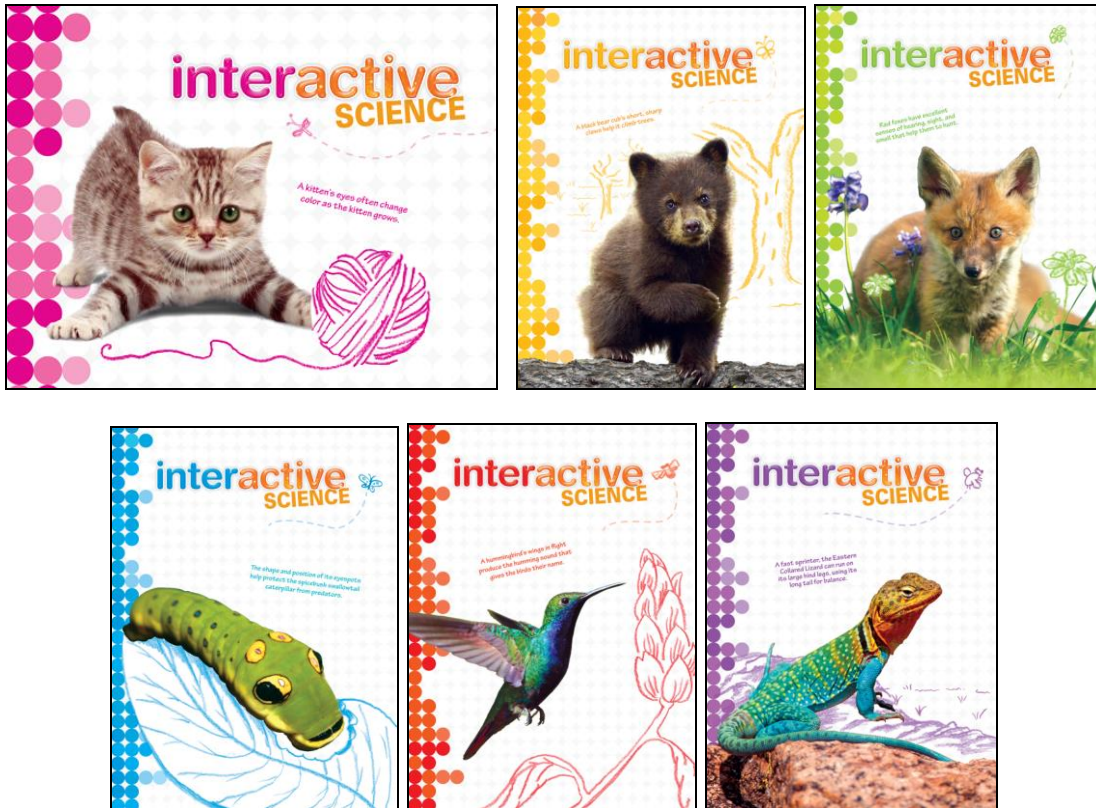


A Correlation of

Pearson

Interactive Science

Grades K-5, © 2016



To the

Arizona Science Standards

Articulated by Grade Level

Introduction

The following document demonstrates how ***Interactive Science***, © 2016, Grades K-5, supports the Arizona Science Standards, Articulated by Grade Level, for Grades K-5. Correlation references are to the Student Edition and Teacher Edition. Please note that the Kindergarten Student Edition text pages are two-sided; each singular page contains a corresponding Activity Page on the reverse side.

Interactive Science is an elementary science program that makes learning personal, engaging, and relevant for today's student. The program features an innovative Write-in Student Edition that enables students to become active participants in their learning and truly connect the Big Ideas of science to their world.

The 2016 editions of ***Interactive Science*** support the Next Generation Science Standards (NGSS) in several ways. In the Student Edition, lessons provide interactive opportunities for students to acquire the Disciplinary Core Ideas that are the building blocks of the NGSS Performance Expectations at each grade level. STEM Activities, Apply It! activities, Design It! Activities, and Performance-Based Assessments enable students to research, investigate, and apply Science and Engineering Practices to real-world problems in a meaningful way. In the Teacher's Edition, the NGSS Cross-Cutting Concepts that link across grade levels and across disciplines within grade levels are noted at the chapter level, and a detailed and focused Performance Expectation Activity is provided for each NGSS standard.

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**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Kindergarten, ©2016
Kindergarten	
Strand 1: Inquiry Process	
Inquiry Process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.	
Concept 1: Observations, Questions, and Hypotheses	
Observe, ask questions, and make predictions.	
PO 1. Observe common objects using multiple senses.	SE Only: 2, 21, Activity 63, 76, Activity 76 TE Only: 10, 42, 118, 126-127, 138
PO 2. Ask questions based on experiences with objects, organisms, and events in the environment. (See M00-S2C1-01)	SE Only: 75, Activity 75 TE Only: 8 (CCC-Cause and Effect), 124-125, 139
PO 3. Predict results of an investigation based on life, physical, and Earth and space sciences (e.g., the five senses, changes in weather).	SE Only: 21, 39, Activity 39 TE Only: 18, 22 (Differentiated Instruction – Advanced), 23, 28, 42, 60, 62, 64, 98
Concept 2: Scientific Testing (Investigating and Modeling)	
Participate in planning and conducting investigations, and recording data.	
PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.	SE Only: 80, Activity 80 TE Only: 33b, 44, 64, 134-135, 138
PO 2. Participate in guided investigations in life, physical, and Earth and space sciences.	SE Only: 2, 4-13, 18, 21, Activity 21, 23-32, 39, Activity 39, 42, Activity 42, 44-53, 60, Activity 60, 63, Activity 63, 65-74, 81, Activity 81, 86-95 TE Only: 10, 12-15, 24, 28-29, 33a, 33b, 42, 44-47, 60, 62, 64, 80, 82-85, 98, 100, 102, 118, 120-123, 136, 138, 140, 156-159
PO 3. Perform simple measurements using non-standard units of measure to collect data.	SE Only: 79, Activity 79 TE Only: 132-133, 138

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Kindergarten, ©2016
Concept 3: Analysis and Conclusions Organize and analyze data; compare to predictions.	
PO 1. Organize (e.g., compare, classify, and sequence) objects, organisms, and events according to various characteristics. (See M00-S4C4-01 and M00-S4C4-03)	SE Only: 16, Activity 16, 22, Activity 22 TE Only: 21, 26, 33, 33a, 36 (Math), 43, 63, 71a
PO 2. Compare objects according to their measurable characteristics (e.g., longer/shorter, lighter/heavier). (See M00-S4C4-01)	SE Only: 22, Activity 22 TE Only: 33a (Mathematics), 43, 63, 165
Concept 4: Communication Communicate results of investigations.	
PO 1. Communicate observations with pictographs, pictures, models, and/or words. (See M00-S2C1-02)	SE Only: Activity 2, 9, Activity 21, 25, Activity 55, 72, 78, Activity 78, Activity 81 TE Only: 15, 26, 46, 62, 100, 103, 105, 122, 130-131, 138, 139 140, 141
PO 2. Communicate with other groups to describe the results of an investigation. (See LS-R3 and LS-R5)	TE Only: 28, 64, 102, 140, 170
Strand 2: History and Nature of Science Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.	
Concept 1: History of Science as a Human Endeavor Identify individual and cultural contributions to scientific knowledge.	
PO 1. Give examples of how diverse people (e.g., children, parents, weather reporters, cooks, healthcare workers, gardeners) use science in daily life.	SE Only: 82, Activity 82, 100, Activity 100 TE Only: 137, 139, 167, 169
PO 2. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Jane Goodall [scientist], supports Strand 4; Louis Braille [inventor], supports Strand 4).	SE Only: 40, 100, Activity 100 TE Only: 61, 167, 169

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Kindergarten, ©2016
Concept 2: Nature of Scientific Knowledge	
Understand how science is a process for generating knowledge.	
No performance objectives at this grade level	No performance objectives at this grade level
Strand 3: Science in Personal and Social Perspectives	
Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.	
Concept 1: Changes in Environments	
Describe the interactions between human populations, natural hazards, and the environment.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 2: Science and Technology in Society	
Understand the impact of technology.	
PO 1. Describe how simple tools (e.g., scissors, pencils, paper clips, hammers) can make tasks easier.	SE Only: 79, Activity 79, 96, 99, Activity 99 TE Only: 132-133, 138, 161, 164 (Differentiated Instruction), 166, 169, 170

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Kindergarten, ©2016
Strand 4: Life Science	
Life Science expands students’ biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.	
Concept 1: Characteristics of Organisms	
Understand that basic structures in plants and animals serve a function.	
PO 1. Distinguish between living things and nonliving things.	SE/TE: Activity 20, 33, Activity 33, 34, Activity 34 TE only: 36 (Reading, Math, Art), 37 (Writing, Teacher Background), 39A, 48-49, 50-51, 62, 63, 66 (#1-2)
PO 2. Name the following human body parts: <ul style="list-style-type: none"> • Head • legs • Shoulders • hips • Arms • knees • Elbows • ankles • Wrists • feet • Hands • heels • Fingers • toes (See 1CH-R3-01)	This standard falls outside the scope of the Interactive Science Kindergarten program.
PO 3. Identify the five senses and their related body parts: <ul style="list-style-type: none"> • sight – eyes • hearing – ears • smell – nose • taste – tongue • touch – skin 	The Interactive Science program covers the five senses in Grade 1, Part 1, The Nature of Science, Lesson 2.
Concept 2: Life Cycles	
Understand the life cycles of plants and animals.	
PO 1. Describe that most plants and animals will grow to physically resemble their parents.	The Interactive Science program covers the similarities between living things and their parents in Grade 1, Chapter 2, Lesson 5.

