and Page**
SC.O.3.1.01	recognize that scientific explanations may lead to new discoveries (e.g., new knowledge leads to new questions).	#6 Picture This! p. 34
SC.O.3.1.02	study the lives and discoveries of scientists of different cultures and backgrounds.	
SC.O.3.1.03	explore science careers in the community.	
SC.O.3.1.04	demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.	#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 #6 Picture This! p. 34 #7 Habitat Pen Pals p. 37
SC.O.3.1.05	recognize that developing solutions to problems takes time, patience and persistence through individual and cooperative ventures.	
SC.O.3.1.06	support statements with facts found through research from various sources, including technology.	#4 Sounds Around p. 26
SC.O.3.1.07	use scientific instruments, technology, and everyday materials to investigate the natural world.	#1 The Shape of Things p. 17 #2 Get in Touch with Trees p. 20
SC.O.3.1.08	use safe and proper techniques for handling, manipulating and caring for science materials (e.g., follow safety rules, maintain a clean work area, or treat living organisms humanely).	

SC.O.3.1.09	apply mathematical skills and use metric units in measurements.	
SC.O.3.1.10	interpret data presented in a table, graph, map or diagram and use it to answer questions and make predictions and inferences based on patterns of evidence.	#1 The Shape of Things p. 17 #6 Picture This! p. 34
SC.O.3.1.11	Identify and control variables.	#3 Peppermint Beetle p. 23
Standard 2:	Content of Science	
SC.S.3.2	Students will 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.3.2.01	identify the structures of living things, including their systems and explain their functions.	#6 Picture This! p. 34 #8 The Forest Of S.T. Shrew p. 40 8. The
SC.O.3.2.02	observe, measure and record changes in living things (e.g., growth and development, or variations within species).	#4 Sounds Around p. 26
SC.O.3.2.03	compare physical characteristics and behaviors of living organisms and explain how they are adapted to a specific environment (e.g., beaks and feet in birds, seed dispersal, camouflage, or different types of flowers).	#2 Get in Touch with Trees p. 20 #6 Picture This! p. 34 #7 Habitat Pen Pals p. 37 7. H
SC.O.3.2.04	observe and describe relationships among organisms and predict the effect of adverse factors.	#6 Picture This! p. 34 #7 Habitat Pen Pals p. 37
SC.O.3.2.05	relate the buoyancy of an object to its density.	
SC.O.3.2.06	identify physical and chemical properties.	
SC.O.3.2.07	relate changes in states of matter to changes in temperature.	
SC.O.3.2.08	investigate the dissolving of solids in liquids.	

SC.O.3.2.09	investigate the reflection and refraction of light by objects.	
SC.O.3.2.10	relate how the color of an object is based upon the reflection of light.	
SC.O.3.2.11	recognize that it takes work to move objects over a distance.	
SC.O.3.2.12	examine the relationships between speed, distance, and time.	
SC.O.3.2.13	recognize that the greater a force is exerted on an object, the greater the change of its motion.	
SC.O.3.2.14	identify examples of potential and kinetic energy.	
SC.O.3.2.15	identify fossils as a record of time.	
SC.O.3.2.16	explore erosion of different materials by water and wind (e.g., sand, soil, or rocks).	
SC.O.3.2.17	describe how volcanoes and earthquakes affect the Earth.	
SC.O.3.2.18	recognize the relative movement of the Earth and moon in relation to the sun.	
SC.O.3.2.19	describe the similarities and differences among the planets.	
SC.O.3.2.20	identify properties of minerals and recognize that rocks are composed of different minerals.	
SC.O.3.2.21	explain how igneous, sedimentary and metamorphic rocks are formed.	
SC.O.3.2.22	identify geographical features using a model or map.	
SC.O.3.2.23	compare and contrast the layers of the Earth and their various features.	
Standard 3:	Application of Science	
SC.S.3.3	Students will identify how the parts of a system interact. recognize and use models as representations of real things. observe and identify patterns of change, consistency or regularity within the environment. demonstrate the ability to utilize technology to gather and organize data to communicate designs, results and conclusions. identify that a solution to a problem often creates new problems. demonstrate the ability to listen to, be tolerant of, and evaluate the impact of different points of view on health, population, resources and environmental practices while working in collaborative groups.	
Objectives	Students will	**PLT Activity and Page**

SC.O.3.3.01	identify that systems are made of parts that interact with one another.	#7 Habitat Pen Pals p. 37 #8 The Forest Of S.T. Shrew p. 40
SC.O.3.3.02	use models as representations of real things.	
SC.O.3.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of changes.	#5 Poet-Tree p. 31 #8 The Forest Of S.T. Shrew p. 40
SC.O.3.3.04	given a set of objects, group or order the objects according to an established scheme.	#1 The Shape of Things p. 17 #7 Habitat Pen Pals p. 37
SC.O.3.3.05	given a set of events, objects, shapes, designs, or numbers, formulate patterns of constancy or regularity.	
SC.O.3.3.06	cite examples of the uses of science and technology in common daily events and in the community.	
SC.O.3.3.07	explain a simple problem and identify a specific solution describing the use of tools and/or materials to solve the problem or to complete the task.	
SC.O.3.3.08	recognize that a solution to one scientific problem often creates new problems (e.g., recycling, pollution, conservation, or waste disposal).	
SC.O.3.3.09	listen to and be tolerant of different viewpoints by engaging in collaborative activities and be willing to modify ideas when new and valid information is presented.	#2 Get in Touch with Trees p. 20 #13 We All Need Trees p. 65
SC.O.3.3.10	develop respect and responsibility for the environment by engaging in conservation practices.	#4 Sounds Around p. 26 #13 We All Need Trees p. 65 #15 A Few Of My Favorite Things p. 75
SC.O.3.3.11	describe how modern tools and appliances have positively and/or negatively impacted their daily lives.	

