Carolina™ Curriculum Correlation to Arizona Science Standards Articulated by Grade Level K-8

CAROLINA

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Carolina™ Curriculum Correlation to Arizona Science Standards

Unit Recommendations for Arizona		
GRADE	The STC Program™	Building Blocks of Science / GEMS / GEMS Sequences
Kindergarten		• Bubble Festival • Terrarium Habitats
1st Grade	• Organisms • Soils • Solids and Liquids	• Sky Watchers
2nd Grade	• Changes • The Life Cycle of Butterflies • Weather	
3rd Grade	• Plant Growth and Development • Rocks and Minerals • Sound	
4th Grade	• Ecosystems • Electric Circuits • Land and Water	
5th Grade	• Measuring Time • Motion and Design	• Space Science Sequence
6th Grade	• Microworlds • Electrical Energy and Circuit Design	
7th Grade	• Catastrophic Events • Earth in Space	
8th Grade	• Energy, Machines, and Motion • Organisms–From Macro to Micro • Properties of Matter	

THE CURRICULUM

The STC PROGRAM™ is made up of 2 research-based, inquiry-centered curriculums:

- Science and Technology for Children® (STC®) for grades K–6; and
- Science and Technology Concepts for Middle Schools™ (STC/MS™) for grades 6–8

Building Blocks of Science™ is a K-5 supplementary science curriculum that can be used as stand-alone instruction.

Great Explorations in Math and Science® (GEMS®) Space Science Sequence is a research-based 3-5 science curriculum that teach fundamental concepts in space science.

GEMS Kits® are standards-based PreK-8 math and science supplemental kits. The kits have been tested for specific grade levels but can also be used at lower or higher levels.

Grade K - Science
Arizona Academic Standards

STRAND		**AZ.SC00-S1.**	**Inquiry Process**
CONCEPT		**SC00-S1C1.**	Observations, Questions, and Hypotheses: Observe, ask questions, and make predictions.
PERFORMANCE OBJECTIVE		**SC00-S1C1-03.**	Predict results of an investigation based on life, physical, and Earth and space sciences (e.g., the five senses, changes in weather). • **Bubble Festival** • TG: Act05 (pp80-85)
STRAND		**AZ.SC00-S1.**	**Inquiry Process**
CONCEPT		**SC00-S1C2.**	Scientific Testing (Investigating and Modeling): Participate in planning and conducting investigations, and recording data.
PERFORMANCE OBJECTIVE		**SC00-S1C2-01.**	Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry. • **Bubble Festival** • TG: Act01-12 (pp54-124)
PERFORMANCE OBJECTIVE		**SC00-S1C2-02.**	Participate in guided investigations in life, physical, and Earth and space sciences. • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Terrarium Habitats** • TG: Act01-5 (pp5-48)
PERFORMANCE OBJECTIVE		**SC00-S1C2-03.**	Perform simple measurements using non-standard units of measure to collect data. • **Bubble Festival** • TG: Act02-3 (pp59-73), Act06 (pp86-91)
STRAND		**AZ.SC00-S1.**	**Inquiry Process**
CONCEPT		**SC00-S1C4.**	Communication: Communicate results of investigations.
PERFORMANCE OBJECTIVE		**SC00-S1C4-01.**	Communicate observations with pictographs, pictures, models, and/or words (See M00-S2C1-02). • **Bubble Festival** • TG: Act04 (pp74-79)
PERFORMANCE OBJECTIVE		**SC00-S1C4-02.**	Communicate with other groups to describe the results of an investigation. (See LS-R3 and LS-R5). • **Bubble Festival** • TG: Act01-12 (pp54-124)
STRAND		**AZ.SC00-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		**SC00-S3C2.**	Science and Technology in Society: Understand the impact of technology.
PERFORMANCE OBJECTIVE		**SC00-S3C2-01.**	Describe how simple tools (e.g., scissors, pencils, paper clips, hammers) can make tasks easier. • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Terrarium Habitats** • TG: Act01-5 (pp5-48)

STRAND		**AZ.SC00-S4.**	**Life Science**
CONCEPT		**SC00-S4C3.**	Organisms and Environments: Understand the relationships among various organisms and their environment.
PERFORMANCE OBJECTIVE		**SC00-S4C3-01.**	Identify some plants and animals that exist in the local environment. • **Terrarium Habitats** • TG: Act04-5(pp33-48)
PERFORMANCE OBJECTIVE		**SC00-S4C3-02.**	Identify that plants and animals need the following to grow and survive: Food, water, air, space. • **Terrarium Habitats** • TG: Act01-2 (pp5-21.)
PERFORMANCE OBJECTIVE		**SC00-S4C3-03.**	Describe changes observed in a small system (e.g., ant farm, plant terrarium, aquarium). • **Terrarium Habitats** • TG: Act01-5 (pp5-48)
STRAND		**AZ.SC00-S5.**	**Physical Science**
CONCEPT		**SC00-S5C1.**	Properties of Objects and Materials: Classify objects and materials by their observable properties.
PERFORMANCE OBJECTIVE		**SC00-S5C1-01.**	Identify the following observable properties of objects using the senses: shape, texture, size, color (See M00-S4C1-02 and M00-S4C1-03). • **Bubble Festival** • TG: Act01-3 (pp54-73), Act05 (pp80-85), Act09 (pp102-107) • Act11 (pp114-118)
PERFORMANCE OBJECTIVE		**SC00-S5C1-02.**	Compare objects by the following observable properties: size, color, type of material (See M00-S4C1-02). • **Bubble Festival** • TG: Act05 (pp80-85)
STRAND		**AZ.SC00-S6.**	**Earth and Space Science**
CONCEPT		**SC00-S6C1.**	Properties of Earth Materials: Identify the basic properties of Earth materials.
PERFORMANCE OBJECTIVE		**SC00-S6C1-01.**	Identify rocks, soil, and water as basic Earth materials. • **Terrarium Habitats** • TG: Act01 (pp5-13)

Organisms, Soils, Solids and Liquids

Grade 1 - Science
Arizona Academic Standards

STRAND		**AZ.SC01-S1.**	**Inquiry Process**
CONCEPT		**SC01-S1C1.**	Observations, Questions, and Hypotheses: Observe, ask questions, and make predictions.
PERFORMANCE OBJECTIVE		**SC01-S1C1-01.**	Compare common objects using multiple senses. • **Organisms** • TG: L02 (pp11-20) • **Soils** • TG: L03-5 (pp27-56) • **Solids and Liquids** • TG: L05.Exts (pp43-45)
PERFORMANCE OBJECTIVE		**SC01-S1C1-03.**	Predict results of an investigation based on life, physical, and Earth and space sciences (e.g., animal life cycles, physical properties, Earth materials). • **Organisms** • TG: L03 (pp21-36) • **Soils** • TG: L01 (pp3-16), L02 (pp17-26), L06 (pp57-64), L14 (pp139-148) • **Solids and Liquids** • TG: L04 (pp29-40), L10.Exts (p85), L11.Exts (p92), L12.Exts (p98) • L13-14 (pp101-120), L15.Exts (p124), L16 (pp131-136) • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6)
STRAND		**AZ.SC01-S1.**	**Inquiry Process**
CONCEPT		**SC01-S1C2.**	Scientific Testing (Investigating and Modeling): Participate in planning and conducting investigations, and recording data.
PERFORMANCE OBJECTIVE		**SC01-S1C2-01.**	Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry. • **Organisms** • TG: S-Sec3 (pp19-24) • **Soils** • TG: S-Sec3 (pp12-17) • **Solids and Liquids** • TG: S-Sec3 (pp9-18) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6), Act 03 (pp 1-6), Act 04 (pp 1-7), Act 05 (pp 1-5)
PERFORMANCE OBJECTIVE		**SC01-S1C2-02.**	Participate in guided investigations in life, physical, and Earth and space sciences. • **Organisms** • TG: L02-16 (pp11-178) • **Soils** • TG: L01-16 (pp3-168) • **Solids and Liquids** • TG: L02-16 (pp11-136) • **Building Blocks of Science: Sky Watchers**