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Kindergarten, ©2016
Concept 3: Organisms and Environments	
Understand the relationships among various organisms and their environment.	
PO 1. Identify some plants and animals that exist in the local environment.	TE Only: 50
PO 2. Identify that plants and animals need the following to grow and survive: <ul style="list-style-type: none"> • food • water • air • space 	SE Only: 20, 21, Activity 21, 35, Activity 35, 36, Activity 36, 37, Activity 37, 38, Activity 38, 39, Activity 39 TE Only: 36 (Social Studies), 37 (Rhyme), 39B, 40-41, 42, 52-53, 54-55, 56-57, 58-59, 60, 62, 63, 66 (#3-4), 67, 69, 71a, 71b, 71c
PO 3. Describe changes observed in a small system (e.g., ant farm, plant terrarium, aquarium).	TE only: 69 (Make an Animal World)
Concept 4: Diversity, Adaptation, and Behavior	
Identify plant and animal adaptations.	
No performance objectives at this grade level	No performance objectives at this grade level
Strand 5: Physical Science	
Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.	
Concept 1: Properties of Objects and Materials	
Classify objects and materials by their observable properties.	
PO 1. Identify the following observable properties of objects using the senses: <ul style="list-style-type: none"> • shape • texture • size • color (See M00-S4C1-02 and M00-S4C1-03)	TE Only: 33a (Mathematics), 116 (CCC), 165
PO 2. Compare objects by the following observable properties: <ul style="list-style-type: none"> • size • color • type of material (See M00-S4C1-02)	SE Only: 27 TE Only: 33a (Mathematics), 44-45, 165

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Kindergarten, ©2016
Concept 2: Position and Motion of Objects	
Understand spatial relationships and the way objects move.	
PO 1. Describe spatial relationships (i.e., above, below, next to, left, right, middle, center) of objects. (See M00-S4C1-02 and 3SS-R1-01)	SE/TE: 14, Activity 14, TE only: 4 (Math, Social Studies, Art), 16-17, 27, 32 (#1)
Concept 3: Energy and Magnetism	
Investigate different forms of energy.	
PO 1. Investigate how applied forces (push and pull) can make things move.	SE/TE: 3, 15, Activity 15, 16, Activity 16, 17, Activity 17, 18 TE only: 5 (Writing), 11, 18-19, 20-21, 22-23, 24, 26, 27, 32 (#2-3), 33, 34, 35
PO 2. Investigate how forces can make things move without another thing touching them (e.g., magnets, static electricity).	TE Only: 7A
PO 3. Sort materials according to whether they are or are not attracted by a magnet.	The Interactive Science program requires students to investigate magnets in the Grade 1, Part 2, The Design Process, STEM Activity.
PO 4. Identify familiar everyday uses of magnets (e.g., in toys, cabinet locks, decoration).	The Interactive Science program requires students to investigate magnets in the Grade 1, Part 2, The Design Process, STEM Activity.
Strand 6: Earth and Space Science	
Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.	
Concept 1: Properties of Earth Materials	
Identify the basic properties of Earth materials.	
PO 1. Identify rocks, soil, and water as basic Earth materials.	SE/TE: 58, Activity 58 TE only: 94-95, 101, 105 (#5)
PO 2. Compare physical properties (e.g., color, texture, capacity to retain water) of basic Earth materials.	For supporting content, please see SE Only: 51-52, 60 TE Only: 84-85, 98, 102

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Kindergarten, ©2016
PO 3. Classify a variety of objects as being natural or man-made.	For supporting content, please see TE Only: 152 (CCC) Additionally, the <i>Interactive Science</i> program covers the differences between natural and man-made objects in Grade 1, Part 2, The Design Process, Lesson 2.
PO 4. Identify ways some natural or man-made materials can be reused or recycled (e.g., efficient use of paper, recycle aluminum cans).	SE/TE: 59, Activity 59 TE only: 96-97, 100, 104 (#2), 109e
Concept 2: Objects in the Sky Identify objects in the sky.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 3: Changes in the Earth and Sky Understand characteristics of weather conditions and climate.	
PO 1. Identify the following aspects of weather: <ul style="list-style-type: none"> • temperature • wind • precipitation • storms 	SE/TE: Activity 57, 61 TE only: 99, 101, 104 (#3-4), 105 (#6), 107 (Make a Weather Calendar)
PO 2. Describe observable changes in weather.	SE/TE: 42, Activity 42, 57, Activity 57, 61 TE only: 80, 92-93, 99, 101, 107 (Make a Weather Calendar), 109a
PO 3. Give examples of how the weather affects people’s daily activities.	SE/TE: 61, Activity 61 TE only: 74 (Reading), 99, 101, 109b

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 1, ©2016
Grade 1	
Strand 1: Inquiry Process	
Inquiry Process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.	
Concept 1: Observations, Questions, and Hypotheses Observe, ask questions, and make predictions.	
PO 1. Compare common objects using multiple senses.	SE/TE: 14, 56, 86-87, 112, 142, 161 (At-Home Lab), 198, 227 TE only: 43c, 87b, 161 (Science Notebook)
PO 2. Ask questions based on experiences with objects, organisms, and events in the environment. (See M01-S2C1-01)	SE/TE: 155, 156 (Lightning Lab), 184 (#2) TE only: 33d, 87d, 129d, 157 (Differentiated Instruction), 171 (Science Notebook), 177d, 215d
PO 3. Predict results of an investigation based on life, physical, and Earth and space sciences (e.g., animal life cycles, physical properties, Earth materials).	SE/TE: 16, 40, 68, 70, 96, 136, 160, 168 TE only: 23a, 31a, 32 (Lab Support), 33c, 43a, 43c, 71a, 85a, 129c, 139a, 171a
Concept 2: Scientific Testing (Investigating and Modeling) Participate in planning and conducting investigations, and recording data.	
PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.	SE/TE: 128, 166-167, 184 (#4) TE only: 2D (Health), 32, 33a, 43c, 46, 49, 78, 86, 87a, 128, 129a, 140D (Writing), 145, 166 (Science Notebook), 167 (Content Refresher), 167b (#1 & 6), 177a, 185b (#5), 211, 215a
PO 2. Participate in guided investigations in life, physical, and Earth and space sciences.	SE/TE: xx, 4, 7-15, 20, 22 (Lightning Lab), 26 (Lightning Lab), 28, 31 (At-Home Lab), 32-33, 40-41, 46, 48-57, 68, 86-87, 96-97, 102, 104-113, 118, 128-129, 136-137, 142, 144-153, 158, 162, 168, 172, 176-177, 188, 190-198, 200, 208, 214-215, 222-227 TE only: 33a-33d, 43a, 43b, 43c, 43d, 87a-87d, 99a, 99c, 129a-129d, 139a, 177a-177d, 214a-214d

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 1, ©2016
PO 3. Use simple tools such as rulers, thermometers, magnifiers, and balances to collect data (U.S. customary units). (See M01-S4C4-07)	SE/TE: 20, 22, 28, 32-33, 41, 42, 102, 136-137, 158, 162, 163-165, 164 (Lightning Lab), 176-177 TE only: 33b-33d, 140C (Math, Health), 177b-177d
PO 4. Record data from guided investigations in an organized and appropriate format (e.g., lab book, log, notebook, chart paper). (See W01-S3C2-01 and W01-S3C3-01)	SE/TE: 20, 22, 27 (Lightning Lab), 28, 31 (At-Home Lab), 32-33, 41, 42, 54, 68, 86-87, 96-97, 102, 118, 137, 142, 152-153, 158, 162, 168, 172, 174, 174 (At-Home Lab), 175, 177, 188, 196-197, 200, 208, 214-215, 222-227 TE only: 30 (At-Home Lab), 87b-87d, 99c, 110-111, 129b-129d, 139a, 165 (Science—Math), 174 (Science—Math), 177b-177d, 214b-214d
Concept 3: Analysis and Conclusions Organize and analyze data; compare to predictions.	
<i>PO 1. Organize (e.g., compare, classify, and sequence) objects, organisms, and events according to various characteristics.</i> (See M01-S4C4-01)	SE/TE: 86-87, 96-97, 128-129, 142, 161, 177, 189, 214-215 TE only: 43d (Mathematics), 87b-87d, 99c (Mathematics), 101 (SEP), 127b (#2), 139b, 214b-214bd
PO 2. Compare the results of the investigation to predictions made prior to the investigation.	SE/TE: 12-13, 41, 56, 137, 168, 200, 215 TE only: 33c, 129c, 139a
Concept 4: Communication Communicate results of investigations.	
PO 1. Communicate the results of an investigation using pictures, graphs, models, and/or words. (See M01-S2C1-02 and W01-S3C3-02)	SE/TE: 11-13, 22 (Lightning Lab), 31 (At-Home Lab), 33, 54-57, 87, 97, 102, 111-113, 118, 137, 142, 158, 162, 168, 172, 177, 188, 197, 200, 208, 227 TE only: 99a, 99c, 139a, 177b-177d, 214b-214d
<i>PO 2. Communicate with other groups to describe the results of an investigation.</i> (See LS-F1)	SE/TE: 122 (At-Home Lab) TE only: 57 (Post-Activity Discussion), 120 (21 st Century Science), 127 (21 st Century Science), 139b

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 1, ©2016
Strand 2: History and Nature of Science	
Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.	
Concept 1: History of Science as a Human Endeavor	
Identify individual and cultural contributions to scientific knowledge.	
<i>PO 1. Give examples of how diverse people (e.g., children, parents, weather reporters, cooks, healthcare workers, gardeners) use science in daily life.</i>	SE/TE: 130, 155-157, 201-203, 204, 216 TE only: 13 (Things to Know, Content Refresher)
<i>PO 2. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Sally Ride [scientist], supports Strand 6; Neil Armstrong [astronaut, engineer], supports Strand 6).</i>	SE/TE: 24, 114, 130, 154, 204 TE only: 24 (Content Refresher), 114 (Content Refresher)
Concept 2: Nature of Scientific Knowledge	
Understand how science is a process for generating knowledge.	
No performance objectives at this grade level	No performance objectives at this grade level
Strand 3: Science in Personal and Social Perspectives	
Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.	
Concept 1: Changes in Environments	
Describe the interactions between human populations, natural hazards, and the environment.	
No performance objectives at this grade level	No performance objectives at this grade level

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 1, ©2016
Concept 2: Science and Technology in Society	
Understand the impact of technology.	
PO 1. Identify various technologies (e.g., automobiles, radios, refrigerators) that people use.	SE/TE: 34, 178, 201-203 TE only: 2C (Social Studies), 186C (Social Studies), 203b
PO 2. Describe how suitable tools (e.g., magnifiers, thermometers) help make better observations and measurements.	SE/TE: 162, 163-165, 164 (Lightning Lab) TE only: 178 (Content Refresher)
Strand 4: Life Science	
Life Science expands students' biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.	
Concept 1: Characteristics of Organisms	
Understand that basic structures in plants and animals serve a function.	
PO 1. Identify the following as characteristics of living things: <ul style="list-style-type: none"> • growth and development • reproduction • response to stimulus 	The <i>Interactive Science</i> program covers these characteristics of living things in Chapter 2 of the Kindergarten student edition. See also Grade 1 TE Only: 44G (Below-Level Content Reader)
PO 2. Compare the following observable features of living things: <ul style="list-style-type: none"> • movement – legs, wings • protection – skin, feathers, tree bark • respiration – lungs, gills • support – plant stems, tree trunks 	SE/TE: 62-63 TE only: 44C (Math, Health), 44D (Physical Education), 62 (Differentiated Instruction), 63 (Content Refresher)
PO 3. Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/among different groups of animals.	SE/TE: 47, 59, 62-63, 82, 84-85, TE only: 44C (Reading, Math, Health), 62 (Differentiated Instruction), 63 (Content Refresher)