Fourth Grade Science Content Standards and Objectives		
Standard 1:	Nature of Science	
SC.S.4.1	Students will • demonstrate an understanding of the history and nature of science as a human endeavor encompassing the contributions of diverse cultures, scientists, and careers. • demonstrate the abilities and understanding necessary to do scientific inquiry. demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations, while incorporating hands-on activities.	
Objectives	**Students will**	**PLT Activity and Page**
SC.O.4.1.01	explain how new discoveries lead to changes in scientific knowledge.	#7 Habitat Pen Pals p. 37 #20 Environmental Exchange Box p. 92
SC.O.4.1.02	study the lives and discoveries of scientists of different cultures and backgrounds.	#90 Native Ways p.389
SC.O.4.1.03	explore science careers in West Virginia.	#34 Who Works in this Forest? p.144

SC.O.4.1.04	demonstrate curiosity, initiative and creativity by developing questions that lead to investigations; designing simple experiments; and trusting observations of discoveries when trying new tasks and skills.	#6 Picture This! p. 34 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #23 The Fallen Log p.105 #24 Nature's Recyclers p.108 #25 Birds and Worms p.111 #27 Every Tree for Itself p.117 #28 Air Plants p.120 #39 Energy Sleuths p.167 #40 Then and Now p.174 #41 How Plants Grow p.179 #42 Sunlight and Shades of Green p.182 #43 Have Seeds, Will Travel p.185 #45 Web of Life p.194 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #51 Make Your Own Paper p.224 #53 On the Move p.232 #55 Planning the Ideal Community p.239 #63 Tree Factory p.269 #64 Looking at Leaves p.273 #66 Germinating Giants p.279 #68 Name That Tree p.288 #70 Soil Stories p.297 #77 Trees in Trouble p.332 #81 Living with Fire p.350
SC.O.4.1.05	recognize that developing solutions to problems requires persistence, flexibility, open-mindedness, and alertness for the unexpected.	#36 Pollution Search p.153 #39 Energy Sleuths p.167 #69 Forest for the Trees p.291 #87 Earth Manners p.378

SC.O.4.1.06	support statements with facts found through research from various sources, including technology.	#39 Energy Sleuths p.167 #40 Then and Now p.174 #45 Web of Life p.194 #76 Tree Cookies p.327 #81 Living with Fire p.350 #88 Life on the Edge p.382 #90 Native Ways p.389
SC.O.4.1.07	use scientific instruments, technology and everyday materials to investigate the natural world.	#9 Planet Diversity p. 45 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #23 The Fallen Log p.105 #24 Nature's Recyclers p.108 #27 Every Tree for Itself p.117 #28 Air Plants p.120 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #42 Sunlight and Shades of Green p.182 #43 Have Seeds, Will Travel p.185 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #63 Tree Factory p.269 #70 Soil Stories p.297 #77 Trees in Trouble p.332 #81 Living with Fire p.350
SC.O.4.1.08	demonstrate safe and proper techniques for handling, manipulating and caring for science materials.	#24 Nature's Recyclers p.108 #41 How Plants Grow p.179 #70 Soil Stories p.297 #77 Trees in Trouble p.332 #78 Signs of Fall p.337 #81 Living with Fire p.350

SC.O.4.1.09	construct a hypothesis when provided a problem.	#41 How Plants Grow p.179 #42 Sunlight and Shades of Green p.182 #43 Have Seeds, Will Travel p.185 #77 Trees in Trouble p.332
SC.O.4.1.10	establish variables and controls in an experiment; test variables through experimentation.	#4 Sounds Around p. 26 #24 Nature's Recyclers p.108 #41 How Plants Grow p.179 #42 Sunlight and Shades of Green p.182 #48 Field, Forest, and Stream p.203 #77 Trees in Trouble p.332 #78 Signs of Fall p.337 #81 Living with Fire p.350
SC.O.4.1.11	interpret data presented in a table, graph, or diagram and use it to answer questions and make decisions.	#4 Sounds Around p. 26 #6 Picture This! p. 34 #10 Charting Diversity p. 50 #24 Nature's Recyclers p.108 #27 Every Tree for Itself p.117 #36 Pollution Search p.153 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #48 Field, Forest, and Stream p.203 #70 Soil Stories p.297

SC.O.4.1.12	draw and support conclusions, make predictions and inferences based on patterns of evidence (e.g., weather maps, variation of plants, or frequency and pitch of sound).	#4 Sounds Around p. 26 #6 Picture This! p. 34 #22 Trees as Habitats p.102 #23 The Fallen Log p.105 #24 Nature's Recyclers p.108 #27 Every Tree for Itself p.117 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #42 Sunlight and Shades of Green p.182 #48 Field, Forest, and Stream p.203 #66 Germinating Giants p.279 #68 Name That Tree p.288 #69 Forest for the Trees p.291 #76 Tree Cookies p.327
SC.O.4.1.13	apply mathematical skills and use metric units in measurements and calculations.	#21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #27 Every Tree for Itself p.117 #28 Air Plants p.120 #38 Every Drop Counts p.163 #39 Energy Sleuths p.167 #41 How Plants Grow p.179 #42 Sunlight and Shades of Green p.182 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #53 On the Move p.232 #66 Germinating Giants p.279 #67 How Big is Your Tree? p.284 #73 Waste Watchers p.314
Standard 2:		