			• TG: Act 02 (pp 1-6), Act 03 (pp 1-6), Act 04 (pp 1-7), Act 05 (pp 1-5)
PERFORMANCE OBJECTIVE		**SC01-S1C2-03.**	Use simple tools such as rulers, thermometers, magnifiers, and balances to collect data (U.S. customary units) (See M01-S4C4-07). • **Soils** • TG: L01.Exts (p12), L02-3 (pp17-36), L05-8 (pp45-86), L10-15 (pp97-158) • **Solids and Liquids** • TG: L11 (pp87-94) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6), Act 03 (pp 1-6), Act 04 (pp 1-7), Act 05 (pp 1-5)
PERFORMANCE OBJECTIVE		**SC01-S1C2-04.**	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). • **Organisms** • TG: S-Sec3 (pp19-24) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6), Act 03 (pp 1-6), Act 04 (pp 1-7), Act 05 (pp 1-5)
STRAND		**AZ.SC01-S1.**	**Inquiry Process**
CONCEPT		**SC01-S1C3.**	Analysis and Conclusions: Organize and analyze data; compare to predictions.
PERFORMANCE OBJECTIVE		**SC01-S1C3-01.**	Organize (e.g., compare, classify, and sequence) objects, organisms, and events according to various characteristics (See M01-S4C4-01). • **Organisms** • TG: S-Sec3 (pp19-24) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3), Act 04 (pp 1-7), Act 05 (pp 1-5)
PERFORMANCE OBJECTIVE		**SC01-S1C3-02.**	Compare the results of the investigation to predictions made prior to the investigation. • **Organisms** • TG: S-Sec3 (pp19-24) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6), Act 03 (pp 1-6), Act 04 (pp 1-7), Act 05 (pp 1-5)
STRAND		**AZ.SC01-S1.**	**Inquiry Process**
CONCEPT		**SC01-S1C4.**	Communication: Communicate results of investigations.
PERFORMANCE OBJECTIVE		**SC01-S1C4-01.**	Communicate the results of an investigation using pictures, graphs, models, and/or words. (See M01-S2C1-02 and W01-S3C3-02). • **Organisms** • TG: S-Sec3 (pp19-24) • **Soils**

			• TG: L01-17 (pp3-172) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6), Act 05 (pp 1-5)
PERFORMANCE OBJECTIVE		**SC01-S1C4-02.**	Communicate with other groups to describe the results of an investigation. (See LS-F1). • **Organisms** • TG: S-Sec3 (pp19-24) • **Soils** • TG: L01-17 (pp3-172) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6), Act 03 (pp 1-6), Act 04 (pp 1-7), Act 05 (pp 1-5)
STRAND		**AZ.SC01-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		**SC01-S3C2.**	Science and Technology in Society: Understand the impact of technology.
PERFORMANCE OBJECTIVE		**SC01-S3C2-02.**	Describe how suitable tools (e.g., magnifiers, thermometers) help make better observations and measurements. • **Soils** • TG: L01.Exts (p12), L02-3 (pp17-36), L05-8 (pp45-86), L10-15 (pp97-158) • **Solids and Liquids** • TG: L11 (pp87-94) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6), Act 03 (pp 1-6), Act 04 (pp 1-7), Act 05 (pp 1-5)
STRAND		**AZ.SC01-S4.**	**Life Science**
CONCEPT		**SC01-S4C1.**	Characteristics of Organisms: Understand that basic structures in plants and animals serve a function.
PERFORMANCE OBJECTIVE		**SC01-S4C1-01.**	Identify the following as characteristics of living things: growth and development; reproduction; response to stimulus. • **Organisms** • TG: L03 (pp21-36), L06 (pp65-74), L10.Exts (p115), L11-12 (pp119-134), L16.Exts (pp172-173)
PERFORMANCE OBJECTIVE		**SC01-S4C1-03.**	Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/among different groups of animals. • **Organisms** • TG: L07-8 (pp75-96)
STRAND		**AZ.SC01-S4.**	**Life Science**
CONCEPT		**SC01-S4C2.**	Life Cycles: Understand the life cycles of plants and animals.
PERFORMANCE OBJECTIVE		**SC01-S4C2-01.**	Identify stages of human life (e.g., infancy, adolescence, adulthood).

			• **Organisms** • TG: L16-17 (pp169-182)
STRAND		**AZ.SC01-S4.**	**Life Science**
CONCEPT		**SC01-S4C3.**	Organisms and Environments: Understand the relationships among various organisms and their environment.
PERFORMANCE OBJECTIVE		**SC01-S4C3-01.**	Identify some plants and animals that exist in the local environment. • **Organisms** • TG: L04-6 (pp36-74), L11.Exts (pp122-123), L12.Exts (p131), L13-14 (pp135-154), L15.Exts (pp159-160)
PERFORMANCE OBJECTIVE		**SC01-S4C3-02.**	Compare the habitats (e.g., desert, forest, prairie, water, underground) in which plants and animals live. • **Organisms** • TG: L04 (pp36-52), L13-15 (pp135-168) • **Soils** • TG: L03.Exts (pp32-33), L09.Exts (p92)
PERFORMANCE OBJECTIVE		**SC01-S4C3-03.**	Describe how plants and animals within a habitat are dependent on each other. • **Organisms** • TG: L11-12 (pp119-134), L14.Exts (pp152-153)
STRAND		**AZ.SC01-S5.**	**Physical Science**
CONCEPT		**SC01-S5C1.**	Properties of Objects and Materials: Classify objects and materials by their observable properties.
PERFORMANCE OBJECTIVE		**SC01-S5C1-01.**	Classify objects by the following observable properties: shape, texture, size, color, weight. • **Solids and Liquids** • TG: L02-3 (pp11-28), L05.Exts (pp43-45), L06.Exts (pp51-52) • L09 (pp69-80), L11-12 (pp87-100), L15 (pp121-130)
PERFORMANCE OBJECTIVE		**SC01-S5C1-02.**	Classify materials as solids or liquids. • **Solids and Liquids** • TG: L01-17 (pp3-140)
STRAND		**AZ.SC01-S5.**	**Physical Science**
CONCEPT		**SC01-S5C2.**	Position and Motion of Objects: Understand spatial relationships and the way objects move.
PERFORMANCE OBJECTIVE		**SC01-S5C2-01.**	Demonstrate the various ways that objects can move (e.g., straight line, zigzag, back-and-forth, round-and-round, fast, slow). • **Solids and Liquids** • TG: L03-4 (pp19-40), L05.Exts (pp43-45), L06.Exts (pp51-52), L09 (pp69-80)
STRAND		**AZ.SC01-S6.**	**Earth and Space Science**
CONCEPT		**SC01-S6C1.**	Properties of Earth Materials: Identify the basic properties of Earth materials.

PERFORMANCE OBJECTIVE		**SC01-S6C1-01.**	Describe the following basic Earth materials: rocks, soil, water. • **Soils** • TG: L01-17 (pp3-172) • **Solids and Liquids** • TG: L04.Exts (p34), L10.Exts (p85)
PERFORMANCE OBJECTIVE		**SC01-S6C1-02.**	Compare the following physical properties of basic Earth materials: color, texture, capacity to retain water. • **Solids and Liquids** • TG: L02 (pp11-18), L05.Exts (pp43-45), L06.Exts (pp51-52), L09 (pp69-80) L11 (pp87-94), L15 (pp121-130)
PERFORMANCE OBJECTIVE		**SC01-S6C1-05.**	Identify ways to conserve natural resources (e.g., reduce, reuse, recycle, find alternatives). • **Solids and Liquids** • TG: L14 (pp109-120
CONCEPT		**SC01-S6C2.**	Objects in the Sky: Identify objects in the sky.
PERFORMANCE OBJECTIVE		**SC01-S6C2-01.**	Identify evidence that the Sun is the natural source of heat and light on the Earth (e.g., warm surfaces, shadows, shade). • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6)
PERFORMANCE OBJECTIVE		**SC01-S6C2-02.**	Compare celestial objects (e.g., Sun, Moon, stars) and transient objects in the sky (e.g., clouds, birds, airplanes, contrails). • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3), Act 02 (pp 1-6), Act 03 (pp 1-6)
PERFORMANCE OBJECTIVE		**SC01-S6C2-03.**	Describe observable changes that occur in the sky, (e.g., clouds forming and moving, the position of the Moon). • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3), Act 02 (pp 1-6), Act 03 (pp 1-6)