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 1, ©2016
Concept 2: Life Cycles Understand the life cycles of plants and animals.	
PO 1. Identify stages of human life (e.g., infancy, adolescence, adulthood).	For supporting content, please see SE/TE: 73
PO 2. Identify similarities and differences between animals and their parents. (See 1CH-F4)	SE/TE: 44-45, 78, 79-81 TE only: 44C (Critical Thinking), 44 (Read Aloud), 99c
Concept 3: Organisms and Environments Understand the relationships among various organisms and their environment.	
<i>PO 1. Identify some plants and animals that exist in the local environment.</i>	TE Only: 61 (Professional Development Note)
PO 2. Compare the habitats (e.g., desert, forest, prairie, water, underground) in which plants and animals live.	The Interactive Science program covers habitats in which plants and animals live in Grade 2, Chapter 2, Lesson 4.
PO 3. Describe how plants and animals within a habitat are dependent on each other.	The Interactive Science program covers interdependence of plants and animals live in Grade 2, Chapter 2, Lesson 5.
Concept 4: Diversity, Adaptation, and Behavior Identify plant and animal adaptations.	
No performance objectives at this grade level	No performance objectives at this grade level

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 1, ©2016
Strand 5: Physical Science	
Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.	
Concept 1: Properties of Objects and Materials	
Classify objects and materials by their observable properties.	
PO 1. Classify objects by the following observable properties: <ul style="list-style-type: none"> • shape • texture • size • color • weight 	SE/TE: 46, 161
PO 2. Classify materials as solids or liquids.	The Interactive Science program covers the states of matter in Grade 2, Chapter 1, Lesson 2.
Concept 2: Position and Motion of Objects	
Understand spatial relationships and the way objects move.	
PO 1. Demonstrate the various ways that objects can move (e.g., straight line, zigzag, back-and-forth, round-and-round, fast, slow).	The Interactive Science program covers motion in Kindergarten, Chapter 1, Lesson 3.
Concept 3: Energy and Magnetism	
Investigate different forms of energy.	
No performance objectives at this grade level	No performance objectives at this grade level

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 1, ©2016
Strand 6: Earth and Space Science	
Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.	
Concept 1: Properties of Earth Materials Identify the basic properties of Earth materials.	
PO 1. Describe the following basic Earth materials: <ul style="list-style-type: none"> • rocks • soil • water 	The <i>Interactive Science</i> program covers these basic Earth materials in Kindergarten, Chapter 3, Lesson 5.
PO 2. Compare the following physical properties of basic Earth materials: <ul style="list-style-type: none"> • color • texture • capacity to retain water 	The <i>Interactive Science</i> program asks the student to investigate the properties of basic Earth materials in Grade 2, Chapter 3.
PO 3. Identify common uses (e.g., construction, decoration) of basic Earth materials (i.e., rocks, water, soil).	The <i>Interactive Science</i> program asks the student to identify uses of these basic earth materials in Kindergarten, Chapter 3, Lesson 5.
PO 4. Identify the following as being natural resources: <ul style="list-style-type: none"> • air • water • soil • trees • wildlife 	For supporting content, please see TE Only: 61 (Professional Development Note)
PO 5. Identify ways to conserve natural resources (e.g., reduce, reuse, recycle, find alternatives).	The <i>Interactive Science</i> program addresses conservation and recycling in Kindergarten, Chapter 3, Lesson 6 and in the Grade 2, Chapter 3 STEM Activity.

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 1, ©2016
Concept 2: Objects in the Sky Identify objects in the sky.	
PO 1. Identify evidence that the Sun is the natural source of heat and light on the Earth (e.g., warm surfaces, shadows, shade).	SE/TE: 21, 25, 100, 103, 115-116, 117 (Lightning Lab), 134 (#1) TE only: 100D (Teacher Background), 100G, 100 (Read Aloud, Content Refresher), 116 (Science-Notebook), 117b (#4)
PO 2. Compare celestial objects (e.g., Sun, Moon, stars) and transient objects in the sky (e.g., clouds, birds, airplanes, contrails).	SE/TE: 119-120 TE Only: 100G, 100H
PO 3. Describe observable changes that occur in the sky, (e.g., clouds forming and moving, the position of the Moon).	SE/TE: 118, 119-123, 134 (#3), 139 TE only: 100C (Reading, Social Studies), 100G, 121 (Science Notebook), 139a
Concept 3: Changes in the Earth and Sky Understand characteristics of weather conditions and climate.	
PO 1. Identify the following characteristics of seasonal weather patterns: <ul style="list-style-type: none"> • temperature • type of precipitation • wind 	SE/TE: 124-127, 135 (#5-6) TE only: 100C (Writing), 126 (Science—Social Studies), 127 (Science Notebook), 127b, 135 (#5-8), 139b
PO 2. Analyze how the weather affects daily activities.	SE/TE: 117, 124 TE only: 100D (Health), 126 (Science—Social Studies), 127 (21 st Century Learning)

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 2, ©2016
Grade 2	
Strand 1: Inquiry Process	
Inquiry Process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.	
Concept 1: Observations, Questions, and Hypotheses	
Observe, ask questions, and make predictions.	
PO 1. Formulate relevant questions about the properties of objects, organisms, and events in the environment. (See M02-S2C1-01)	SE/TE: 176, 177 (Lightning Lab), 202 (#2) TE only: 2C (Math), 49d, 105d, 160C (Writing), 190 (Science Notebook), 235d
PO 2. Predict the results of an investigation (e.g., in animal life cycles, phases of matter, the water cycle).	SE/TE: 58, 60 (Cool a Balloon), 61 (Order Objects by Mass), 114
Concept 2: Scientific Testing (Investigating and Modeling)	
Participate in planning and conducting investigations, and recording data.	
<i>PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.</i>	SE/TE: 48, 144, 58, 144, 148, 156, 183-184, 187, 203 (#5) TE only: 4, 6, 7, 16, 49a, 61d, 67, 88, 105a, 117a, 120, 123, 149a, 159a, 160D (Health), 165, 187b (#2), 197a, 203b (#6), 209, 234, 235a
<i>PO 2. Participate in guided investigations in life, physical, and Earth and space sciences.</i>	SE/TE: 4, 6-15, 16, 18 (At-Home Lab), 27 (At-Home Lab), 40, 48-49, 58-59, 60 (Cool a Balloon), 64, 66-75, 104-105, 114-115, 116 (Light and Seeds), 156-157, 158 (Erosion), 162, 164-173, 178, 182, 188, 196-197, 206, 208-217, 222, 228, 234-235, 242-247 TE only: 2C (Math), 49a-49d, 61a, 61b, 61c, 61d, 105a-105d, 117a, 197a-197d, 235a-235d
<i>PO 3. Use simple tools such as rulers, thermometers, magnifiers, and balances to collect data (U.S. customary units). (See M02-S4C4-05 and M02-S4C4-06)</i>	SE/TE: 36, 48-49, 182, 183-186, 194, 196-197, 222, 228 TE only: 2C (Math)

**A Correlation of Interactive Science, ©2016 to the
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Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 2, ©2016
<p><i>PO 4. Record data from guided investigations in an organized and appropriate format (e.g., lab book, log, notebook, chart paper).</i> (See W02-S3C2-01 and W02-S3C3-01)</p>	<p>SE/TE: 4, 8, 12-13, 40, 48-49, 58-59, 64, 72, 105, 115, 116, 120, 149, 162, 170-173, 182, 188, 192, 196-197, 206, 222 TE only: 2C (Math), 49b-49d, 61b, 105b-105d, 117a, 149b-149d, 159d, 197b-197d, 245</p>
<p>Concept 3: Analysis and Conclusions Organize and analyze data; compare to predictions.</p>	
<p>PO 1. Organize data using graphs (i.e., pictograph, tally chart), tables, and journals. (See M02-S2C1-02)</p>	<p>SE/TE: 4, 8, 12-13, 36, 48, 58-59, 105, 115, 120, 170, 182, 192, 222 TE only: 2C (Math), 49b-49d, 61a, 61b, 105b-105d, 160C (Math, Art), 197b-197d</p>
<p>PO 2. Construct reasonable explanations of observations on the basis of data obtained (e.g., Based on the data, does this make sense? Could this really happen?). (See M02-S2C1-04)</p>	<p>SE/TE: 4, 5, 13-15, 16, 40, 49, 59, 64, 105, 162, 170-173, 182, 188, 222 TE only: 2C (Math), 61d</p>
<p>PO 3. Compare the results of the investigation to predictions made prior to the investigation.</p>	<p>SE/TE: 59, 60 (Cool a Balloon), 61 (Order Objects by Mass), 105, 115, 157, 162 TE only: 30 (Lab Support), 49c, 149c, 186 (Differentiated Instruction)</p>
<p>PO 4. Generate questions for possible future investigations based on the conclusions of the investigation.</p>	<p>SE/TE: TE only: 2C (Math)</p>
<p>Concept 4: Communication Communicate results of investigations.</p>	
<p>PO 1. Communicate the results and conclusions of an investigation (e.g., verbal, drawn, or written). (See M02-S2C1-02 and W02-S3C2-01)</p>	<p>SE/TE: 14-15, 49, 59, 60 (Cool a Balloon), 74-75, 105, 115, 130-131, 172-173, 196-197, 206, 214-217, 222, 228 TE only: 2C (Math), 49b-49d, 61d, 197b-197d, 235b-235d, 245</p>
<p><i>PO 2. Communicate with other groups to describe the results of an investigation.</i> (See LS-F1)</p>	<p>SE/TE: 192, 206 TE only: 159c (ELA/Literacy), 160D (Social Studies)</p>

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 2, ©2016
Strand 2: History and Nature of Science	
Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.	
Concept 1: History of Science as a Human Endeavor	
Identify individual and cultural contributions to scientific knowledge.	
<i>PO 1. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Daniel Hale Williams [physician], supports Strand 4; Charles Drew [physician], supports Strand 4; Elizabeth Blackwell [physician], supports Strand 4).</i>	SE/TE: 198 TE only: 160D (Teacher Background), 160G-160H (Leveled Content Reader Support – Advanced), 204C (Writing), 204D (Writing)
PO 2. Identify science-related career opportunities.	SE/TE: 106, 198 TE only: 106 (content Refresher)
Concept 2: Nature of Scientific Knowledge	
Understand how science is a process for generating knowledge.	
PO 1. Identify components of familiar systems (e.g., organs of the digestive system, bicycle).	SE/TE: 41-47, 57 (#7), 78-79, 100-103, 234-235 TE only: 61c, 102 (Content Refresher), 118D (Teacher Background), 204D (Teacher Background)
PO 2. Identify the following characteristics of a system: <ul style="list-style-type: none"> • consists of multiple parts or subsystems • parts work interdependently 	SE/TE: 41-47, 57 (#7), 78-79, 100-103, 234-235 TE only: 61c, 103b (#6), 117a
PO 3. Identify parts of a system too small to be seen (e.g., plant and animal cells).	The Interactive Science program covers the role of specialized cells in photosynthesis and plant transport systems in Grade 3, Lessons 3.2 and 3.3 and the Chapter 3 Investigate It! activity.