SC.S.4.2	Students will 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.0.4.2.01	describe the different characteristics of plants and animals, which help them to survive in different niches and environments.	#2 Get in Touch with Trees p. 20 #3 Peppermint Beetle p. 23 #7 Habitat Pen Pals p. 37 #8 The Forest Of S.T. Shrew p. 40 #9 Planet Diversity p. 45 #10 Charting Diversity p. 50 #11 Can It Be Real? p. 54 #16 Pass The Plants, Please p. 77 #20 Environmental Exchange Box p. 92 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #23 The Fallen Log p.105 #25 Birds and Worms p.111 #27 Every Tree for Itself p.117 #30 Three Cheers for Trees p.130 #45 Web of Life p.194 #61 The Closer You Look p.263 #63 Tree Factory p.269 #65 Bursting Buds p.277
SC.0.4.2.02	associate the behaviors of living organisms to external and internal influences (e.g., hunger, climate, or seasons).	#7 Habitat Pen Pals p. 37 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #24 Nature's Recyclers p.108 #27 Every Tree for Itself p.117 #42 Sunlight and Shades of Green p.182 #45 Web of Life p.194 #69 Forest for the Trees p.291 #88 Life on the Edge p.382

SC.0.4.2.03	identify and classify variations in structures of living things including their systems and explain their functions (e.g., skeletons, teeth, plant needles, or leaves).	#10 Charting Diversity p. 50 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #27 Every Tree for Itself p.117 #62 To Be a Tree p.265 #65 Bursting Buds p.277 #76 Tree Cookies p.327
SC.0.4.2.04	compare and sequence changes in cycles in relation to plant and animal life.	#7 Habitat Pen Pals p. 37 #21 Adopt A Tree p. 97 #22 Trees as Habitats p.102 #23 The Fallen Log p.105 #27 Every Tree for Itself p.117 #28 Air Plants p.120 #42 Sunlight and Shades of Green p.182 #69 Forest for the Trees p.291 #76 Tree Cookies p.327 #79 Tree Lifecycle p.341 #80 Nothing Succeeds Like Succession p.345
SC.0.4.2.05	give examples how plants and animals closely resemble their parents and that some characteristics are inherited from the parents and others result from interaction with the environment.	
SC.0.4.2.06	identify human uses of plants and animals (e.g., food sources, or medicines).	#13 We All Need Trees p. 65 #14 Renewable or Not? p. 69 #15 A Few Of My Favorite Things p. 75 #24 Nature's Recyclers p.108 #69 Forest for the Trees p.291 #75 Tipi Talk ` p.320
SC.0.4.2.07	describe the effects of altering environmental barriers on the migration of animals.	#49 Tropical Treehouse p.207

SC.0.4.2.08	construct and explain models of habitats, food chains, and food webs.	#7 Habitat Pen Pals p. 37 #22 Trees as Habitats p.102 #45 Web of Life p.194
SC.0.4.2.09	investigate how properties can be used to identify substances.	
SC.0.4.2.10	design an experiment to investigate the dissolving of solids and analyze the results.	
SC.0.4.2.11	examine simple chemical changes (e.g., tarnishing, rusting, or burning).	
SC.0.4.2.12	explain that materials including air take up space and are made of parts that are too small to be seen without magnification.	
SC.0.4.2.13	differentiate changes in states of matter due to heat loss or gain.	
SC.0.4.2.14	investigate variables that affect the rate of evaporation of a liquid.	
SC.0.4.2.15	compare and classify liquids based on density.	
SC.0.4.2.16	identify different forms of energy and describe energy transformations that occur between them (e.g., electrical to heat, or radiant to chemical).	#39 Energy Sleuths p.167
SC.0.4.2.17	examine types and properties of waves (e.g., transverse, longitudinal, frequency, or wavelengths).	
SC.0.4.2.18	investigate static electricity and conductors/nonconductors of electricity.	
SC.0.4.2.19	construct simple electrical circuits.	
SC.0.4.2.20	describe and explain the relationship between a compass and a magnetic field.	
SC.0.4.2.21	relate motion of an object to its frame of reference.	
SC.0.4.2.22	predict and investigate the motion of an object if the applied force is changed.	
SC.0.4.2.23	explore that sounds are produced by vibrating objects and columns of air and form conclusions about the relationship between frequency and pitch of sound.	
SC.0.4.2.24	investigate the change in the length, tension, or thickness of the vibrating object on the frequency of vibration (e.g., string, wire, or rubber band).	
SC.0.4.2.25	examine the geologic time scale.	
SC.0.4.2.26	locate and identify patterns of stars and their change in location throughout the year.	
SC.0.4.2.27	compare and explain the relative time differences to erode materials.	
SC.0.4.2.28	investigate the cause and effects of volcanoes, earthquakes and landslides.	
SC.0.4.2.29	interpret a weather chart or map and predict outcomes.	