Changes, Life Cycle of Butterflies, Weather

Grade 2 - Science
Arizona Academic Standards

STRAND		**AZ.SC02-S1.**	**Inquiry Process**
CONCEPT		**SC02-S1C1.**	Observations, Questions, and Hypotheses: Observe, ask questions, and make predictions.
PERFORMANCE OBJECTIVE		**SC02-S1C1-02.**	Predict the results of an investigation (e.g., in animal life cycles, phases of matter, the water cycle). . • **Changes** • TG: L01-17 (pp3-158) • **The Life Cycle of Butterflies** • TG: L01-16 (pp3-96) • **Weather** • TG: L02-13 (pp11-128)
STRAND		**AZ.SC02-S1.**	**Inquiry Process**
CONCEPT		**SC02-S1C2.**	Scientific Testing (Investigating and Modeling): Participate in planning and conducting investigations, and recording data.
PERFORMANCE OBJECTIVE		**SC02-S1C2-01.**	Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry. • **Changes** • TG: S-Sec3 (pp9-29) • **The Life Cycle of Butterflies** • TG: S-Sec3 (pp17-22), L02 (pp11-18) • **Weather** • TG: S-Sec3 (pp9-12), L02.Exts (pp15-16)
PERFORMANCE OBJECTIVE		**SC02-S1C2-02.**	Participate in guided investigations in life, physical, and Earth and space sciences. • **Changes** • TG: L01-17 (pp3-158) • **The Life Cycle of Butterflies** • TG: L01-16 (pp3-96) • **Weather** • TG: L02-13 (pp11-128)
PERFORMANCE OBJECTIVE		**SC02-S1C2-03.**	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). • **The Life Cycle of Butterflies** • TG: L01.Exts (p7), L02-9 (pp11-62), L11.Exts (pp71-73), L12 (pp75-80) • L14 (pp85-88) • **Weather** • TG: App-A (pp151-152), App-B (pp153-167), L05-10 (pp43-100)
PERFORMANCE OBJECTIVE		**SC02-S1C2-04.**	Record data from guided investigations in an organized and appropriate format (e.g., lab book, log, notebook, chart paper) (See W02-S3C2-01 and W02-S3C3-01). • **Changes** • TG: L01-17 (pp3-158) • **The Life Cycle of Butterflies** • TG: L02 (pp11-18), L13 (pp81-84) • **Weather**

			• TG: App-B (pp153-167), L01-16 (pp3-148)
STRAND		**AZ.SC02-S1.**	**Inquiry Process**
CONCEPT		**SC02-S1C3.**	Analysis and Conclusions: Organize and analyze data; compare to predictions.
PERFORMANCE OBJECTIVE		**SC02-S1C3-01.**	Organize data using graphs (i.e., pictograph, tally chart), tables, and journals (See M02-S2C1-02). • **Changes** • TG: L01-17 (pp3-158) • **Weather** • TG: App-B (pp153-167), L01-2 (pp3-24), L04 (pp33-42), L07-8 (pp63-82) • L10 (pp91-100), L12 (pp113-122), L14 (pp129-134), L15.Exts (p137) • L16 (pp141-148)
PERFORMANCE OBJECTIVE		**SC02-S1C3-02.**	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). • **Changes** • TG: L04-5 (pp43-62) • **The Life Cycle of Butterflies** • TG: L13 (pp81-84) • **Weather** • TG: L01 (pp3-10), L05.Exts (pp47-48), L15-17 (pp135-150)
PERFORMANCE OBJECTIVE		**SC02-S1C3-03.**	Compare the results of the investigation to predictions made prior to the investigation. . • **Changes** TG: • L01 -17(pp3-158) • **The Life Cycle of Butterflies** • TG: L04 (pp23-28), L07.Exts (p43), L08-10 (pp47-68) • **Weather** • TG: L01-16 (pp3-148)
PERFORMANCE OBJECTIVE		**SC02-S1C3-04.**	Generate questions for possible future investigations based on the conclusions of the investigation. • **Changes** • TG: L01-16 (pp3-148)
STRAND		**AZ.SC02-S1.**	**Inquiry Process**
CONCEPT		**SC02-S1C4.**	Communication: Communicate results of investigations.
PERFORMANCE OBJECTIVE		**SC02-S1C4-01.**	Communicate the results and conclusions of an investigation (e.g., verbal, drawn, or written) (See M02-S2C1-02 and W02-S3C2-01). • **Changes** • TG: L01 -17(pp3-158) • **The Life Cycle of Butterflies** • TG: App-B (pp101-110), L01-16 (pp3-96) • **Weather** • TG: L01-16 (pp3-148)
PERFORMANCE OBJECTIVE		**SC02-S1C4-02.**	Communicate with other groups to describe the results of an investigation. (See LS-F1). • **Changes** • TG: L01 -17(pp3-158)

			• **The Life Cycle of Butterflies** • TG: L01-16 (pp3-96) • **Weather** • TG: L01-16 (pp3-148)
STRAND		**AZ.SC02-S2.**	**History and Nature of Science**
CONCEPT		**SC02-S2C1.**	History of Science as a Human Endeavor: Identify individual and cultural contributions to scientific knowledge.
PERFORMANCE OBJECTIVE		**SC02-S2C1-01.**	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). • **Weather** • TG: L11-12 (pp101-122)
STRAND		**AZ.SC02-S2.**	**History and Nature of Science**
CONCEPT		**SC02-S2C2.**	Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.
PERFORMANCE OBJECTIVE		**SC02-S2C2-03.**	Identify parts of a system too small to be seen (e.g., plant and animal cells). • **The Life Cycle of Butterflies** • TG: L01.Exts (p7), L11.Exts (pp71-73)
STRAND		**AZ.SC02-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		**SC02-S3C2.**	Science and Technology in Society: Understand the impact of technology.
PERFORMANCE OBJECTIVE		**SC02-S3C2-02.**	Describe important technological contributions made by people, past and present: automobile - Henry Ford; airplane - Wilbur and Orville Wright; telephone - Alexander G. Bell. • **Weather** • TG: L11-12 (pp101-122)
PERFORMANCE OBJECTIVE		**SC02-S3C2-03.**	Identify a simple problem that could be solved by using a suitable tool. • **The Life Cycle of Butterflies** • TG: L01.Exts (p7), L02-9 (pp11-62), L11.Exts (pp71-73), L12 (pp75-80) • L14 (pp85-88) • **Weather** • TG: L05 -12(pp43-122)
STRAND		**AZ.SC02-S4.**	**Life Science**
CONCEPT		**SC02-S4C1.**	Characteristics of Organisms: Understand that basic structures in plants and animals serve a function.
PERFORMANCE OBJECTIVE		**SC02-S4C1-01.**	Identify animal structures that serve different functions (e.g., sensory, defense, locomotion). • **The Life Cycle of Butterflies** • TG: App-B (pp101-110), L01-16 (pp3-96)
STRAND		**AZ.SC02-S4.**	**Life Science**
CONCEPT		**SC02-S4C2.**	Life Cycles: Understand the life cycles of plants and animals.
PERFORMANCE OBJECTIVE		**SC02-S4C2-03.**	Compare the life cycles of various organisms. • **The Life Cycle of Butterflies** • TG: App-B (pp101-110), L01-16 (pp3-96)
STRAND		**AZ.SC02-S5.**	**Physical Science**

CONCEPT		**SC02-S5C1.**	Properties of Objects and Materials: Classify objects and materials by their observable properties.
PERFORMANCE OBJECTIVE		**SC02-S5C1-01.**	Describe objects in terms of measurable properties (e.g., length, volume, weight, temperature) using scientific tools. (See M02-S4C4-01 and M02-S4C4-02). • **Changes** • TG: L09.Exts (pp89-90) • **The Life Cycle of Butterflies** • TG: L01.Exts (p7), L02-9 (pp11-62), L11.Exts (pp71-73), L12 (pp75-80) • L14 (pp85-88) • **Weather** • TG: App-A (pp151-152), App-B (pp153-167), L05-10 (pp43-100), L12.Exts • (pp116-117)
PERFORMANCE OBJECTIVE		**SC02-S5C1-02.**	Classify materials as solids, liquids, or gases. • **Changes** • TG: L01 (pp3-20)
PERFORMANCE OBJECTIVE		**SC02-S5C1-04.**	Demonstrate that solids have a definite shape and that liquids and gases take the shape of their containers. • **Changes** • TG: L01-11 (pp3-110), L13-14 (pp119-136), L17 (pp155-158)
STRAND		**AZ.SC02-S6.**	**Earth and Space Science**
CONCEPT		**SC02-S6C3.**	Changes in the Earth and Sky: Understand characteristics of weather conditions and climate.
PERFORMANCE OBJECTIVE		**SC02-S6C3-01.**	Measure weather conditions (e.g., temperature, precipitation) (See M02-S4C4-04 and M02-S4C4-05). • **Weather** • TG: L03-5 (pp25-54), L07 (pp63-70), L10 (pp91-100), L15 (pp135-140)
PERFORMANCE OBJECTIVE		**SC02-S6C3-02.**	Record weather conditions (e.g., temperature, precipitation). • **Weather** • TG: L03-5 (pp25-54), L07 (pp63-70), L10 (pp91-100), L15 (pp135-140)
PERFORMANCE OBJECTIVE		**SC02-S6C3-03.**	Identify the following types of clouds: Cumulus, stratus, cirrus. • **Weather** • TG: L13-14(pp123-134)
PERFORMANCE OBJECTIVE		**SC02-S6C3-04.**	Analyze the relationship between clouds, temperature, and weather patterns. • **Weather** • TG: App-A (pp151-152), App-B (pp153-167), L03 (pp25-32), L05-7 (pp43-54) • L13-14 (pp123-128)