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 2, ©2016
Strand 3: Science in Personal and Social Perspectives	
Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.	
Concept 1: Changes in Environments	
Describe the interactions between human populations, natural hazards, and the environment.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 2: Science and Technology in Society	
Understand the impact of technology.	
PO 1. Analyze how various technologies impact aspects of people’s lives (e.g., entertainment, medicine, transportation, communication).	SE/TE: 218, 219-221, 236 TE only: 220 (Science—Social Studies), 221 (Science Notebook)
PO 2. Describe important technological contributions made by people, past and present: <ul style="list-style-type: none"> • automobile – Henry Ford • airplane – Wilbur and Orville Wright • telephone – Alexander G. Bell 	SE/TE: 223 TE only: 160D (Teacher Background), 160G-160H (Leveled Content Reader Support – Advanced), 204C (Writing), 204D (Writing), 220 (21 st Century Learning), 224 (Explain)
PO 3. Identify a simple problem that could be solved by using a suitable tool.	SE/TE: 224, 242-247, 248 (Design a Solution) TE only: 224 (Science notebook)

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 2, ©2016
Strand 4: Life Science	
Life Science expands students’ biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.	
Concept 1: Characteristics of Organisms	
Understand that basic structures in plants and animals serve a function.	
PO 1. Identify animal structures that serve different functions (e.g., sensory, defense, locomotion).	SE/TE: 90-93, 231-233 TE only: 92 (Science—Writing)
PO 2. Identify the following major parts of: <ul style="list-style-type: none"> • the digestive system – mouth, esophagus, stomach, small and large intestines • respiratory system – nose, trachea, lungs, diaphragm • circulatory system – heart, arteries, veins, blood (See 1CH-F3-01)	This standard falls outside the scope of the Interactive Science Grade 2 program.
PO 3. Describe the basic functions of the following systems: <ul style="list-style-type: none"> • digestive – breakdown and absorption of food, disposal of waste • respiratory – exchange of oxygen and carbon dioxide • circulatory – transportation of nutrients and oxygen throughout the body (See 1CH-F3-02)	This standard falls outside the scope of the Interactive Science Grade 2 program. Internal plant systems for photosynthesis, transport, and reproduction are discussed in Grade 3, Chapter 3.
Concept 2: Life Cycles	
Understand the life cycles of plants and animals.	
PO 1. Describe the life cycles of various insects.	The Interactive Science program introduces and asks students to describe the life cycles of insects in Grade 1, Lesson 2.4 (grasshopper) and in Grade 3, Lesson 4.3 (butterfly).
PO 2. Describe the life cycles of various mammals.	The Interactive Science program introduces and asks students to describe the life cycles of mammals Grade 3, Lesson 4.3.

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 2, ©2016
PO 3. Compare the life cycles of various organisms.	The <i>Interactive Science</i> program addresses the life cycles of various animals, including birds, insects, reptiles, amphibians, and mammals in Grade 1, Lesson 2.4 and in Grade 3, Lesson 4.3.
Concept 3: Organisms and Environments Understand the relationships among various organisms and their environment.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 4: Diversity, Adaptation, and Behavior Identify plant and animal adaptations.	
No performance objectives at this grade level	No performance objectives at this grade level
Strand 5: Physical Science	
Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.	
Concept 1: Properties of Objects and Materials Classify objects and materials by their observable properties.	
PO 1. Describe objects in terms of measurable properties (e.g., length, volume, weight, temperature) using scientific tools. (See M02-S4C4-01 and M02-S4C4-02)	SE/TE: 16, 17-23, 61 (Order Objects by Mass) TE only: 2G, 21 (Science Notebook), 61a
PO 2. Classify materials as solids, liquids, or gases.	SE/TE: 25-29, 56 (#2-3) TE only: 2C (Reading), 2D (Writing), 28 (Science Notebook), 29b, 52 (Differentiated Instruction)
PO 3. Demonstrate that water can exist as a: <ul style="list-style-type: none"> • gas – vapor • liquid – water • solid – ice 	SE/TE: 4, 5, 37-39, 57 (#6) TE only: 2D (Teacher Background), 39 (Science Notebook), 57a (#2), 57b (#7), 61d
PO 4. Demonstrate that solids have a definite shape and that liquids and gases take the shape of their containers.	SE/TE: 25-29, 36, 37-39, 50, 57b (#4) TE only: 39a

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Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 2, ©2016
Concept 2: Position and Motion of Objects	
Understand spatial relationships and the way objects move.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 3: Energy and Magnetism	
Investigate different forms of energy.	
No performance objectives at this grade level	No performance objectives at this grade level
Strand 6: Earth and Space Science	
Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.	
Concept 1: Properties of Earth Materials	
Identify the basic properties of Earth materials.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 2: Objects in the Sky	
Identify objects in the sky.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 3: Changes in the Earth and Sky	
Understand characteristics of weather conditions and climate.	
PO 1. Measure weather conditions (e.g., temperature, precipitation). (See M02-S4C4-04 and M02-S4C4-05)	The Interactive Science program requires the student to measure and record weather conditions in Grade 1, Lesson 3.3 and in Grade 3, Lessons 3.2 and 3.3.
PO 2. Record weather conditions (e.g., temperature, precipitation).	The Interactive Science program requires the student to measure and record weather conditions in Grade 1, Lesson 3.3 and in Grade 3, Lessons 3.2 and 3.3.
PO 3. Identify the following types of clouds: <ul style="list-style-type: none"> • cumulus • stratus • cirrus 	The Interactive Science program addresses cloud types in the "Big World, My World" feature for Grade 3, Chapter 3.
PO 4. Analyze the relationship between clouds, temperature, and weather patterns.	The Interactive Science program discusses the relationship between clouds, temperature, and weather patterns in Grade 3, Lessons 3.1 and 3.2.

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 3, ©2016
Grade 3	
Strand 1: Inquiry Process	
Inquiry Process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.	
Concept 1: Observations, Questions, and Hypotheses Observe, ask questions, and make predictions.	
PO 1. Formulate relevant questions about the properties of objects, organisms, and events of the environment using observations and prior knowledge. (See M03-S2C1-01)	SE/TE: 99, 300 TE only: 83d, 99c, 141d, 229d, 277d, 290C (Inquiry Questions)
PO 2. Predict the results of an investigation based on observed patterns, not random guessing.	SE/TE: 82, 91 (#8), 102, 224, 283 (#7), 363 TE only: 83b, 83c, 99b, 141c, 327c, 363c
Concept 2: Scientific Testing (Investigating and Modeling) Participate in planning and conducting investigations, and recording data.	
<i>PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.</i>	SE/TE: 70, 76, 83, 140, 216, 228, 266, 276, 324-325, 326 TE only: 43, 83a, 105, 141a, 198, 201, 210, 229a, 241, 251, 277a, 290D (Scientific Tools), 295, 327a, 340, 343, 362, 363a
PO 2. Plan a simple investigation (e.g., one plant receives adequate water, one receives too much water, and one receives too little water) based on the formulated questions.	SE/TE: 99 (Plan an Investigation) TE only: 39 (SEP), 83d, 97 (Possible Extensions), 99a, 99b, 141d, 229d, 277d, 327d, 363d
PO 3. Conduct simple investigations (e.g., related to plant life cycles, changing the pitch of a sound, properties of rocks) in life, physical, and Earth and space sciences.	SE/TE: 40, 52, 58, 70, 76, 82-83, 94-97, 98, 99, 102, 116, 122, 128, 140-141, 198, 210, 216, 224, 228-229, 240-243, 244, 248, 258, 266, 270, 276-277, 286-287, 292, 302, 308, 314, 320, 326-327, 340, 350, 356, 362-363, 374-379 TE only: 83a-83d, 99a, 99b, 99c, 99d, 141a-141d, 229a-229d, 245b, 245e, 245h, 277a-277d, 289a, 289b, 327a-327d, 363a-363d
PO 4. Use metric and U.S. customary units to measure objects. (See M03-S4C4-04)	SE/TE: 94-97, 106-107, 304, 308, 322, 342-344, EM1 TE Only: 99a (Mathematics), 305 (21 st Century Learning), EM1 (Measurements)

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Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 3, ©2016
PO 5. Record data in an organized and appropriate format (e.g., t-chart, table, list, written log). (See W03-S3C2-01 and W03-S3C3-01)	SE/TE: 44-45, 58, 70, 82-83, 96, 102, 106, 128, 140-141, 201-203, 210, 229, 241-242, 248, 251-252, 258, 286-287, 289 (Measure Rainfall), 296, 302, 308, 319 (Lightning Lab), 320, 326, 328, 340, 343- 345, 350, 356, 363, 375-378 TE only: 83b-83d, 99a, 99c, 99d, 141b-141d, 148 (#7), 229c-229d, 245a, 245d, 245e, 245g, 245h, 277b-277d, 289a, 327b-327d, 363b-363d
Concept 3: Analysis and Conclusions Organize and analyze data; compare to predictions.	
PO 1. Organize data using the following methods with appropriate labels: <ul style="list-style-type: none"> • bar graphs • pictographs • tally charts (See M03-S2C1-02)	SE/TE: 97, 202, 289 (Measure Rainfall), 314 TE only: 83b-83d, 110 (Science –Math), 115b, 127b, 141b-141d, 229c-229d, 245e (Mathematics), 245g (Mathematics), 289a, 313 (Go Green)
PO 2. Construct reasonable interpretations of the collected data based on formulated questions. (See M03-S2C1-03)	SE/TE: 40, 45, 52, 58, 70, 76, 82, 97, 102, 107, 116, 122, 128, 141, 202-203, 210, 216, 224, 243, 248, 252-253, 258, 286-287, 292, 297, 302, 308, 320, 327, 328, 340, 345, 350, 356, 363, 376 TE only: 82a-82d, 99a, 99b, 99c, 99d, 141b-141d, 229c-229d, 245a, 245b, 245c, 245d, 245e, 245f, 245g, 245h, 277d, 289a, 289c, 327b-327d, 363b-363d
<i>PO 3. Compare the results of the investigation to predictions made prior to the investigation.</i>	SE/TE: 97, 102, 243, 287, 363
<i>PO 4. Generate questions for possible future investigations based on the conclusions of the investigation.</i>	For supporting content, please see SE/TE: 311 TE only: 290C (Inquiry Questions), 290D (Scientific Methods)
PO 5. Record questions for further inquiry based on the conclusions of the investigation.	For supporting content, please see SE/TE: 311 TE only: 290C (Inquiry Questions), 290D (Scientific Methods)