SC.0.4.2.30	identify the sun as a star.	
SC.0.4.2.31	explain the effects of alignment of earth, moon and sun on the earth.	
SC.0.4.2.32	describe and explain the planets orbital paths.	
SC.0.4.2.33	differentiate between types of rock and describe the rock cycle.	
SC.0.4.2.34	compare ocean water and fresh water.	
SC.0.4.2.35	investigate soil types and soil composition.	
Standard 3:	Application of Science	
SC.S.4.3	Students will identify how the parts of a system interact. recognize and use models as representations of real things. observe and identify patterns of change, consistency or regularity within the environment. demonstrate the ability to utilize technology to gather and organize data to communicate designs, results and conclusions. identify that a solution to a problem often creates new problems. demonstrate the ability to listen to, be tolerant of, and evaluate the impact of different points of view on health, population, resources and environmental practices while working in collaborative groups.	
Objectives	**Students will**	**PLT Activity and Page**
SC.0.4.3.01	identify that systems are made of parts that interact with one another.	#7 Habitat Pen Pals p. 37 #16 Pass The Plants, Please p. 77 #22 Trees as Habitats p.102 #28 Air Plants p.120 #30 Three Cheers for Trees p.130 #42 Sunlight and Shades of Green p.182 #43 Have Seeds, Will Travel p.185 #44 Water Wonders p.188 #45 Web of Life p.194 #47 Are Vacant Lots Vacant? p.200 #62 To Be a Tree p.265 #65 Bursting Buds p.277 #76 Tree Cookies p.327 #79 Tree Lifecycle p.341 #82 Resource-Go-Round p.355

SC.0.4.3.02	create models as representations of real things.	#6 Picture This! p. 34 #44 Water Wonders p.188 #53 On the Move p.232 #62 To Be a Tree p.265 #75 Tipi Talk p.320 #81 Living with Fire p.350
SC.0.4.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of change.	#4 Sounds Around p. 26 #14 Renewable or Not? p. 69 #24 Nature's Recyclers p.108 #28 Air Plants p.120 #32 A Forest of Many Uses p.135 #36 Pollution Search p.153 #40 Then and Now p.174 #42 Sunlight and Shades of Green p.182 #43 Have Seeds, Will Travel p.185 #44 Water Wonders p.188 #45 Web of Life p.194 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #69 Forest for the Trees p.291 #79 Tree Lifecycle p.341 #80 Nothing Succeeds Like Succession p.345 #89 Trees for Many Reasons p.387
SC.0.4.3.04	given a set of objects, group or order the objects according to an established scheme.	#2 Get in Touch with Trees p. 20 #3 Peppermint Beetle p. 23 #6 Picture This! p. 34 #10 Charting Diversity p. 50 #16 Pass The Plants, Please p. 77 #28 Air Plants p.120

SC.0.4.3.05	given a set of events, objects, shapes, designs, or numbers, find patterns of constancy or regularity.	#2 Get in Touch with Trees p. 20 #3 Peppermint Beetle p. 23 #28 Air Plants p.120 #43 Have Seeds, Will Travel p.185 #44 Water Wonders p.188 #79 Tree Lifecycle p.341
SC.0.4.3.06	identify and explain a simple problem or task to be completed; identify a specific solution; and list task requirements.	#2 Get in Touch with Trees p. 203. #3 Peppermint Beetle p. 23 #4 Sounds Around p. 26 #6 Picture This! p. 34 #7 Habitat Pen Pals p. 37 #13 We All Need Trees p. 65 #14 Renewable or Not? p. 69 #15 A Few Of My Favorite Things p. 75 #25 Birds and Worms p.111 #28 Air Plants p.120 #39 Energy Sleuths p.167 #42 Sunlight and Shades of Green p.182 #43 Have Seeds, Will Travel p.185 #44 Water Wonders p.188 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #51 Make Your Own Paper p.224 #53 On the Move p.232 #62 To Be a Tree p.265 #73 Waste Watchers p.314
SC.0.4.3.07	use an appropriate engineering design to solve a problem or complete a task.	#15 A Few Of My Favorite Things p. 75 #53 On the Move p.232
SC.0.4.3.08	recognize that a solution to one scientific problem often creates new problems (e.g., recycling, pollution, conservation, waste disposal, or need for technology).	#15 A Few Of My Favorite Things p. 75 #36 Pollution Search p.153 #38 Every Drop Counts p.163 #82 Resource-Go-Round p.355

SC.0.4.3.09	listen to and be tolerant of different viewpoints by engaging in collaborative activities and modifying ideas when new and valid information is presented from a variety of resources.	#5 Poet-Tree p. 31 #6 Picture This! p. 34 #8 The Forest Of S.T. Shrew p. 40 #9 Planet Diversity p. 45 #10 Charting Diversity p. 50 #11 Can It Be Real? p. 54 #13 We All Need Trees p. 65 #14 Renewable or Not? p. 69 #31 Plant a Tree p.132 #40 Then and Now p.174 #44 Water Wonders p.188 #48 Field, Forest, and Stream p.203 #53 On the Move p.232
SC.0.4.3.10	describe the positive and negative consequences of the application of technology on personal health and the environment.	#4 Sounds Around p. 26
SC.0.4.3.11	develop respect and responsibility for the environment by engaging in conservation practices.	#4 Sounds Around p. 26 #13 We All Need Trees p. 65 #14 Renewable or Not? p. 69 #15 A Few Of My Favorite Things p. 75 #31 Plant a Tree p.132 #38 Every Drop Counts p.163 #69 Forest for the Trees p.291 #73 Waste Watchers p.314 #81 Living with Fire p.350 #82 Resource-Go-Round p.355 #87 Earth Manners p.378 #89 Trees for Many Reasons p.387