Plant Growth and Development, Rocks and Minerals, Sound

Grade 3 - Science
Arizona Academic Standards

STRAND	AZ.SC03-S1.	Inquiry Process
CONCEPT	SC03-S1C1.	Observations, Questions, and Hypotheses: Observe, ask questions, and make predictions.
PERFORMANCE OBJECTIVE	SC03-S1C1-01.	Formulate relevant questions about the properties of objects, organisms, and events of the environment using observations and prior knowledge. (See M03-S2C1-01) . • **Plant Growth and Development** • TG: L02-17 (pp9-100)
PERFORMANCE OBJECTIVE	SC03-S1C1-02.	Predict the results of an investigation based on observed patterns, not random guessing. • **Plant Growth and Development** • TG: L01 (pp3-8), L07 (pp39-42), L11.Exts (p63), L16.Exts (pp96-97) • **Sound** • TG: L03 (pp23-27), L05.Exts (pp35-36), L06 (pp39-48)
STRAND	**AZ.SC03-S1.**	**Inquiry Process**
CONCEPT	SC03-S1C2.	Scientific Testing (Investigating and Modeling): Participate in planning and conducting investigations, and recording data.
PERFORMANCE OBJECTIVE	SC03-S1C2-01.	Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry. • **Plant Growth and Development** • TG: S-Sec3 (pp10-14), L03 (pp13-24), L09 (pp47 - 54) • **Rocks and Minerals** • TG: S-Sec3 (pp10-14) • **Sound** • TG: S-Sec3 (pp9-12)
PERFORMANCE OBJECTIVE	SC03-S1C2-02.	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. • **Plant Growth and Development** • TG: L16.Exts (pp96-97) • **Sound** • TG: L12.Exts (p88)
PERFORMANCE OBJECTIVE	SC03-S1C2-03.	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. • **Plant Growth and Development** • TG: L01-16 (pp3-98) • **Rocks and Minerals** • TG: L01-16 (pp3-126) • **Sound** • TG: L01-17 (pp11-118)
PERFORMANCE OBJECTIVE	SC03-S1C2-04.	Use metric and U.S. customary units to measure objects (See M03-S4C4-04).

		• **Plant Growth and Development** • TG: L05 (pp29-34), L07 (pp39-42)
PERFORMANCE OBJECTIVE	**SC03-S1C2-05.**	Record data in an organized and appropriate format (e.g., t-chart, table, list, written log) (See W03-S3C2-01 and W03-S3C3-01). • **Plant Growth and Development** • TG: App-A (pp101-103), L01-16 (pp3-98) • **Rocks and Minerals** • TG: L01-16 (pp3-126) • **Sound** • TG: L01-14 (pp11-102), L17 (pp117-118)
STRAND	**AZ.SC03-S1.**	**Inquiry Process**
CONCEPT	**SC03-S1C3.**	Analysis and Conclusions: Organize and analyze data; compare to predictions.
PERFORMANCE OBJECTIVE	**SC03-S1C3-01.**	Organize data using the following methods with appropriate labels: bar graphs; pictographs; tally charts (See M03-S2C1-02). • **Plant Growth and Development** • TG: App-A (pp101-103), L01 (pp3-8), L05 (pp29-34), L07 (pp39-42) • L12 (pp67-70), L15 (pp89-94) • **Rocks and Minerals** • TG: L03 (pp19-26) • **Sound** • TG: L04-6 (pp28-48), L17 (pp117-118)
PERFORMANCE OBJECTIVE	**SC03-S1C3-02.**	Construct reasonable interpretations of the collected data based on formulated questions. (See M03-S2C1-03). • **Plant Growth and Development** • TG: L01 (pp3-8), L09 (pp47 - 54), L17 (pp99-100) • **Rocks and Minerals** • TG: L05 (pp35-42), L07-8 (pp51-62), L11-13 (pp79-94) • **Sound** • TG: L04 (pp28-32), L16 (pp113-116)
PERFORMANCE OBJECTIVE	**SC03-S1C3-03.**	Compare the results of the investigation to predictions made prior to the investigation. . • **Plant Growth and Development** • TG: L01-17 (pp3-100) • **Rocks and Minerals** • TG: L01-16 (pp3-126) • **Sound** • TG: L01-14 (pp11-102), L17 (pp117-118)
PERFORMANCE OBJECTIVE	**SC03-S1C3-04.**	Generate questions for possible future investigations based on the conclusions of the investigation. • **Plant Growth and Development** • TG: L02-17 (pp9-100) • **Rocks and Minerals** • TG: L01-16 (pp3-126) • **Sound**

		• TG: L01-14 (pp11-118), L17 (pp117-118)
PERFORMANCE OBJECTIVE	**SC03-S1C3-05.**	Record questions for further inquiry based on the conclusions of the investigation. • **Plant Growth and Development** • TG: L02-17 (pp9-100) • **Rocks and Minerals** • TG: L01-16 (pp3-126) • **Sound** • TG: L01-14 (pp11-118), L17 (pp117-118)
STRAND	**AZ.SC03-S1.**	**Inquiry Process**
CONCEPT	**SC03-S1C4.**	Communication: Communicate results of investigations.
PERFORMANCE OBJECTIVE	**SC03-S1C4-01.**	Communicate investigations and explanations using evidence and appropriate terminology. (See W03-S3C2-01). • **Plant Growth and Development** • TG: G-App-D (pp125-127), L01 (pp3-8) • **Rocks and Minerals** • TG: G-App-A (pp129-131) • **Sound** • TG: G-App-B (pp121-122), L01-14 (pp11-102), L17 (pp117-118)
PERFORMANCE OBJECTIVE	**SC03-S1C4-02.**	Describe an investigation in ways that enable others to repeat it. (See W03-S3C2-01 and LS-F1). • **Plant Growth and Development** • TG: L03 (pp13-24), L09 (pp47 - 54)
PERFORMANCE OBJECTIVE	**SC03-S1C4-03.**	Communicate with other groups to describe the results of an investigation. (See LS-E1). • **Plant Growth and Development** • TG: L01-16 (pp3-98) • **Rocks and Minerals** • TG: L01-16 (pp3-126) • **Sound** • TG: L01-17 (pp11-118)
STRAND	**AZ.SC03-S2.**	**History and Nature of Science**
CONCEPT	**SC03-S2C2.**	Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.
PERFORMANCE OBJECTIVE	**SC03-S2C2-01.**	Describe how, in a system (e.g., terrarium, house) with many components, the components usually influence one another. • **Rocks and Minerals** • TG: L04 Exts (p32)
PERFORMANCE OBJECTIVE	**SC03-S2C2-02.**	Explain why a system may not work if a component is defective or missing. • **Rocks and Minerals** • TG: L04 Exts (p32)

STRAND	**AZ.SC03-S3.**	**Science in Personal and Social Perspectives**
CONCEPT	**SC03-S3C2.**	Science and Technology in Society: Understand the impact of technology.
PERFORMANCE OBJECTIVE	**SC03-S3C2-01.**	Identify ways that people use tools and techniques to solve problems. • **Plant Growth and Development** • TG: L02-16 (pp9-98) • **Rocks and Minerals** • TG: L01-16 (pp3-126) • **Sound** • TG: L04.Exts (pp26-27)
PERFORMANCE OBJECTIVE	**SC03-S3C2-03.**	Design and construct a technological solution to a common problem or need using common materials. • **Sound** • TG: L07 (pp49-56), L15-16 (pp103-116)
STRAND	**AZ.SC03-S4.**	**Life Science**
CONCEPT	**SC03-S4C1.**	Characteristics of Organisms: Understand that basic structures in plants and animals serve a function.
PERFORMANCE OBJECTIVE	**SC03-S4C1-01.**	Describe the function of the following plant structures: roots - absorb nutrients; stems - provide support; leaves - synthesize food; flowers - attract pollinators and produce seeds for reproduction. • **Plant Growth and Development** • TG: L02 (pp9-12), L04-6 (pp25-38), L10 (pp55-60), L11.Exts (p63), L13 (pp71-78)
STRAND	**AZ.SC03-S4.**	**Life Science**
CONCEPT	**SC03-S4C2.**	Life Cycles: Understand the life cycles of plants and animals.
PERFORMANCE OBJECTIVE	**SC03-S4C2-01.**	Compare life cycles of various plants (e.g., conifers, flowering plants, ferns). • **Plant Growth and Development** • TG: L10 (pp55-60), L12 (pp67-70), L15-16 (pp89-98)
PERFORMANCE OBJECTIVE	**SC03-S4C2-02.**	Explain how growth, death, and decay are part of the plant life cycle. • **Plant Growth and Development** • TG: L10 (pp55-60), L12 (pp67-70), L15-16 (pp89-98)
STRAND	**AZ.SC03-S4.**	**Life Science**
CONCEPT	**SC03-S4C3.**	Organisms and Environments: Understand the relationships among various organisms and their environment.
PERFORMANCE OBJECTIVE	**SC03-S4C3-03.**	Explain the interrelationships among plants and animals in different environments: producers - plants; consumers - animals; decomposers - fungi, insects, bacteria. • **Plant Growth and Development** • TG: L11 (pp61-66), L14.Exts (pp86-87)
STRAND	**AZ.SC03-S5.**	**Physical Science**
CONCEPT	**SC03-**	Energy and Magnetism: Investigate different forms of energy.