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Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 3, ©2016
Concept 4: Communication Communicate results of investigations.	
PO 1. Communicate investigations and explanations using evidence and appropriate terminology. (See W03-S3C2-01)	SE/TE: 40, 45, 52, 58, 70, 76, 82, 97, 102, 107, 116, 122, 128, 141, 198, 203, 210, 216, 224, 240-243, 248, 252-253, 258, 266, 270, 286-287, 292, 297, 302, 308, 314, 320, 340, 345, 350, 356, 378 TE only: 83a-83d, 99a, 99b, 99c, 99d, 141b-141d, 229b-229d, 245a, 245b, 245c, 245d, 245e, 245f, 245g, 245h, 277b-277d, 289a, 289b, 289c, 327b-327d, 363b-363d
PO 2. Describe an investigation in ways that enable others to repeat it. (See W03-S3C2-01 and LS-F1)	SE/TE: 42-45, 94-97, 200-203, 292 TE only: 82c-82d, 141d, 229d, 277d
<i>PO 3. Communicate with other groups to describe the results of an investigation.</i> (See LS-E1)	SE/TE: 46, 273 (At-Home Lab) TE Only: 208 (At-Home Lab), 219 (21 st Century Learning)
Strand 2: History and Nature of Science	
Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.	
Concept 1: History of Science as a Human Endeavor Identify individual and cultural contributions to scientific knowledge.	
<i>PO 1. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., John Muir [naturalist], supports Strand 4; Thomas Edison [inventor], supports Strand 5; Mae Jemison [engineer, physician, astronaut], supports Strand 6; Edmund Halley [scientist], supports Strand 6).</i>	SE/TE: 8, 28, 168, 337, 346
PO 2. Describe science-related career opportunities.	SE/TE: 37, 84, 142, 239, 278, 285

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Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 3, ©2016
Concept 2: Nature of Scientific Knowledge	
Understand how science is a process for generating knowledge.	
PO 1. Describe how, in a system (e.g., terrarium, house) with many components, the components usually influence one another.	SE/TE: 78-79, 118-119, 123-127, 205-209, 255-257, 352-355, 364 TE Only: 207 (Differentiated Instruction)
PO 2. Explain why a system may not work if a component is defective or missing.	SE/TE: 76, 78-79, 81 (#10), 116, 118 (#2), 123 (#1), 127 (#8) TE Only: 81a, 209a
Strand 3: Science in Personal and Social Perspectives	
Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.	
Concept 1: Changes in Environments	
Describe the interactions between human populations, natural hazards, and the environment.	
PO 1. Describe the major factors that could impact a human population (e.g., famine, drought, disease, improved transportation, medical breakthroughs).	SE/TE: 93, 151, 230, 271-275, 341, 348-349
PO 2. Describe the beneficial and harmful impacts of natural events and human activities on the environment (e.g., forest fires, flooding, pesticides).	SE/TE: 217-223, 271-275 TE Only: 213 (21 st Century Learning), 245h
Concept 2: Science and Technology in Society	
Understand the impact of technology.	
PO 1. Identify ways that people use tools and techniques to solve problems.	SE/TE: 267-269, 303-304, 320, 321-325, 326-327, 350-355 TE only: 290D
PO 2. Describe the development of different technologies (e.g., communication, entertainment, transportation, medicine) in response to resources, needs, and values.	SE/TE: 93, 99 (Solve a Problem), 104-108, 289 (Measure Rainfall), 346, 347-349, 373 TE only: 290G, 338C (Technology), 338G, 338-339, 341,
PO 3. Design and construct a technological solution to a common problem or need using common materials.	SE/TE: 42-45, 99, 342-345, 350 TE only: 99d

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Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 3, ©2016
Strand 4: Life Science	
Life Science expands students' biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.	
Concept 1: Characteristics of Organisms	
Understand that basic structures in plants and animals serve a function.	
PO 1. Describe the function of the following plant structures: <ul style="list-style-type: none"> • roots – absorb nutrients • stems – provide support • leaves – synthesize food • flowers – attract pollinators and produce seeds for reproduction 	SE/TE: 116, 117-121, 120 (At-Home Lab), 122, 123-127, 125 (Lightening Lab), 140-141, 148 (#4-7) TE only: 100C (More about Leaves, Photosynthesis), 100D (Roots, Stems), 100G, 119 (Science Notebook), 141a-141d, 149a (#4-6), 149b (#10), 150 (#3-6)
Concept 2: Life Cycles	
Understand the life cycles of plants and animals.	
PO 1. Compare life cycles of various plants (e.g., conifers, flowering plants, ferns).	SE/TE: 110-113, 128, 129-133, 135-139, 149 (#8-11) TE Only: 149b (#7)
PO 2. Explain how growth, death, and decay are part of the plant life cycle.	SE/TE: 135 TE Only: 245a, 139
Concept 3: Organisms and Environments	
Understand the relationships among various organisms and their environment.	
PO 1. Identify the living and nonliving components of an ecosystem.	SE/TE: 205-207, 209 (At-Home Lab) TE only: 207 (Science Notebook), 237a (#1)
PO 2. Examine an ecosystem to identify microscopic and macroscopic organisms.	SE/TE: 200-202, 228-229 TE only: 229a-229d
PO 3. Explain the interrelationships among plants and animals in different environments: <ul style="list-style-type: none"> • producers – plants • consumers – animals • decomposers – fungi, insects, bacteria 	SE/TE: 211-215, 236 (#4-6) TE only: 196C (Ecosystems), 196G, 206 (Content Refresher), 212 (Content Refresher), 215 (Differentiated Instruction), 237a (#3-5)
PO 4. Describe how plants and animals cause change in their environment.	SE/TE: 209, 215, 218-219, 223 (#9) TE Only: 218 (Differentiated Instruction), 237b (#8)

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Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 3, ©2016
PO 5. Describe how environmental factors (e.g., soil composition, range of temperature, quantity and quality of light or water) in the ecosystem may affect a member organism’s ability to grow, reproduce, and thrive.	SE/TE: 216, 217-223 TE only: 196C (Adaptations), 196D (Plant Adaptations, Grasslands), 243 (Possible Extensions), 237a (#6)
Concept 4: Diversity, Adaptation, and Behavior Identify plant and animal adaptations.	
PO 1. Identify adaptations of plants and animals that allow them to live in specific environments.	SE/TE: 226, 237 (#8), 238 (#4), 239, 240-243, 244 (Animals and Seasons) TE only: 196C (Adaptations), 196D (Plant Adaptations, Grasslands), 245f
PO 2. Describe ways that species adapt when introduced into new environments.	The Interactive Science program covers adaptation to new environments in Grade 4, Lessons 4.4 and 4.5.
PO 3. Cite examples of how a species’ inability to adapt to changing conditions in the ecosystem led to the extinction of that species.	TE Only: 196 (Content Refresher), 219 (Differentiated Instruction)
Strand 5: Physical Science	
Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.	
Concept 1: Properties of Objects and Materials Classify objects and materials by their observable properties.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 2: Position and Motion of Objects Understand spatial relationships and the way objects move.	
No performance objectives at this grade level	No performance objectives at this grade level

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 3, ©2016
Concept 3: Energy and Magnetism	
Investigate different forms of energy.	
PO 1. Demonstrate that light can be: <ul style="list-style-type: none"> • reflected (with mirrors) • refracted (with prisms) • absorbed (by dark surfaces) 	SE/TE: 42-45, 58, 59-63 TE only: 62 (Science Notebook)
PO 2. Describe how light behaves on striking objects that are: <ul style="list-style-type: none"> • transparent (clear plastic) • translucent (waxed paper) • opaque (cardboard) 	SE/TE: 42, 58, 60-61 TE Only: 38D (Did You Know?)
PO 3. Demonstrate that vibrating objects produce sound.	SE/TE: 52, 70, 71-75
PO 4. Demonstrate that the pitch of a sound depends on the rate of the vibration (e.g., a long rubber band has a lower pitch than a short rubber band).	SE/TE: 70, 74-75 TE Only: 74 (Differentiated Instruction)
Strand 6: Earth and Space Science	
Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.	
Concept 1: Properties of Earth Materials	
Identify the basic properties of Earth materials.	
PO 1. Identify the layers of the Earth: <ul style="list-style-type: none"> • crust • mantle • core (inner and outer) 	The Interactive Science program shows a cross-sectional figure indicating the path taken by magma to the earth's surface and defines the Earth's crust in Grade 4, Lessons 6.2 and 6.3.
PO 2. Describe the different types of rocks and how they are formed: <ul style="list-style-type: none"> • metamorphic • igneous • sedimentary 	The Interactive Science program discusses rock classification in Grade 4, Chapter 6, Lesson 2.
PO 3. Classify rocks based on the following physical properties: <ul style="list-style-type: none"> • color • texture 	The Interactive Science program discusses mineral and rock classification in Grade 4, Lessons 6.1 and 6.2.