Fifth Grade Science Content Standards and Objectives

Standard 1:	Nature of Science	
SC.S.5.1	Students will • 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.5.1.01	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 #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.5.1.02	recognize scientific knowledge is subject to modification as new scientific information challenges current explanations.	
SC.O.5.1.03	examine the careers and contributions of men and women of diverse cultures to the development of science.	
SC.O.5.1.04	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

SC.O.5.1.05	cooperate and collaborate to ask questions, design and conduct investigations to find answers and solve problems.	#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

SC.O.5.1.06	formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.	#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
SC.O.5.1.07	apply skepticism, careful methods, logical reasoning and creativity in investigating the observable universe.	#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

SC.O.5.1.08	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.5.1.09	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
SC.O.5.1.10	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.5.1.11	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.5.1.12	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.5.2	Students will • 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.5.2.01	demonstrate an understanding of the interconnections of biological, earth and space, and physical science concepts.	#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.5.2.02	identify and explain common energy conversions in cycles of matter including photosynthesis and the carbon dioxide 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.5.2.03	identify the structures of living organisms and explain their function.	#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.5.2.04	observe and identify cells of organisms using a microscope.	
SC.O.5.2.05	compare variations of plant growth and reproduction.	#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

SC.O.5.2.06	compare and contrast how the different characteristics of plants and animals help them to survive in different niches and environments including adaptations, natural selection, and extinction.	#3 Peppermint Beetle p. 23 #4 Sounds Around p. 26 #6 Picture This! p. 34 #7 Habitat Pen Pals p. 37 #8 The Forest Of S.T. Shrew p. 40 #9 Planet Diversity p. 45 #10 Charting Diversity p. 50 #11 Can It Be Real? p. 54 #22 Trees as Habitats p.102 #24 Nature's Recyclers p.108 #25 Birds and Worms p.111 #26 Dynamic Duos p.113 #27 Every Tree for Itself p.117 #31 Plant a Tree p.132 #36 Pollution Search p.153 #41 How Plants Grow p.179 #46 Schoolyard Safari p.197 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest, and Stream p.203 #49 Tropical Treehouse p.207 #66 Germinating Giants p.279 #70 Soil Stories p.297 #79 Tree Lifecycle p.341 #80 Nothing Succeeds Like Succession p.345 #88 Life on the Edge p.382
SC.O.5.2.07	through the use of research and technology, explore the extinction of a species due to environmental conditions.	#36 Pollution Search p.153 #49 Tropical Treehouse p.207 #88 Life on the Edge p.382
SC.O.5.2.08	trace and describe the pathways of the sun's energy through producers, consumers and decomposers using food webs and pyramids.	#23 The Fallen Log p.105 #24 Nature's Recyclers p.108 #82 Resource-Go-Round p.355

SC.O.5.2.09	explain that the mass of a material is conserved whether it is together, in parts, or in a different state.	#32 A Forest of Many Uses p.135 #51 Make Your Own Paper p.224 #52 A Look at Aluminum p.228 #82 Resource-Go-Round p.355
SC.O.5.2.10	recognize that elements are composed of only one type of matter.	#52 A Look at Aluminum p.228
SC.O.5.2.11	using the periodic table, identify common elements according to their symbols.	
SC.O.5.2.12	through experimentation, identify substances by their relative densities (mass/volume=density).	
SC.O.5.2.13	analyze diagrams of electrical circuits.	
SC.O.5.2.14	measure electricity using voltage and wattage.	#73 Waste Watchers p.314
SC.O.5.2.15	investigate the properties of an electromagnet by selecting appropriate materials, designing and testing an electromagnet, and evaluating differences in design.	
SC.O.5.2.16	describe how the variables of gravity and friction affect the motion of objects.	
SC.O.5.2.17	compare and contrast the change in length, tension, or thickness of a vibrating object on the frequency of vibration.	
SC.O.5.2.18	describe the layers of the earth and their various features.	
SC.O.5.2.19	identify and describe natural landforms and explain how they change and impact weather and climate.	
SC.O.5.2.20	use a variety of instruments and sources to collect and display weather data to describe weather patterns.	
SC.O.5.2.21	compare and explain the different rates of weathering, erosion and deposition on various materials.	#20 Environmental Exchange Box p. 92 #44 Water Wonders p.188 #70 Soil Stories p.297
SC.O.5.2.22	analyze a topographical map to make inferences related to elevation and land features.	#20 Environmental Exchange Box p. 92 #70 Soil Stories p.297

SC.O.5.2.23	identify resources as being renewable or non-renewable.	#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.5.2.24	explore and explain how fossils and geologic features can be used to determine the relative age of rocks and rock layers.	#88 Life on the Edge p.382
SC.O.5.2.25	recognize that the Earth is made of plates (plate tectonics).	
Standard 3:	Application of Science	
SC.S.5.3	Students will • 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.5.3.01	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.5.3.02	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.5.3.03	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.5.3.04	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.5.3.05	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.5.3.06	evaluate and critically analyze mass media reports of scientific developments and events.	

SC.O.5.3.07	explore the connections between science, technology, society and career opportunities.	#20 Environmental Exchange Box p. 92 #32 A Forest of Many Uses p.135 #34 Who Works in this Forest? p.144 #36 Pollution Search p.153 #39 Energy Sleuths p.167 #40 Then and Now p.174 #53 On the Move p.232 #73 Waste Watchers p.314 #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

Sixth Grade Science Content Standards and Objectives

Standard 1:	Nature of Science	
SC.S.6.1	Students will • 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

SC.O.6.1.05	cooperate and collaborate to ask questions, design and conduct investigations to find answers and solve problems.	#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

SC.O.6.1.06	formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.	#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
SC.O.6.1.07	apply skepticism, careful methods, logical reasoning and creativity in investigating the observable universe.	#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

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 • 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).	