		S5C3.	
PERFORMANCE OBJECTIVE		SC03-S5C3-01.	Demonstrate that light can be: reflected (with mirrors); refracted (with prisms); absorbed (by dark surfaces). • **Rocks and Minerals** • TG: L08-9 (pp57-70)
PERFORMANCE OBJECTIVE		SC03-S5C3-02.	Describe how light behaves on striking objects that are: transparent (clear plastic); translucent (waxed paper); opaque (cardboard). • **Rocks and Minerals** • TG: L08-9 (pp57-70)
PERFORMANCE OBJECTIVE		SC03-S5C3-03.	Demonstrate that vibrating objects produce sound. • **Sound** • TG: L01-17 (pp11-118)
PERFORMANCE OBJECTIVE		SC03-S5C3-04.	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). • **Sound** • TG: L03-17 (pp23-118)
STRAND		**AZ.SC03-S6.**	**Earth and Space Science**
CONCEPT		SC03-S6C1.	Properties of Earth Materials: Identify the basic properties of Earth materials.
PERFORMANCE OBJECTIVE		SC03-S6C1-02.	Describe the different types of rocks and how they are formed: metamorphic, igneous, sedimentary. • **Rocks and Minerals** • TG: L01-4 (pp3-34), L15-17 (pp103-128)
PERFORMANCE OBJECTIVE		SC03-S6C1-03.	Classify rocks based on the following physical properties: color; texture. • **Rocks and Minerals** • TG: L02 (pp13-18), L17 (pp127-128)
PERFORMANCE OBJECTIVE		SC03-S6C1-06.	Describe ways humans use Earth materials (e.g., fuel, building materials, growing food). • **Plant Growth and Development** • TG: L16 (pp95-98)

Ecosystems, Electric Circuits, Land and Water

Grade 4 - Science
Arizona Academic Standards

STRAND		AZ.SC04-S1.	Inquiry Process
CONCEPT		SC04-S1C1.	Observations, Questions, and Hypotheses: Observe, ask questions, and make predictions.
PERFORMANCE OBJECTIVE		SC04-S1C1-01.	Differentiate inferences from observations. • **Electric Circuits** • TG: L01-L17 (pp3-86) • **Ecosystems** • RB: (pp43-44), TG: L01-L17 (pp3-171) • **Land and Water** • RB: (pp07-18), (pp21-38), (pp41-61), TG: L01-L17 (pp3-186)
PERFORMANCE OBJECTIVE		SC04-S1C1-02.	Formulate a relevant question through observations that can be tested by an investigation (See M04-S2C1-01). • **Electric Circuits** • TG: L01 (pp3-6), L17 (pp85-86)
PERFORMANCE OBJECTIVE		SC04-S1C1-03.	Formulate predictions in the realm of science based on observed cause and effect relationships. • **Ecosystems** • TG: L02-15 (pp13-164) • **Electric Circuits** • TG: L03 (pp15-20), L05 (pp25-32), L09 (pp49-52), L11 (pp59-64) • **Land and Water** • TG: L03.Exts (p35), L04 (pp37-50), L09-11 (pp99-128), L13-16 (pp143-182)
PERFORMANCE OBJECTIVE		SC04-S1C1-04.	Locate information (e.g., book, article, website) related to an investigation. (See W04-S3C6-01 and R04-S3C1-05). • **Land and Water** • TG: L02 (pp11-28), L06-7 (pp63-84), L12 (pp129-142), L16 (pp173-182)
STRAND		**AZ.SC04-S1.**	**Inquiry Process**
CONCEPT		SC04-S1C2.	Scientific Testing (Investigating and Modeling) Participate in planning and conducting investigations, and recording data.
PERFORMANCE OBJECTIVE		SC04-S1C2-01.	Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. • **Ecosystems** • RB: (pp43-44) • TG: S-Sec3 (pp34-44), L06 (pp61-74) • **Electric Circuits** • RB: (pp29-33), (pp42-44) • TG: S-Sec3 (pp16-19), L01-2 (pp3-14), L04 (pp21-24), L08 (pp45-48) • **Land and Water** • TG: S-Sec3 (pp13-18), L02 (pp11-28), L04 (pp37-50), L06 (pp63-74), L15 (pp163-172)
PERFORMANCE OBJECTIVE		SC04-S1C2-02.	Plan a simple investigation that identifies the variables to be controlled.

			• **Land and Water** • TG: L15 (pp163-172)
PERFORMANCE OBJECTIVE		**SC04-S1C2-03.**	Conduct controlled investigations (e.g., related to erosion, plant life cycles, weather, magnetism) in life, physical, and Earth and space sciences. . • **Ecosystems** • RB: (pp43-44) • TG: L02-15 (pp13-164), L16.Exts (p167), L17 (pp169-171) • **Electric Circuits** • RB: (pp13-16), (pp60-61) • TG: L01-17 (pp3-86) • **Land and Water** • RB: (pp07-11), (pp12-18), (pp21-38), (pp41-61) • TG: L01-17 (pp3-186)
PERFORMANCE OBJECTIVE		**SC04-S1C2-04.**	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). • **Electric Circuits** • TG: L01-17 (pp3-86) • **Land and Water** • RB: (pp32-35) • TG: L02-16 (pp11-182)
PERFORMANCE OBJECTIVE		**SC04-S1C2-05.**	Record data in an organized and appropriate format (e.g., t-chart, table, list, written log) (See W04-S3C2-01 and W04-S3C3-01). • **Ecosystems** • TG: L02-12 (pp13-124), L14 (pp133-144), L16.Exts (p167) • **Electric Circuits** • TG: L01-17 (pp3-86) • **Land and Water** • TG: L01-5 (pp3-62), L07-9 (pp75-108), L12-14 (pp129-12), L17 (pp182-186)
STRAND		**AZ.SC04-S1.**	**Inquiry Process**
CONCEPT		**SC04-S1C3.**	Analysis and Conclusions: Organize and analyze data; compare to predictions.
PERFORMANCE OBJECTIVE		**SC04-S1C3-01.**	Analyze data obtained in a scientific investigation to identify trends (See M04-S2C1-03). • **Ecosystems** • TG: L13 (pp125-132) • **Land and Water** • TG: L06 (pp63-74), L08 (pp85-98), L10-12 (pp109-142), L15-16 (pp163-182)
PERFORMANCE OBJECTIVE		**SC04-S1C3-02.**	Formulate conclusions based upon identified trends in data. (See M04-S2C1-03). • **Land and Water** • TG: L05 (pp51-62), L10 (pp109-118), L13-14 (pp143-162), L17 (pp182-186)
PERFORMANCE OBJECTIVE		**SC04-S1C3-04.**	Determine whether the data supports the prediction for an investigation. • **Ecosystems**

			• TG: L02-15 (pp13-164) • **Electric Circuits** • TG: L03 (pp15-20), L05 (pp25-32), L09 (pp49-52), L11 (pp59-64) • **Land and Water** • TG: L03.Exts (p35), L04-5 (pp37-62), L10 (pp109-118), L13-17 (pp143-186)
PERFORMANCE OBJECTIVE		**SC04-S1C3-05.**	Develop new questions and predictions based upon the data collected in the investigation. • **Electric Circuits** • TG: L01 (pp3-6), L17 (pp85-86)
STRAND		**AZ.SC04-S1.**	**Inquiry Process**
CONCEPT		**SC04-S1C4.**	Communication: Communicate results of investigations.
PERFORMANCE OBJECTIVE		**SC04-S1C4-01.**	Communicate verbally or in writing the results of an inquiry. (See W04-S3C3-01). • **Ecosystems** • TG: L02-17 (pp13-171) • **Electric Circuits** • TG: L04 (pp21-24), L17 (pp85-86) • **Land and Water** • TG: L03-4 (pp29-50), L07 (pp75-84), L09 (pp99-108), L16-17 (pp173-186)
PERFORMANCE OBJECTIVE		**SC04-S1C4-02.**	Choose an appropriate graphic representation for collected data: bar graph; line graph; Venn diagram; model (See M04-S2C1-02) . • **Ecosystems** • TG: L03.Exts (p29), L05.Exts (p57), L06.Exts (pp64-65), L12.Exts (p120) • **Electric Circuits** • RB: (pp07-21), (pp24-44), (pp47-61) • TG: L02.Exts (p13), L03-4 (pp15-24), L05.Exts (p30), L06 (pp33-38), L08-15 (pp45-80) • **Land and Water** • TG: L09 (pp99-108), L16 (pp173-182)
PERFORMANCE OBJECTIVE		**SC04-S1C4-03.**	Communicate with other groups or individuals to compare the results of a common investigation. • **Ecosystems** • RB: (pp07-23), (pp26-37), (pp40-51), (pp54-61) • TG: L02-10 (pp13-110), L12-17 (pp117-171) • **Electric Circuits** • TG: L01-17 (pp3-86) • **Land and Water** • TG: L01-17 (pp3-186)
STRAND		**AZ.SC04-S2.**	**History and Nature of Science**
CONCEPT		**SC04-S2C1.**	History of Science as a Human Endeavor: Identify individual and cultural contributions to scientific knowledge.
PERFORMANCE OBJECTIVE		**SC04-S2C1-01.**	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). • **Ecosystems** • RB: (pp07-10), (pp54-61)