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 3, ©2016
PO 4. Describe fossils as a record of past life forms.	SE/TE: 225-227 TE only: 245e
PO 5. Describe how fossils are formed.	SE/TE: 224, 225
PO 6. Describe ways humans use Earth materials (e.g., fuel, building materials, growing food).	The <i>Interactive Science</i> program discusses the use of various Earth materials in Grade 4, Chapter 6.
Concept 2: Objects in the Sky Identify objects in the sky.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 3: Changes in the Earth and Sky Understand characteristics of weather conditions and climate.	
No performance objectives at this grade level	No performance objectives at this grade level

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 4, ©2016
Grade 4	
Strand 1: Inquiry Process	
Inquiry Process establishes the basis for students’ learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.	
Concept 1: Observations, Questions, and Hypotheses	
Observe, ask questions, and make predictions.	
PO 1. Differentiate inferences from observations.	SE/TE: 2, 28, 34-35, 87, 89, 95, 97, 136, 137, 161, 188, 212-213, 254, 272, 326, 327 (Lightning Lab), 329 (#13), 340 (#5) TE only: 122, 124, 128, 130, 132, 138, 184, 227, 296C (Teaching Students to Think Like Scientists), 326 (Science Notebook), 329b (#1, 5, & 6)
PO 2. Formulate a relevant question through observations that can be tested by an investigation. (See M04-S2C1-01)	SE/TE: TE only: 35d, 97d, 161d, 213d, 227 (Possible Extensions), 279d, 295a, 304, 331d, 365d
PO 3. Formulate predictions in the realm of science based on observed cause and effect relationships.	SE/TE: 80, 92, 102 (#4), 106, 136, 224, 317, 364-365 TE only: 35c, 97c, 136, 138, 161c, 185, 190, 213c, 256, 279c, 331c, 356 (Lab Support), 365c
PO 4. Locate information (e.g., book, article, website) related to an investigation. (See W04-S3C6-01 and R04-S3C1-05)	SE/TE: 229 (Research Animal Instincts), 341, 380 (Write a Report) TE only: 86 (21 st Century Learning), 89 (Differentiated Instruction, Science—Social Studies), 93 (Science—Social Studies), 111d (ELA), 140 (21 st Century Learning), 175 (SEP), 184 (21 st Century Learning), 196 (21 st Century Learning), 205 (21 st Century Learning), 229a, 229d, 271 (21 st Century Learning), 295a, 295c (ELA/Literacy), 295d, 306 (Science Notebook), 321 (Differentiated Instruction), 358 (21 st Century Learning)

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 4, ©2016
Concept 2: Scientific Testing (Investigating and Modeling)	
Participate in planning and conducting investigations, and recording data.	
<i>PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry.</i>	SE/TE: 34, 80, 92, 96-97, 160, 212-213, 226, 278, 292, 312-313 TE only: 2, 28, 83, 97a, 114, 117, 161a, 179, 213a, 254 (Lab Support), 291, 295a, 301, 313b (#5), 331a, 341 (Science Notebook), 344, 347, 364, 365a
PO 2. Plan a simple investigation that identifies the variables to be controlled.	SE/TE: 106-109, 235-237, 314, 330-331 TE only: 35d, 97d, 161d, 213d, 279d, 295a, 331d, 365d
PO 3. Conduct controlled investigations (e.g., related to erosion, plant life cycles, weather, magnetism) in life, physical, and Earth and space sciences.	SE/TE: 28, 34-35, 80, 82-85, 92, 96-97, 106-109, 116-119, 136, 142, 160-161, 178-181, 194, 212-213, 224-227, 236-327, 254, 272, 278-279, 290-293, 314, 322, 330-331, 344, 356, 364-365, 374-379 TE only: 35a-35d, 97a-97d, 111d, 161a-161d, 213a-213d, 278a-278d, 295a, 295c, 331a-331d, 365a-365d
PO 4. Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). (See M04-S4C4-03 and M04-S4C4-07)	SE/TE: 28, 34-35, 83-84, 108, 117-118, 160-161, 194, 236, 266, 279, 291-292, 311 (Lightning Lab), 330-331, 344, 356 TE only: 111d, 295a, 295b (Mathematics), 296C (Scientific Measurement)
<i>PO 5. Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).</i> (See W04-S3C2-01 and W04-S3C3-01)	SE/TE: 2, 28, 35, 80, 83-84, 92, 96, 108, 114, 118, 142, 161, 180-181, 188, 194, 213, 225-226, 236, 254, 272, 279, 292-293, 314, 322, 331, 344, 349, 356, 365, 375-377 TE only: 97a, 111d, 123 (21 st Century Learning), 229a, 229d, 295a, 295c, 295d
Concept 3: Analysis and Conclusions	
Organize and analyze data; compare to predictions.	
PO 1. Analyze data obtained in a scientific investigation to identify trends. (See M04-S2C1-03)	SE/TE: 28, 35, 84-85, 109, 136, 161, 194, 213, 226-227, 237, 279, 293, 322, 331, 356, 365 TE only: 229a, 229d, 295a, 295b, 295c, 295d

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 4, ©2016
PO 2. Formulate conclusions based upon identified trends in data. (See M04-S2C1-03)	SE/TE: 28, 35, 85, 109, 136, 161, 194, 213, 226-227, 237, 279, 293, 322, 331, 356, 365 TE only: 229a, 295a, 295c
PO 3. Determine that data collected is consistent with the formulated question.	SE/TE: 30, 48, 64, 69, 85, 136, 142, 161, 254, 279 TE only: 69c, 69d, 161c
PO 4. Determine whether the data supports the prediction for an investigation.	SE/TE: 92, 97, 109, 161, 227, 293, 365 TE only: 35c, 213c, 279c, 331c, 365c
PO 5. Develop new questions and predictions based upon the data collected in the investigation.	TE only: 109 (Possible Extensions), 227 (Possible Extensions)
Concept 4: Communication Communicate results of investigations.	
PO 1. Communicate verbally or in writing the results of an inquiry. (See W04-S3C3-01)	SE/TE: 2, 28, 35, 80, 84, 92, 97, 109, 119, 136, 142, 161, 181, 194, 213, 227, 237, 254, 272, 279, 293, 303, 308, 314, 322, 331, 344, 356, 365, 378-379 TE only: 229a, 229c, 229d, 295a, 295b, 295c, 295d
PO 2. Choose an appropriate graphic representation for collected data: <ul style="list-style-type: none"> • bar graph • line graph • Venn diagram • model (See M04-S2C1-02)	SE/TE: 85, 109 (Technology Tools) TE only: 324 (21 st Century Learning), 325 (Decide)
PO 3. Communicate with other groups or individuals to compare the results of a common investigation.	SE/TE: 109, 119, 120, 227, 298, 306 (Lightning Lab), 311 (Lightning Lab), 321 (At-Home Lab), 327, 331, 344, 349, 365 TE only: 52 (Post-Activity Discussion), 84 (Post-Activity Discussion), 111e (ELA/Literacy & Procedure), 111f (ELA/Literacy & Procedure), 118 (Post-Activity Discussion), 180 (Post-Activity Discussion), 229a (Procedure), 229c (ELA/Literacy & Procedure), 236 (Post-Activity Discussion), 295d (ELA/Literacy & Procedure), 302 (Post-Activity Discussion), 348 (Post-Activity Discussion)
Strand 2: History and Nature of Science	

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 4, ©2016
<p>Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.</p>	
<p>Concept 1: History of Science as a Human Endeavor Identify individual and cultural contributions to scientific knowledge.</p>	
<p><i>PO 1. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Margaret Mead [anthropologist], supports Strand 4; Nikola Tesla [engineer, inventor] supports Strand 5; Michael Faraday [scientist], supports Strand 5; Benjamin Franklin [scientist], supports Strand 5).</i></p>	<p>SE/TE: 149, 214, 350 TE only: 89 (Differentiated Instruction, Science-Social Studies), 296G-296H, 342C</p>
<p><i>PO 2. Describe science-related career opportunities.</i></p>	<p>SE/TE: 98, 162, 223, 350</p>
<p>Concept 2: Nature of Scientific Knowledge Understand how science is a process for generating knowledge.</p>	
<p>PO 1. Explain the role of experimentation in scientific inquiry.</p>	<p>SE/TE: 314, 315-321, 322, 323-329 TE only: 321 (Differentiated Instruction)</p>
<p>PO 2. Describe the interaction of components in a system (e.g., flashlight, radio).</p>	<p>SE/TE: 90-91, 92, 96-97, 273-277 TE only: 97b-97d</p>
<p>PO 3. Explain various ways scientists generate ideas (e.g., observation, experiment, collaboration, theoretical and mathematical models).</p>	<p>SE/TE: 315-321 TE only: 321 (Differentiated Instruction)</p>
<p>Strand 3: Science in Personal and Social Perspectives</p>	

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 4, ©2016
<p>Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.</p>	
<p>Concept 1: Changes in Environments Describe the interactions between human populations, natural hazards, and the environment.</p>	
<p>PO 1. Describe how natural events and human activities have positive and negative impacts on environments (e.g., fire, floods, pollution, dams).</p>	<p>SE/TE: 162, 188-193, 214, 229 (Make a Presentation), 260-265, 289, 295 (Create a Booklet), 362, 373 TE only: 174D, 186 (Differentiated Instruction), 192 (Common Misconception)</p>
<p>PO 2. Evaluate the consequences of environmental occurrences that happen either rapidly (e.g., fire, flood, tornado) or over a long period of time (e.g., drought, melting ice caps, the greenhouse effect, erosion).</p>	<p>SE/TE: 260-265 TE only: 174D, 295c</p>
<p>Concept 2: Science and Technology in Society Understand the impact of technology.</p>	
<p>PO 1. Describe how science and technology (e.g., computers, air conditioning, medicine) have improved the lives of many people.</p>	<p>SE/TE: 332, 350-355 TE only: 296G-296H, 342G-342H, 352 (21ST Century Learning), 355a</p>
<p>PO 2. Describe benefits (e.g., easy communications, rapid transportation) and risks (e.g., pollution, destruction of natural resources) related to the use of technology.</p>	<p>SE/TE: 350, 351-355 TE only: 296G-296H, 342D</p>
<p><i>PO 3. Design and construct a technological solution to a common problem or need using common materials.</i></p>	<p>SE/TE: 4-7, 82-85, 300-303, 374-379, 380 (Design a Package)</p>
<p>Strand 4: Life Science</p>	

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Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 4, ©2016
Life Science expands students' biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.	
Concept 1: Characteristics of Organisms	
Understand that basic structures in plants and animals serve a function.	
PO 1. Compare structures in plants (e.g., roots, stems, leaves, flowers) and animals (e.g., muscles, bones, nerves) that serve different functions in growth and survival.	SE/TE: 138-141, 142-143 (Envision It!), 144-145, 187 TE Only: 112C (What Do Leaves and Stems Do?), 229a
PO 2. Classify animals by identifiable group characteristics: <ul style="list-style-type: none"> • vertebrates – mammals, birds, fish, reptiles, amphibians • invertebrates – insects, arachnids 	SE/TE: 124-127 TE only: 124 (Common Misconception), 125 (Differentiated Instruction), 126 (Content Refresher)
Concept 2: Life Cycles	
Understand the life cycles of plants and animals.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 3: Organisms and Environments	
Understand the relationships among various organisms and their environment.	
PO 1. Describe ways various resources (e.g., air, water, plants, animals, soil) are utilized to meet the needs of a population.	SE/TE: 196-199
PO 2. Differentiate renewable resources from nonrenewable resources.	SE/TE: 196-199, 220 (#5) TE only: 197 (Content Refresher), 198 (Content Refresher, Science Notebook), 229d
PO 3. Analyze the effect that limited resources (e.g., natural gas, minerals) may have on an environment.	SE/TE: 198-199 TE only: 198 (Content Refresher, Science Notebook), 229d
PO 4. Describe ways in which resources can be conserved (e.g., by reducing, reusing, recycling, finding substitutes).	SE/TE: 192 (Go Green), 199, 300