SC.O.6.2.07	compare growth cycles in different plants (e.g., mosses, ferns, perennials, biennials, woody plants, or herbaceous plants).	#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
SC.O.6.2.08	predict changes in populations of organisms due to limiting environmental factors (e.g., food supply, predators, disease, or habitat).	#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

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	Students will • 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.	

Seventh Grade Science Content Standards and Objectives

Standard 2:	Nature of Science	
SC.S.7.1	Students will • 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.7.1.01	realize that scientists formulate and test their explanations of nature using observation and experiments.	#4 Sounds Around p. 26 #27 Every Tree for Itself p.117 #72 Air We Breathe p.308 #84 The Global Climate p.363
SC.O.7.1.02	recognize scientific knowledge is subject to modification as new scientific information challenges current explanations.	
SC.O.7.1.03	examine the careers and contributions of men and women of diverse cultures to the development of science.	
SC.O.7.1.04	compare and contrast the historical significance of scientific discoveries.	

SC.O.7.1.05	cooperate and collaborate to ask questions, design and conduct investigations to find answers and solve problems.	#10 Charting Diversity p. 51 #11 Can It Be Real? p. 54 #47 Are Vacant Lots Vacant? p.200 #72 Air We Breathe p.308 #84 The Global Climate p.363
SC.O.7.1.06	formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.	
SC.O.7.1.07	apply skepticism, careful methods, logical reasoning and creativity in investigating the observable universe.	
SC.O.7.1.08	use a variety of technologies and scientific instruments to conduct explorations, investigations and experiments of the natural world.	
SC.O.7.1.09	demonstrate safe techniques for handling, manipulating and caring for science materials, equipment, natural specimens and living organisms.	#23 The Fallen Log p.105 #47 Are Vacant Lots Vacant? p.200 #48 Field, Forest & Stream p.203 #51 Make Your Own Paper p.224 #72 Air We Breathe p.308 #84 The Global Climate p.363

SC.O.7.1.10	utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses, quantifying, or identifying dependent and independent variables).	
SC.O.7.1.11	construct and use charts, graphs and tables to organize, display, interpret, analyze and explain data.	#12 Invasive Species p. 59 #27 Every Tree for Itself p.117 #32 A Forest of Many Uses p.135 #39 Energy Sleuths p.167 #44 Water Wonders p.188 #73 Waste Watchers p.314 #86 Our Changing World p.375
SC.O.7.1.12	use inferential reasoning to make logical conclusions from collected data.	
Standard 2:	Content of Science	
SC.S.7.2	Students will • 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, earth/environmental science, and astronomy. • apply knowledge, understanding and skills of the science subject matter/concepts to daily life experiences.	
Objectives	**Students will**	**PLT Activity and Page**
SC.O.7.2.01	demonstrate an understanding of the interrelationships among physics, chemistry, biology, earth/environmental science, and astronomy.	
SC.O.7.2.02	identify and describe disease causing organisms (such as bacteria, viruses, protozoa, fungi) and the diseases they cause.	#10 Charting Diversity p.50
SC.O.7.2.03	explain how skeletal, muscular, and integumentary systems work together in the human body.	
SC.O.7.2.04	compare the level of organization of cells, tissues and organs in living things.	
SC.O.7.2.05	construct simple keys to differentiate among living things with similar characteristics.	
SC.O.7.2.06	use pictures to show cyclical processes in nature (e.g., water cycle, nitrogen cycle, or carbon cycle).	
SC.O.7.2.07	evaluate how the different adaptations and life cycles of plants and animals help them to survive in different niches and environments (e.g., inherited and acquired adaptations).	

SC.O.7.2.08	analyze how changes in the environment have led to reproductive adaptations through natural selection.	#22 Trees as Habitats p.102 #26 Dynamic Duos p.113 #27 Every Tree for Itself p.117 #43 Have Seeds, Will Travel p.183 #47 Are Vacant Lots Vacant? p.200 #66 Germinating Giants p.279 #88 Life on the Edge p.382
SC.O.7.2.09	explain how an organism's behavior response is a combination of heredity and the environment.	
SC.O.7.2.10	analyze the differences in the growth, development and reproduction in flowering and non-flowering plants.	#4 Sounds Around p. 26 #12 Invasive Species p. 59 #31 Plant a Tree p.132 #33 Forest Consequences p.138 #37 Reduce, Reuse, Recycle p.159 #38 Every Drop Counts p.163 #40 Then and Now p.174 #60 400-Acre Wood p.217 #71 Watch on Wetlands p.303 #72 Air We Breathe p.308 #73 Waste Watchers p.314 #84 The Global Climate p.363 #85 In the Driver's Seat p.370
SC.O.7.2.11	predict the trends of interdependent populations if one of the limiting factors is changed.	
SC.O.7.2.12	evaluate the consequences of the introduction of chemicals into the ecosystem (e.g., environmental consequences, human health risks, or mutations).	
SC.O.7.2.13	compare differences among elements, compounds, homogeneous and heterogeneous mixtures.	
SC.O.7.2.14	examine the differences in types of solutions (e.g., solutes and solvents, relative concentrations, conductivity, pH).	
SC.O.7.2.15	examine chemical reactions involving acids and bases by monitoring color changes of indicator(s) and identifying the salt formed in the neutralization reaction.	
SC.O.7.2.16	write word equations to describe chemical reactions.	
SC.O.7.2.17	describe the movement of individual particles and verify the conservation of matter during the phase changes (e.g., melting, boiling, or freezing).	
SC.O.7.2.18	identify the characteristics of sound waves and describe how sound is perceived by the ear.	#4 Sounds Around p. 26