			• **Electric Circuits** • RB: (pp07-21), (pp50-52), (pp56-59) • **Land and Water** • RB: (pp07-09), (pp32-38), (pp41-44), (pp57-58)
PERFORMANCE OBJECTIVE		SC04-S2C1-02.	Describe science-related career opportunities. • **Electric Circuits** • RB: (pp42-44)
STRAND		**AZ.SC04-S2.**	**History and Nature of Science**
CONCEPT		SC04-S2C2.	Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.
PERFORMANCE OBJECTIVE		SC04-S2C2-01.	Explain the role of experimentation in scientific inquiry. • **Ecosystems** • RB: (pp43-44) • TG: L02-17 (pp13-171) • **Electric Circuits** • RB: (pp13-16), (pp60-61) • TG: L01-17 (pp3-86) • **Land and Water** • TG: L01-17 (pp3-186)
PERFORMANCE OBJECTIVE		SC04-S2C2-02.	Describe the interaction of components in a system (e.g., flashlight, radio). • **Ecosystems** • TG: L02-7 (pp13-82) • **Land and Water** • TG: L02-3 (pp11-36), L08-15 (pp85-172)
STRAND		**AZ.SC04-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		SC04-S3C1.	Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.
PERFORMANCE OBJECTIVE		SC04-S3C1-01.	Describe how natural events and human activities have positive and negative impacts on environments (e.g., fire, floods, pollution, dams). • **Ecosystems** • RB: (pp31-37), (pp40-42), (pp60-61) • TG: L08-16 (pp83-168) • **Land and Water** • RB: (pp10-14), **4**(pp36-38) • TG: L12 (pp129-142), L14 (pp153-162)
PERFORMANCE OBJECTIVE		SC04-S3C1-02.	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). • **Ecosystems** • RB: (pp31-34) • **Land and Water** • RB: (pp10-14), (pp36-38)

			• TG: L03-10 (pp29-118), L12 (pp129-142), L14-15 (pp153-172)
STRAND		**AZ.SC04-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		**SC04-S3C2.**	Science and Technology in Society: Understand the impact of technology.
PERFORMANCE OBJECTIVE		**SC04-S3C2-01.**	Describe how science and technology (e.g., computers, air conditioning, medicine) have improved the lives of many people. • **Electric Circuits** • RB: (pp17-21)
PERFORMANCE OBJECTIVE		**SC04-S3C2-02.**	Describe benefits (e.g., easy communications, rapid transportation) and risks (e.g., pollution, destruction of natural resources) related to the use of technology. • **Electric Circuits** • RB: (pp17-21), (pp53-55) • TG: L16 (pp81-84) • **Land and Water** • RB: (pp21-29)
PERFORMANCE OBJECTIVE		**SC04-S3C2-03.**	Design and construct a technological solution to a common problem or need using common materials. • **Ecosystems** • TG: L07.Exts (p79), L14.Exts (p136) • **Electric Circuits** • TG: L09.Exts (pp51-52), L12 (pp65-68), L13.Exts (p71), L15.Exts (p79), L16.Exts (p83) • **Land and Water** • TG: L12 (pp129-142), L15 (pp163-172)
STRAND		**AZ.SC04-S4.**	**Life Science**
CONCEPT		**SC04-S4C1.**	Characteristics of Organisms: Understand that basic structures in plants and animals serve a function.
PERFORMANCE OBJECTIVE		**SC04-S4C1-01.**	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. • **Electric Circuits** • RB: (pp11-12), (pp47-49) • **Land and Water** • TG: L14.Exts (p156)
PERFORMANCE OBJECTIVE		**SC04-S4C1-02.**	Classify animals by identifiable group characteristics: vertebrates - mammals, birds, fish, reptiles, amphibians; invertebrates - insects, arachnids. • **Ecosystems** • RB: (pp28-30) • **Ecosystems** • TG: L06 (pp61-74)
STRAND		**AZ.SC04-S4.**	**Life Science**
CONCEPT		**SC04-S4C3.**	Organisms and Environments: Understand the relationships among various organisms and their environment.
PERFORMANCE		**SC04-**	Describe ways various resources (e.g., air, water, plants, animals, soil) are utilized to meet the needs of a

OBJECTIVE		S4C3-01.	population. • **Ecosystems** • RB: (pp35-37) • **Land and Water** • TG: L12 (pp129-142), L14-16 (pp153-182)
PERFORMANCE OBJECTIVE		SC04-S4C3-02.	Differentiate renewable resources from nonrenewable resources. • **Land and Water** • RB: (pp47-49)
PERFORMANCE OBJECTIVE		SC04-S4C3-03.	Analyze the effect that limited resources (e.g., natural gas, minerals) may have on an environment. • **Ecosystems** • RB: (pp31-37), (pp45-48), (pp57-59) • **Land and Water** • RB: (pp36-38), (pp47-49) • TG: L12 (pp129-142), L14-16 (pp153-182)
PERFORMANCE OBJECTIVE		SC04-S4C3-04.	Describe ways in which resources can be conserved (e.g., by reducing, reusing, recycling, finding substitutes). • **Ecosystems** • RB: (pp31-37), (pp45-48), (pp57-59) • **Land and Water** • RB: (pp36-38), (pp47-49)
STRAND		**AZ.SC04-S4.**	**Life Science**
CONCEPT		SC04-S4C4.	Diversity, Adaptation, and Behavior: Identify plant and animal adaptations.
PERFORMANCE OBJECTIVE		SC04-S4C4-01.	Recognize that successful characteristics of populations are inherited traits that are favorable in a particular environment. • **Ecosystems** • RB: (pp11-13)
PERFORMANCE OBJECTIVE		SC04-S4C4-02.	Give examples of adaptations that allow plants and animals to survive. (camouflage - horned lizards, coyotes; mimicry - Monarch and Viceroy butterflies; physical - cactus spines; mutualism - species of acacia that harbor ants, which repel other harmful insects). • **Ecosystems** • RB: (pp11-13)
STRAND		**AZ.SC04-S5.**	**Physical Science**
CONCEPT		SC04-S5C3.	Energy and Magnetism: Investigate different forms of energy.
PERFORMANCE OBJECTIVE		SC04-S5C3-02.	Construct series and parallel electric circuits. • **Electric Circuits** • TG: L11.Exts (p63), L13 (pp69-72), TG: L16 (pp81-84)

PERFORMANCE OBJECTIVE		SC04-S5C3-03.	Explain the purpose of conductors and insulators in various practical applications. • **Electric Circuits** • TG: L07 (pp39-44)
STRAND		**AZ.SC04-S6.**	**Earth and Space Science**
CONCEPT		SC04-S6C2.	Earth's Processes and Systems: Understand the processes acting on the Earth and their interaction with the Earth systems.
PERFORMANCE OBJECTIVE		SC04-S6C2-01.	Identify the Earth processes that cause erosion. • **Land and Water** • RB: (pp36-38), (pp50-52) • TG: L03-7 (pp29-84), L09.Exts (p103), L10-16 (pp109-182)
PERFORMANCE OBJECTIVE		SC04-S6C2-02.	Describe how currents and wind cause erosion and land changes. • **Land and Water** • RB: (pp36-38)
PERFORMANCE OBJECTIVE		SC04-S6C2-03.	Describe the role that water plays in the following processes that alter the Earth's surface features: erosion; deposition; weathering. • **Land and Water** • RB: (pp36-38), (pp50-52) • TG: L03-7 (pp29-84), L09.Exts (p103), L10-16 (pp109-182)
PERFORMANCE OBJECTIVE		SC04-S6C2-04.	Compare rapid and slow processes that change the Earth's surface, including: rapid - earthquakes, volcanoes, floods; slow - wind, weathering. • **Land and Water** • RB: (pp10-14), (pp36-38) • TG: L03-15 (pp29-172)
PERFORMANCE OBJECTIVE		SC04-S6C2-05.	Identify the Earth events that cause changes in atmospheric conditions (e.g., volcanic eruptions, forest fires). • **Land and Water** • RB: (pp12-14)
PERFORMANCE OBJECTIVE		SC04-S6C2-06.	Analyze evidence that indicates life and environmental conditions have changed (e.g., tree rings, fish fossils in desert regions, ice cores). • **Land and Water** • RB: (pp07-09)
STRAND		**AZ.SC04-S6.**	**Earth and Space Science**
CONCEPT		SC04-S6C3.	Changes in the Earth and Sky: Understand characteristics of weather conditions and climate.
PERFORMANCE OBJECTIVE		SC04-S6C3-01.	Identify the sources of water within an environment (e.g., ground water, surface water, atmospheric water, glaciers). • **Land and Water** • RB: (pp21-29)