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 4, ©2016
Concept 4: Diversity, Adaptation, and Behavior	
Identify plant and animal adaptations.	
PO 1. Recognize that successful characteristics of populations are inherited traits that are favorable in a particular environment.	SE/TE: 142-147, 150-153, 156-157, 229 (Research Animal Instincts) TE only: 144 (Science Notebook), 145 (Content Refresher), 146 (Science Notebook)
PO 2. Give examples of adaptations that allow plants and animals to survive. <ul style="list-style-type: none"> • camouflage – horned lizards, coyotes • mimicry – Monarch and Viceroy butterflies • physical – cactus spines • mutualism – species of acacia that harbor ants, which repel other harmful insects 	SE/TE: 143, 144, 146, 147, 150, 152, 153, 157, 170 (#4), 171 (#5), 228 (Write a Biography) TE only: 144 (Science Notebook), 145 (Content Refresher), 146 (Science Notebook), 151 (Differentiated Instruction)
Strand 5: Physical Science	
Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.	
Concept 1: Properties of Objects and Materials	
Classify objects and materials by their observable properties.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 2: Position and Motion of Objects	
Understand spatial relationships and the way objects move.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 3: Energy and Magnetism	
Investigate different forms of energy.	
PO 1. Demonstrate that electricity flowing in circuits can produce light, heat, sound, and magnetic effects.	SE/TE: 80, 92, 93-95, 96-97, 103 (#7, #9), 111 (Design a Device) TE only: 90 (Science Notebook), 90 (Content Refresher), 97a-97d, 111d
PO 2. Construct series and parallel electric circuits.	SE/TE: 80, 90-91, 92, 96-97, 102 (#2, #4), 111 (Design a Device) TE only: 90 (Science Notebook), 97a-97d, 111d

**A Correlation of Interactive Science, ©2016 to the
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Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 4, ©2016
PO 3. Explain the purpose of conductors and insulators in various practical applications.	SE/TE: 82-85, 88-89, 88 (Lightning Lab), 106-109 TE only: 82-83 (Background), 103b (#2, #10)
PO 4. Investigate the characteristics of magnets (e.g., opposite poles attract, like poles repel, the force between two magnet poles depends on the distance between them).	The <i>Interactive Science</i> program addresses the properties of magnets in Grade 3, in the Chapter 2 Try It! Activity and in Lesson 2.2.
PO 5. State cause and effect relationships between magnets and circuitry.	TE Only: 78G, 78H
Strand 6: Earth and Space Science	
Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.	
Concept 1: Properties of Earth Materials Identify the basic properties of Earth materials.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 2: Earth's Processes and Systems Understand the processes acting on the Earth and their interaction with the Earth systems.	
PO 1. Identify the Earth processes that cause erosion.	SE/TE: 258, 258 (At-Home Lab) TE only: 258 (Science Notebook & Common Misconception)
PO 2. Describe how currents and wind cause erosion and land changes.	SE/TE: 258
PO 3. Describe the role that water plays in the following processes that alter the Earth's surface features: <ul style="list-style-type: none"> • erosion • deposition • weathering 	SE/TE: 256-259, 258 (At-Home Lab) TE only: 257 (Content Refresher & Science Notebook), 258 (Science Notebook & Common Misconception)
PO 4. Compare rapid and slow processes that change the Earth's surface, including: <ul style="list-style-type: none"> • rapid – earthquakes, volcanoes, floods • slow – wind, weathering 	SE/TE: 256-259, 258 (At-Home Lab), 261-265 TE only: 257 (Content Refresher & Science Notebook), 258 (Science Notebook & Common Misconception)

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 4, ©2016
PO 5. Identify the Earth events that cause changes in atmospheric conditions (e.g., volcanic eruptions, forest fires).	SE/TE: 262, 265
PO 6. Analyze evidence that indicates life and environmental conditions have changed (e.g., tree rings, fish fossils in desert regions, ice cores).	SE/TE: 209 TE only: 209 (Content Refresher & Science—Writing), 229c
Concept 3: Changes in the Earth and Sky	
Understand characteristics of weather conditions and climate.	
PO 1. Identify the sources of water within an environment (e.g., ground water, surface water, atmospheric water, glaciers).	SE/TE: 268-270
PO 2. Describe the distribution of water on the Earth’s surface.	SE/TE: 266, 267-270, 287 (#6) TE only: 269 (Science—Social Studies)
PO 3. Differentiate between weather and climate as they relate to the southwestern United States.	For supporting content, please see SE/TE: 277 TE Only: 277 (Common Misconception)
PO 4. Measure changes in weather (e.g., precipitation, wind speed, barometric pressure).	The Interactive Science program discusses and requires the measurement of changes in weather in Grade 3, Lessons 6.2 and 6.3.
PO 5. Interpret the symbols on a weather map or chart to identify the following: <ul style="list-style-type: none"> • temperatures • fronts • precipitation 	TE Only: 276 (Differentiated Instruction)
PO 6. Compare weather conditions in various locations (e.g., regions of Arizona, various U.S. cities, coastal vs. interior geographical regions).	The Interactive Science program covers weather conditions in various locations in Grade 3, Lessons 6.2, 6.3, and 6.4.

**A Correlation of Interactive Science, ©2016 to the
Arizona Science Standards Articulated by Grade Level**

Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 5, ©2016
Grade 5	
Strand 1: Inquiry Process	
Inquiry Process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.	
Concept 1: Observations, Questions, and Hypotheses	
Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.	
<i>PO 1. Formulate a relevant question through observations that can be tested by an investigation. (See M05-S2C1-01)</i>	SE/TE: 98 (Plan an Investigation), 99 (Investigate Mixtures) TE only: 41d, 83d, 133d, 179d
<i>PO 2. Formulate predictions in the realm of science based on observed cause and effect relationships.</i>	SE/TE: 66, 71, 82, 98 (Plan an Investigation), 102, 279, 313 (Landforms and Weather), 330 (At-Home Lab), 368, 371, 385 TE only: 28 (Lab Support), 38, 75, 79, 96, 99b, 99d, 99e, 111, 117, 128, 133c, 152, 167, 172, 179c, 192, 258, 266, 272, 276, 291, 297c, 310, 315 (SEP), 337, 344, 349c, 389c
<i>PO 3. Locate information (e.g., book, article, website) related to an investigation. (See W05-S3C6-01 and R05-S3C1-05)</i>	SE/TE: 26 (Do the Math #3), 176 (Go Green), 195 (Local Resources & Create a Food Web Model), 313 (Landforms and Weather), 292 (At-Home Lab), TE only: 99a, 99b (ELA), 99d, 99e (ELA), 130 (Differentiated Instruction), 195a, 195b, 195c, 195d, 297a, 313 (Landforms and Weather) 313a, 313b, 313c, 313d
Concept 2: Scientific Testing (Investigating and Modeling)	
Design and conduct controlled investigations.	
<i>PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry.</i>	SE/TE: 16, 40, 99, 308, 340, 348 TE only: 5, 34, 41a, 57, 83a, 99d, 102, 105, 133a, 144, 147, 178, 179a, 191, 261, 297a, 314D (Lab Safety), 319, 340 (Science Writing & Content Refresher), 343b (#5), 344, 349a, 357a (#4), 362, 365, 388, 389a

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Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 5, ©2016
<i>PO 2. Plan a simple investigation that identifies the variables to be controlled.</i>	SE/TE: 98 (Plan an Investigation), 312 (Crater Formation, Rain Gauge), 313 (Landforms and Weather) TE only: 41d, 83d, 99d, 133d, 165a, 297d, 349d, 389d
PO 3. Conduct simple investigations (e.g., related to forces and motion, Earth processes) based on student-developed questions in life, physical, and Earth and space sciences.	TE only: 41d, 83d, 133d, 313a, 179d, 243d, 297d, 349d, 389d
<i>PO 4. Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). (See M05-S4C4-01)</i>	SE/TE: 2, 5, 40-41, 58, 82-83, 96, 99, 106, 178, 336, 366, 400 TE only: 41b-41d, 83b-83d, 99a (Mathematics), 99b
<i>PO 5. Record data in an organized and appropriate format (e.g., t-chart, table, list, written log). (See W05-S3C2-01 and W05-S3C3-01)</i>	SE/TE: 2, 4-7, 16, 22, 56-59, 66, 78, 82-83, 96-97, 99, 102, 106-107, 114, 120, 133, 144, 148, 158, 174, 178, 190-192, 243, 258, 262-263, 276, 290, 297, 310, 321, 328, 336, 344, 349, 362, 366, 400, 402 TE only: 83b-83d, 99b, 99c, 133b-133d, 179b-179d, 313b, 313d, 349b-349d, 389c-389d
Concept 3: Analysis and Conclusions Analyze and interpret data to explain correlations and results; formulate new questions.	
PO 1. Analyze data obtained in a scientific investigation to identify trends and form conclusions. (See M05-S2C1-03)	SE/TE: 2, 56-59, 82-83, 97, 102, 120, 149, 178, 193, 243, 310, 321, 328, 362, 368 TE only: 33a, 83c, 133c, 243b, 243c, 269a, 297c, 349b
PO 2. Analyze whether the data is consistent with the proposed explanation that motivated the investigation.	SE/TE: 28, 54, 66, 74, 94-97, 102, 243, 290, 311 TE only: 77a, 83c, 99b, 133c
PO 3. Evaluate the reasonableness of the outcome of an investigation.	SE/TE: 7, 54, 59, 83, 97, 106-107, 120, 179, 263