SC.O.7.2.19	define the absorption and reflection of light as translucent, opaque and transparent.	
SC.O.7.2.20	interpret and illustrate changes in waves as they encounter various mediums (e.g., mirrors, or lenses).	#4 Sounds Around p. 26
SC.O.7.2.21	Investigate absorption and reflection of light by an object.	
SC.O.7.2.22	characterize series and parallel circuits; AC and DC currents.	
SC.O.7.2.23	explain conservation of matter and energy and investigate the different forms of energy (e.g., mechanical, potential, kinetic, or gravitational).	
SC.O.7.2.24	perform experiments with simple machines to demonstrate the relationship between forces and distance; use vectors to represent motion.	
SC.O.7.2.25	explain the effect of gravity on falling objects (e.g., $g=9.8m/s^2$, object dropped on earth and on moon).	
SC.O.7.2.26	describe and compare the causes of tides, surfs and currents.	
SC.O.7.2.27	examine the effects of the sun's energy on oceans and weather (e.g., air masses, or convection currents).	#14 Renewable or Not? p. 69 #23 The Fallen Log p. 105 #29 Rain Reasons p.123 #44 Water Wonders p.188 #71 Watch on Wetlands p.303 #75 Tipi Talk p.320
SC.O.7.2.28	interpret GIS maps and create and interpret topographical maps.	
SC.O.7.2.29	describe rock formations (e.g., rock cycle).	
SC.O.7.2.30	classify rocks (e.g., crystal/particle size, or mineral composition and uses).	
SC.O.7.2.31	determine the relevant age of rock layers using index fossils and the law of superposition.	
SC.O.7.2.32	explain how changing latitude affects climate.	
SC.O.7.2.33	trace the life cycle of a star.	
Standard 3:	Application of Science	

SC.S.7.3	Students will • 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.7.3.01	explore the relationship between the parts of a system to the whole system.	
SC.O.7.3.02	construct a variety of useful models of an object, event, or process.	
SC.O.7.3.03	compare and contrast changes that occur in an object or a system to its original state.	
SC.O.7.3.04	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).	
SC.O.7.3.05	research everyday applications and interactions of science and technology.	
SC.O.7.3.06	evaluate and critically analyze mass media reports of scientific developments and events.	
SC.O.7.3.07	explore the connections between science, technology, society and career opportunities.	

Eighth Grade Science Content Standards and Objectives

Standard 2:	Nature of Science	
SC.S.8.1	Students will • demonstrate an understanding of history and nature of science as a human endeavor encompassing the contributions of diverse cultures and scientists. • demonstrate the ability to use the inquiry process to solve problems.	
Objectives	**Students will**	**PLT Activity and Page**
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	#4 Sounds Around p. 26 #27 Every Tree for Itself p.117
SC.O.8.1.02	demonstrate how a testable methodology is employed to seek solutions for personal and societal issues. (e.g., "scientific method").	#4 Sounds Around p. 26 #12 Invasive Species p. 59
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
SC.O.8.1.04	conduct and/or design investigations that incorporate the skills and attitudes and/or values of scientific inquiry (e.g., established research protocol, accurate record keeping, replication of results and peer review, objectivity, openness, skepticism, fairness, or creativity and logic).	#10 Charting Diversity p. 50 #11 Can It Be Real p. 54
SC.O.8.1.05	implement safe procedures and practices when manipulating equipment, materials, organisms, and models.	#23 The Fallen Log p.105 #48 Field, Forest and Stream p.203
SC.O.8.1.06	use appropriate technology solutions within a problem solving setting to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.	#4 Sounds Around p. 26 #12 Invasive Species p. 59 #48 Field, Forest and Stream p.203
SC.O.8.1.07	design, conduct, evaluate and revise experiments (e.g., compose a question to be investigated, design a controlled investigation that produces numeric data, evaluate the data in the context of scientific laws and principles, construct a conclusion based on findings, propose revisions to investigations based on manipulation of variables and/or analysis of error, or communicate and defend the results and conclusions).	#4 Sounds Around p. 26 #12 Invasive Species p. 59