			• TG: L06 (pp63-74)
PERFORMANCE OBJECTIVE		SC04-S6C3-02.	Describe the distribution of water on the Earth's surface. • **Land and Water** • RB: (pp21-25) • TG: L01 (pp3-10), L06.Exts (pp67-68)
PERFORMANCE OBJECTIVE		SC04-S6C3-06.	Compare weather conditions in various locations (e.g., regions of Arizona, various U.S. cities, coastal vs. interior geographical regions). • **Electric Circuits** • RB: (pp56-59) • **Land and Water** • RB: (pp57-61)

Measuring Time, Motion and Design

Grade 5 - Science
Arizona Academic Standards

STRAND		AZ.SC05-S1.	Inquiry Process
CONCEPT		SC05-S1C1.	Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.
PERFORMANCE OBJECTIVE		SC05-S1C1-01.	Formulate a relevant question through observations that can be tested by an investigation. (See M05-S2C1-01). • **Measuring Time** • TG: L03 (pp31-42), L05 (pp49-58), L17 (pp149-150)
PERFORMANCE OBJECTIVE		SC05-S1C1-02.	Formulate predictions in the realm of science based on observed cause and effect relationships. • **Motion and Design** • TG: L07- (pp65-80), L12 (pp109-116) • **Measuring Time** • TG: L01-2 (pp13-30), L05 (pp49-58), L17 (pp149-150) • **3-5 Space Science** • TG: Ses 1.1 - 4.5 (pp 28-423)
STRAND		AZ.SC05-S1.	Inquiry Process
CONCEPT		SC05-S1C2.	Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.
PERFORMANCE OBJECTIVE		SC05-S1C2-01.	Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. • **Motion and Design** • TG: S-Sec3 (pp8-11), L02-13 (pp15-124), L15 (pp139-144), L17 (pp153-156) • **Measuring Time** • TG: L03 (pp31-42), L07-16 (pp67-148)
PERFORMANCE OBJECTIVE		SC05-S1C2-02.	Plan a simple investigation that identifies the variables to be controlled.

			• **Measuring Time** • TG: L07-8 (pp67-86), L10 (pp95-108), L12 (pp115-122), L15 (pp139-144)
PERFORMANCE OBJECTIVE		**SC05-S1C2-03.**	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. • **Motion and Design** • RB: (pp23-28) • TG: L01 (pp1-14), L03-15 (pp25-144), L17 (pp153-156) • **Measuring Time** • TG: L02-3 (pp21-42), L05-16 (pp49-148) • **3-5 Space Science** • TG: Ses 1.1 - 4.5 (pp 28-423)
PERFORMANCE OBJECTIVE		**SC05-S1C2-04.**	Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary) (See M05-S4C4-01). • **Motion and Design** • TG: L02-4 (pp15-46), L06 (pp57-64), L08-9 (pp73-90), L11 (pp101-108) • L12-14 (pp109-138), L16 (pp145-152) • **Measuring Time** • TG: L02 (pp21-30) • **3-5 Space Science** • TG: Ses 1.1 - 1.5 (pp 28-103), Ses 1.7-1.9 (pp 122-167), Ses 2.1 (pp 172-181) • Ses 2.4 (pp 226-245), Ses 4.1 (pp 340-364)
PERFORMANCE OBJECTIVE		**SC05-S1C2-05.**	Record data in an organized and appropriate format (e.g., t-chart, table, list, written log) (See W05-S3C2-01 and W05-S3C3-01). • **Motion and Design** • TG: L03-5 (pp25-56), L07 (pp65-72), L14 (pp125-138) • **Measuring Time** • TG: L02-3 (pp21-42), L08-9 (pp75-94), L11-12 (pp109-122), L16.Exts (p148) • **3-5 Space Science** • TG: Ses 1.3 (pp 56-69, Ses 1.5 (pp 86-103), Ses 1.7 (pp 122-135) • Ses 1.8 (pp 136-151), Ses 2.3 (pp 202-225), Ses 4.2 (pp 364-373)
STRAND		**AZ.SC05-S1.**	**Inquiry Process**
CONCEPT		**SC05-S1C3.**	Analysis and Conclusions: Analyze and interpret data to explain correlations and results; formulate new questions.
PERFORMANCE OBJECTIVE		**SC05-S1C3-01.**	Analyze data obtained in a scientific investigation to identify trends and form conclusions (See M05-S2C1-03). • **Motion and Design** • TG: L04-5 (pp35-56), L07 (pp65-72), L10 (pp91-100), L12 (pp109-116) • L15-16 (pp139-152) • **Measuring Time** • TG: L09 (pp87-94), L11 (pp109-114), L16 (pp145-148) • **3-5 Space Science** • TG: Ses 1.9 (pp 152-167), Ses 4.2 (pp 364-373)
PERFORMANCE OBJECTIVE		**SC05-S1C3-02.**	Analyze whether the data is consistent with the proposed explanation that motivated the investigation. • **Motion and Design**

			• TG: L04-5 (pp35-56), L07 (pp65-72), L10 (pp91-100), L12 (pp109-116) • L15-16 (pp139-152) • **Measuring Time** • TG: L09 (pp87-94), L11 (pp109-114), L16 (pp145-148) • **3-5 Space Science** • TG: Ses 1.9 (pp 152-167)
PERFORMANCE OBJECTIVE		**SC05-S1C3-03.**	Evaluate the reasonableness of the outcome of an investigation. . • **Motion and Design** • TG: L03 (pp25-34) • **3-5 Space Science** • TG: Ses 4.1-4.5 (pp 340-423)
PERFORMANCE OBJECTIVE		**SC05-S1C3-05.**	Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object). • **Motion and Design** • TG: L03-5 (pp25-56), L07-9 (pp65-90), L12 (pp109-116), L15-16 (pp139-152) • **Measuring Time** • TG: L07-8 (pp67-86), L10 (pp95-108), L12 (pp115-122), L15 (pp139-144)
STRAND		**AZ.SC05-S1.**	**Inquiry Process**
CONCEPT		**SC05-S1C4.**	Communication: Communicate results of investigations.
PERFORMANCE OBJECTIVE		**SC05-S1C4-01.**	Communicate verbally or in writing the results of an inquiry. (See W05-S3C3-01). • **Motion and Design** • TG: L02-3 (pp15-34), L06-10 (pp57-100), L13-14 (pp117-138), L16 (pp145-152) • **Measuring Time** • TG: L01 (pp13-20), L04 (pp43-48), L09 (pp87-94), L11 (pp109-114), L14 (pp135-138) • **3-5 Space Science** • TG: Ses 1 Post Assessment (pp 1-2), Ses 1 Pre Assessment (p 1) • Ses 1.1 –1.9 (pp 28-167), Ses 2 Post Assessment (pp 1-2, • Ses 2 Pre Assessment (p 1), 2.1 – 2.6 (pp 172-281), Ses 3 Post Assessment (pp 1-2) • Ses 3 Pre Assessment (pp 1-2), Ses 3.1 – 3.4 (pp 286-335), Ses 4 Post (pp 1-2) • Ses 4 Pre (pp 1-2), 4.1 – 4.5 (pp 340-423)
PERFORMANCE OBJECTIVE		**SC05-S1C4-02.**	Choose an appropriate graphic representation for collected data: bar graph; line graph; Venn diagram model (See M05-S2C1-02). • **Motion and Design** • TG: L02 (pp15-24), L14-16 (pp125-152) • **Measuring Time** • RB: (pp15-17), (pp24-38) • **3-5 Space Science** • TG: Ses 1.1 –1.3 (pp 28-67), 1.6 (pp 104-121), Ses 1.7 (pp 122-135) • Ses 2.2 – 2.6 (pp 182-281), Ses 3 Post Assessment (pp 1-2) • Ses 3 Pre Assessment (pp 1-2), Ses 3.1 (pp 286-299), Ses 3.3 (pp 312-323) • Ses 3.4 (pp 324-335), Ses 4 Post (pp 1-2), Ses 4 Pre (pp 1-2) • Ses 4.1 – 4.5 (pp 340-423)