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Arizona Science Standards Articulated by Grade Level	Interactive Science Grade 5, ©2016
PO 4. Develop new investigations and predictions based on questions that arise from the findings of an investigation.	SE/TE: 41, 98 (Plan an Investigation), 102 TE only: 41c, 41d, 83c, 83d, 97 (Possible Extensions), 99b, 99e, 133c, 133d, 197c, 197d, 243c, 243d, 258, 276, 297c, 297d, 311 (Possible Extensions), 349c, 349d, 368 (Lab Support), 389c, 389d
PO 5. Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object).	SE/TE: 94-97, 276, 308, 312 (Crater Formation, Rain Gauge) TE only: 313c
Concept 4: Communication Communicate results of investigations.	
<i>PO 1. Communicate verbally or in writing the results of an inquiry. (See W05-S3C3-01)</i>	SE/TE: 2, 4-7, 16, 22, 28, 56-59, 66, 74, 78, 82-83, 99, 102, 107, 114, 120, 133, 144, 149, 158, 174, 179, 193, 258, 263, 276, 284, 290, 297, 311, 320-321, 328, 336, 344, 349, 362, 366, 368, 402 TE only: 41b-41d, 83b-83d, 133b-133d
<i>PO 2. Choose an appropriate graphic representation for collected data:</i> <ul style="list-style-type: none"> • <i>bar graph</i> • <i>line graph</i> • <i>Venn diagram</i> • <i>model</i> <i>(See M05-S2C1-02)</i>	SE/TE: 97, 179 TE only: 83a, 83d, 313b, 313d
<i>PO 3. Communicate with other groups or individuals to compare the results of a common investigation.</i>	SE/TE: 66, 97, 102, 193, 320 TE only: 6 (Post-Activity Discussion), 41a (Scaffolded Inquiry Support: Guided), 58 (Post-Activity Discussion), 99a, 106 (Post-Activity Discussion), 133a (Scaffolded Inquiry Support: Guided), 148 (Post-Activity Discussion), 179a (Scaffolded Inquiry Support: Guided), 195c, 262 (Post-Activity Discussion), 288 (21 st Century Learning), 313a, 313b, 313d, 320 (Post-Activity Discussion), 366 (Post-Activity Discussion), 389a (Scaffolded Inquiry Support: Guided)

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Strand 2: History and Nature of Science	
Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.	
Concept 1: History of Science as a Human Endeavor	
Identify individual, cultural, and technological contributions to scientific knowledge.	
<i>PO 1. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Percy Lavon Julian [scientist], supports Strand 4; Niels Bohr [scientist], supports Strand 5; Edwin Hubble [scientist], supports Strand 6).</i>	SE/TE: 84, 141, 286-287, 369, 370, 386 TE only: 12 (Science – Social Studies), 116 (Content Refresher), 293, 360 D (Did You Know?), 371 (Science – Social Studies), 372 (Differentiated Learning)
Concept 2: Nature of Scientific Knowledge	
Understand how science is a process for generating knowledge.	
PO 1. Provide examples that support the premise that science is an ongoing process that changes in response to new information and discoveries (e.g., space exploration, medical advances).	SE/TE: 324, 345-347, 379 TE only: 10, (Content Refresher)
PO 2. Explain the cycle by which new scientific knowledge generates new scientific inquiry.	SE/TE: 346-347
PO 3. Describe how scientific knowledge is subject to modification and/or change as new information/technology challenges prevailing theories.	SE/TE: 324, 370, 372 TE only: 10, (Content Refresher), 314C (Connecting Science and Technology)
PO 4. Compare collaborative approaches that scientists use for investigations (e.g., teams, individual with peer review).	For supporting content, please see SE/TE: 324, 326, 347, 357 (#10)
PO 5. Describe qualities of the scientists' habits of mind (e.g., openness, skepticism, integrity, tolerance).	SE/TE: 343, 346-347

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Strand 3: Science in Personal and Social Perspectives	
Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.	
Concept 1: Changes in Environments	
Describe the interactions between human populations, natural hazards, and the environment.	
PO 1. Explain the impacts of natural hazards on habitats (e.g., global warming, floods, asteroid or large meteor impacts).	SE/TE: 166, 168, 170-171, 175-176, 195 (Local Resources) TE only: 292 (Content Refresher)
PO 2. Propose a solution, resource, or product that addresses a specific human, animal, or habitat need.	SE/TE: 4-7, 104-107, 146-149, 195 (Local Resources), 260-263, 318-321, 364-367 TE only: 195d
PO 3. Evaluate the possible strengths and weaknesses of a proposed solution to a specific problem relevant to human, animal, or habitat needs.	SE/TE: 7, 59, 107, 149, 195, 263, 321, 367
Concept 2: Science and Technology in Society	
Develop viable solutions to a need or problem.	
PO 1. Describe the relationship between science and technology.	SE/TE: 369-373, 374, 375-379 TE only: 379 (Content Refresher)
PO 2. Explain how scientific knowledge, skills, and technological capabilities are integral to a variety of careers.	SE/TE: 134, , 370-371, 397 TE only: 134 (Content Refresher), 370 (Content Refresher), 371 (Differentiated Instruction)
PO 3. <i>Design and construct a technological solution to a common problem or need using common materials.</i>	SE/TE: 104-107, 146-149, 318-321

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Strand 4: Life Science	
Life Science expands students' biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.	
Concept 1: Structure and Function in Living Systems	
Understand the relationships between structures and functions of organisms.	
PO 1. Identify the functions and parts of the skeletal system: <ul style="list-style-type: none"> • protection – rib cage, cranium • support – vertebrae • movement – pelvis, femur, hip 	For supporting content, please see SE/TE: 110
PO 2. Identify the following types of muscles: <ul style="list-style-type: none"> • cardiac – heart • smooth – stomach • skeletal – biceps 	For supporting content, please see SE/TE: 364-367
PO 3. Identify the functions and parts of the nervous system: <ul style="list-style-type: none"> • control center – brain • relay mechanism – spinal cord • transport messages – nerves 	For supporting content, please see SE/TE: 375, 377
PO 4. Distinguish between voluntary and involuntary responses.	This standard falls outside the scope of the Interactive Science Grade 5 program.
Concept 2: Reproduction and Heredity	
Understand the basic principles of heredity.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 3: Populations of Organisms in an Ecosystem	
Analyze the relationships among various organisms and their environment.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 4: Diversity, Adaptation, and Behavior	
Identify structural and behavioral adaptations.	
No performance objectives at this grade level	No performance objectives at this grade level

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Strand 5: Physical Science	
Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.	
Concept 1: Properties and Changes of Properties in Matter	
Understand physical and chemical properties of matter.	
PO 1. Identify that matter is made of smaller units called: <ul style="list-style-type: none"> • molecules (e.g., H₂O, CO₂) • atoms (e.g., H, N, Na) 	SE/TE: 12-15 TE only: 11 (Science Notebook), 13 (Content Refresher), 15 (Content Refresher), 99a
PO 2. Distinguish between mixtures and compounds.	SE/TE: 14, 29-33, 30 (At-Home Lab), 40-41, 99 TE only: 30 (Science Notebook), 31 (Science Notebook), 33 (Common Misconceptions), 41a-41d, 99, 99d
PO 3. Describe changes of matter: <ul style="list-style-type: none"> • physical – cutting wood, ripping paper, freezing water • chemical – burning of wood, rusting of iron, milk turning sour 	SE/TE: 34, 35-39, 38 (Lightning Lab) TE only: 36 (Science Notebook), 99b
Concept 2: Motion and Forces	
Understand the relationship between force and motion.	
PO 1. Describe the following forces: <ul style="list-style-type: none"> • gravity • friction 	SE/TE: 62-65, 64 (At-Home Lab) TE only: 62 (Science—Writing & Differentiated Instruction), 63 (Common Misconception), 64 (Content Refresher), 76 (Science Notebook), 99e
PO 2. Describe the various effects forces can have on an object (e.g., cause motion, halt motion, change direction of motion, cause deformation).	SE/TE: 61, 66, 67-73, 74, 75-77, 76 (Lightning Lab) TE only: 68 (Science Notebook & Content Refresher), 69 (Differentiated Instruction), 70 (Science Notebook), 72 (Differentiated Instruction), 73 (Content Refresher), 77 (21 st Century Learning)

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PO 3. Examine forces and motion through investigations using simple machines (e.g., wedge, plane, wheel and axle, pulley, lever).	SE/TE: 98, 364-365
PO 4. Demonstrate effects of variables on an object’s motion (e.g., incline angle, friction, applied forces).	SE/TE: 56-59, 66, 82-83, 94-97, TE only: 82a-82d
Concept 3: Transfer of Energy Understand that energy can be stored and transferred.	
No performance objectives at this grade level	No performance objectives at this grade level
Strand 6: Earth and Space Science	
Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.	
Concept 1: Structure of the Earth Describe the composition and interactions between the structure of the Earth and its atmosphere.	
No performance objectives at this grade level	No performance objectives at this grade level
Concept 2: Earth’s Processes and Systems Understand the processes acting on the Earth and their interaction with the Earth systems.	
PO 1. Describe how the Moon’s appearance changes during a four-week lunar cycle.	SE/TE: 266-267 TE only: 281 (Science Notebook)
PO 2. Describe how Earth’s rotation results in day and night at any particular location.	SE/TE: 266, 267 (Lightning Lab), 281 TE only: 266 (Science—Writing) See also Check-In 3 of the online Quest activity “Plan a Trip Around the World of Patterns” for the phases of the moon.
PO 3. Distinguish between revolution and rotation.	SE/TE: 266-267 TE only: 266 (Science—Writing)
PO 4. Describe the role of gravity as an attractive force between celestial objects.	SE/TE: 267, 278, 281, 291 TE only: 256C-256H

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Concept 3: Earth in the Solar System	
Understand the relationships of the Earth and other objects in the solar system.	
PO 1. Identify the known planets of the solar system.	SE/TE: 278-282, 284, 285-288 TE only: 256D, 294 (Content Refresher)
PO 2. Describe the distinguishing characteristics of the known planets in the solar system.	SE/TE: 259, 278-282, 282 (Lightning Lab), 284, 285-288, 305 (#7-8) TE only: 279 (Common Misconception), 286 (Science Writing), 287 (Content Refresher)
PO 3. Describe various objects in the sky (e.g., asteroids, comets, stars, meteors/shooting stars).	SE/TE: 290, 291-295, 292 (Lightning Lab), 305 (#9) TE only: 278 (Content Refresher), 292 (Content Refresher), 294 (Content Refresher)
PO 4. Describe the change in position and motion of the following objects in the sky over time: <ul style="list-style-type: none"> • real motion – Moon, planets • apparent motion (due to the motion of the Earth) – Sun, Moon, stars 	SE/TE: 266, 270, 275, 304 (#2) TE only: 313d
PO 5. Explain the apparent motion of the Sun and stars.	SE/TE: 258, 266, 270, 275 TE only: 313d
PO 6. Describe efforts to explore space (e.g., Apollo missions, space shuttles, Hubble space telescope, space probes).	SE/TE: 283, 298, 307, 397 TE only: 256D, 279 (Science-Writing), 278 (Content Refresher), 287 (Content Refresher), 289 (Content Refresher)