SC.O.8.1.08	draw conclusions from a variety of data sources to analyze and interpret systems and models (e.g., use graphs and equations to measure and apply variables such as rate and scale, evaluate changes in trends and cycles, predict the influence of external variances such as potential sources of error, or interpret maps).	#12 Invasive Species p. 59 #27 Every Tree for Itself p.117
Standard 2:	Content of Science	
SC.S.8.2	Students will • 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, earth/environmental science, and astronomy. • apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.	
Objectives	**Students will**	**PLT Activity and Page**
SC.O.8.2.01	demonstrate an understanding of the interrelationships among physics, chemistry, biology, earth/environmental science, and astronomy.	
SC.O.8.2.02	examine and describe the structures and functions of cell organelles.	#10 Charting Diversity p.51
SC.O.8.2.03	explain how the circulatory, respiratory and reproductive systems work together in the human body.	
SC.O.8.2.04	compare the variations in cells, tissues and organs of the circulatory, respiratory and reproductive systems of different organisms.	
SC.O.8.2.05	discuss how living cells obtain the essentials of life through chemical reactions of fermentation, respiration and photosynthesis.	#23 The Fallen Log p.105 #42 Sunlight & Shades of Green p.182 #48 Field, Forest and Stream p.203
SC.O.8.2.06	analyze how behaviors of organisms lead to species continuity (e.g., reproductive/mating behaviors, or seed dispersal).	#26 Dynamic Duos p.113 #27 Every Tree for Itself p.117 #43 Have Seeds, Will Travel p.183 #66 Germinating Giants p.279
SC.O.8.2.07	demonstrate the basic principles of genetics; introduce Mendel's law, monohybrid crosses, production of body and sex cells (mitosis/meiosis), genes, chromosomes, and inherited traits.	#66 Germinating Giants p.279
SC.O.8.2.08	compare patterns of human development to other vertebrates.	
SC.O.8.2.09	organize groups of unknown organisms based on observable characteristics (e.g., create dichotomous keys).	#16 Pass the Plants, Please p. 77 #43 Have Seeds, Will Travel p.183 #68 Name that Tree p.288

SC.O.8.2.10	trace matter and energy flow in a food web as it flows from sunlight to producers and consumers, design an environment in which the chemical and energy needs for the growth, reproduction and development of plants are met (e.g., food pyramids, decomposition).	#23 The Fallen Log p.105 #27 Every Tree for Itself p.117 #42 Sunlight & Shades of Green p.182
SC.O.8.2.11	use the periodic table to locate and classify elements as metallic, non-metallic or metalloid.	
SC.O.8.2.12	reconstruct development models of the atom (e.g., Crookes, Thompson, Becquerel, Rutherford, or Bohr).	
SC.O.8.2.13	calculate the number of protons, neutrons, and electrons and use the information to construct a Bohr model of the atom.	
SC.O.8.2.14	classify elements into their families based upon their valence electrons.	
SC.O.8.2.15	evaluate the variations in diffusion rates and examine the effect of changing temperatures.	
SC.O.8.2.16	conduct and classify chemical reactions by reaction type (e.g., synthesis, decomposition, single replacement or double replacement); energy type (e.g., endothermic and exothermic); and write word equations for the chemical reactions.	
SC.O.8.2.17	identify and describe factors that affect chemical reaction rates, including catalysts, temperature changes, light energies and particle size.	
SC.O.8.2.18	examine the various sources of energy (e.g., fossil fuels, wind, solar, geothermal, nuclear, biomass).	#14 Renewable or Not? p.69 #15 A Few of My Favorite Things p.75
SC.O.8.2.19	explain the Doppler effect (e.g., sound).	
SC.O.8.2.20	quantitatively represent wavelength, frequency and velocity (e.g., v=λf).	#4 Sounds Around p. 26
SC.O.8.2.21	relate the conservation of energy theory to energy transformations (e.g., electrical/heat, or mechanical/heat).	
SC.O.8.2.22	quantitatively represent work, power, pressure (e.g., Work=Force x distance, Power=Work/time, or pressure=force/area) from collected data.	
SC.O.8.2.23	graph and interpret the relationships of distance versus time, speed versus time, and acceleration versus time.	
SC.O.8.2.24	describe Newton's Laws of Motion; identify examples, illustrate qualitatively and quantitatively drawing vector examples.	
SC.O.8.2.25	illustrate and calculate the mechanical advantage of simple machines.	
SC.O.8.2.26	research and draw conclusions related to the quality and quantity of surface and ground water.	#14 Renewable or Not? p.69
SC.O.8.2.27	identify and explain the principle forces of plate tectonics and related geological events (e.g., earthquakes, volcanoes, or landforms).	
SC.O.8.2.28	determine the impact of oceans on weather and climate; relate global patterns of atmospheric movement on local weather.	#14 Renewable or Not? p. 69 #23 The Fallen Log p. 105

SC.O.8.2.29	analyze the forces of tectonics, weathering and erosion that have shaped the earth's surface.	#27 Every Tree for Itself p.117
SC.O.8.2.30	model processes of soil formation and suggest methods of soil preservation and conservation.	#27 Every Tree for Itself p.117
SC.O.8.2.31	research and recognize the societal concerns of exploration and colonization of space.	
SC.O.8.2.32	explain phenomena associated with motions in sun-earth-moon system (e.g., eclipses, tides, or seasons).	
SC.O.8.2.33	describe the origin and orbits of comets, asteroids, and meteoroids.	
Standard 3:	Application of Science	
SC.S.8.3	Students will • demonstrate the ability to use inquiry process to explore systems, models, and changes. • demonstrate an understanding of the interdependence between science and technology. • demonstrate an understanding of the utilization of technology to gather data and communicate designs, results and conclusions. • demonstrate an understanding of personal and societal benefits of science, and an understanding of public policy decisions as related to health, population, resource and environmental issues.	
Objectives	**Students will**	**PLT Activity and Page**
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	#26 Dynamic Duos p.113 #27 Every Tree for Its elf p.117 #42 Sunlight & Shades of Green p.182
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
SC.O.8.3.03	communicate experimental designs, results and conclusions using advanced technology tools.	
SC.O.8.3.04	collaborate to present research on current environmental and technological issues to predict possible solutions.	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	
SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	