PERFORMANCE OBJECTIVE		**SC05-S1C4-03.**	Communicate with other groups or individuals to compare the results of a common investigation. • **Motion and Design** TG: L01-4 (pp1-46), L06-17 (pp57-156) • **Measuring Time** • TG: L04 (pp43-48), L06 (pp59-66), L09 (pp87-94), L11 (pp109-114), L14 (pp135-138) L17 (pp149-150) • **3-5 Space Science** • TG: Ses 1 Post Assessment (pp 1-2), Ses 1 Pre Assessment (p 1) • Ses 1.1 –1.9 (pp 28-167), Ses 2 Post Assessment (pp 1-2) • Ses 2 Pre Assessment (p 1), 2.1 – 2.6 (pp 172-281), Ses 3 Post Assessment (pp 1-2) • Ses 3 Pre Assessment (pp 1-2), Ses 3.1 – 3.4 (pp 286-335), Ses 4 Post (pp 1-2) • Ses 4 Pre (pp 1-2), 4.1 – 4.5 (pp 340-423)
STRAND		**AZ.SC05-S2.**	**History and Nature of Science**
CONCEPT		**SC05-S2C1.**	History of Science as a Human Endeavor: Identify individual, cultural, and technological contributions to scientific knowledge.
PERFORMANCE OBJECTIVE		**SC05-S2C1-01.**	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). • **Motion and Design** • RB: (pp07-09), (pp23-28), (pp32-36), (pp41-46), (pp52-57) • **Measuring Time** • RB: (pp10-21), (pp24-27), (pp35-47), (pp50-52) • TG: L04 (pp43-48) • **3-5 Space Science** • TG: Ses 1.1 –1.9 (pp 28-167), (p 1), 2.1 – 2.6 (pp 172-281), Ses 3.1 – 3.4 (pp 286-335), 4.1 – 4.5 (pp 340-423)
STRAND		**AZ.SC05-S2.**	**History and Nature of Science**
CONCEPT		**SC05-S2C2.**	Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.
PERFORMANCE OBJECTIVE		**SC05-S2C2-01.**	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). • **Motion and Design** • TG: L15.Exts (p143) • RB: (pp35-38) • **3-5 Space Science** • TG: Ses 3.1 (pp 286-299)
PERFORMANCE OBJECTIVE		**SC05-S2C2-02.**	Explain the cycle by which new scientific knowledge generates new scientific inquiry. • **Motion and Design** • TG: L15.Exts (p143) • **Measuring Time** • RB: (pp35-38) • **3-5 Space Science** • TG: Ses 3.1 (pp 286-299)
PERFORMANCE OBJECTIVE		**SC05-S2C2-03.**	Describe how scientific knowledge is subject to modification and/or change as new information/technology challenges prevailing theories.

			• **Motion and Design** • TG: L15.Exts (p143) • RB: (pp35-38) • **3-5 Space Science** • TG: Ses 3.1 (pp 286-299)
PERFORMANCE OBJECTIVE		**SC05-S2C2-04.**	Compare collaborative approaches that scientists use for investigations (e.g., teams, individual with peer review). • **Motion and Design** • TG: L01 (pp1-14), L03-4 (pp25-46), L06-17 (pp57-156), L04 (pp43-48) • **3-5 Space Science** • TG: Ses 1.3 (pp 56-69) Ses 1.6 (pp 104-121), Ses 1.8 (pp 136-151 • Ses 2.1 – 2.5 (pp 172-259), Ses 3.2 (pp 300-311) Ses 3.3 (pp 312-323)
STRAND		**AZ.SC05-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		**SC05-S3C1.**	Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.
PERFORMANCE OBJECTIVE		**SC05-S3C1-02.**	Propose a solution, resource, or product that addresses a specific human, animal, or habitat need. • **3-5 Space Science** • TG: Ses 4.5 (pp 414-423)
PERFORMANCE OBJECTIVE		**SC05-S3C1-03.**	Evaluate the possible strengths and weaknesses of a proposed solution to a specific problem relevant to human, animal, or habitat needs. • **Motion and Design** • TG: L05-6 (pp47-64), L08 (pp73-80), L13-16 (pp117-152) • **Measuring Time** • TG: L06 (pp59-66), L11 (pp109-114), L14 (pp135-138), L16 (pp145-148) • **3-5 Space Science** • TG: Ses 1.9 (pp 152-167)
STRAND		**AZ.SC05-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		**SC05-S3C2.**	Science and Technology in Society: Develop viable solutions to a need or problem.
PERFORMANCE OBJECTIVE		**SC05-S3C2-02.**	Explain how scientific knowledge, skills, and technological capabilities are integral to a variety of careers. • **Measuring Time** • RB: (pp43-45)
PERFORMANCE OBJECTIVE		**SC05-S3C2-03.**	Design and construct a technological solution to a common problem or need using common materials. • **Motion and Design** • RB: (pp29-31), RB: (pp54-57), RB: (pp62) • TG: L01-2 (pp1-24), L05-6 (pp47-64), L09 (pp81-90), L11 (pp101-108) • L14-17 (pp125-156) • **Measuring Time** • TG: L04 (pp43-48), L07 (pp67-74), L09.Exts (p90), L16 (pp145-148) • **3-5 Space Science** • TG: Ses 4.5 (pp 414-423)

STRAND		**AZ.SC05-S5.**	**Physical Science**
CONCEPT		**SC05-S5C2.**	Motion and Forces: Understand the relationship between force and motion.
PERFORMANCE OBJECTIVE		**SC05-S5C2-01.**	Describe the following forces: Gravity; friction. • **Motion and Design** • RB: (pp23-28) • TG: L03.Exts (pp29-30), L07.Exts (pp68-69), L08 (pp73-80), L10-13 (pp91-124) • L15 (pp139-144)
PERFORMANCE OBJECTIVE		**SC05-S5C2-02.**	Describe the various effects forces can have on an object (e.g., cause motion, halt motion, change direction of motion, cause deformation). • **Motion and Design** • RB: (pp23-28) • TG: L03-5 (pp25-56), L07-13 (pp65-124), L15-17 (pp139-156) • **3-5 Space Science** • TG: Ses 1.1 (pp 28-45), Ses 2.1 – 2.6 (pp 172-281)
PERFORMANCE OBJECTIVE		**SC05-S5C2-03.**	Examine forces and motion through investigations using simple machines (e.g., wedge, plane, wheel and axle, pulley, lever). • **Motion and Design** • RB: (pp32-36) • **Measuring Time** • TG: L13 (pp123-134)
PERFORMANCE OBJECTIVE		**SC05-S5C2-04.**	Demonstrate effects of variables on an object's motion (e.g., incline angle, friction, applied forces). • **Motion and Design** • RB: (pp23-28) • TG: L03-5 (pp25-56), L07-13 (pp65-124), L15-17 (pp139-156) • **3-5 Space Science** • TG: Ses 1.1 (pp 28-45), Ses 2.1 – 2.6 (pp 172-281)
STRAND		**AZ.SC05-S6.**	**Earth and Space Science**
CONCEPT		**SC05-S6C2.**	Earth's Processes and Systems: Understand the processes acting on the Earth and their interaction with the Earth systems.
PERFORMANCE OBJECTIVE		**SC05-S6C2-01.**	Describe how the Moon's appearance changes during a four-week lunar cycle. • **Measuring Time** • RB: (pp15-17) • TG: L05-6 (pp49-56)) • **3-5 Space Science** • TG: Ses 4 Post (pp 1-2), Ses 4 Pre (pp 1-2),Ses 4.1 – 4.5(pp 340-423)
PERFORMANCE OBJECTIVE		**SC05-S6C2-02.**	Describe how Earth's rotation results in day and night at any particular location. • **Measuring Time** • RB: (pp24-27), (pp30-34) • TG: L02 (pp21-30) • **3-5 Space Science**

			• TG: Ses 3.1 – 3.4 (pp 286-335) • Ses 4.1 –4.5 (pp 340-423)
PERFORMANCE OBJECTIVE		**SC05-S6C2-03.**	Distinguish between revolution and rotation. • **Measuring Time** • RB: (pp24-27), (pp30-34), • TG: L02 (pp21-30) • **3-5 Space Science** • TG: Ses 3 Post Assessment (pp 1-2), Ses 3 Pre Assessment (pp 1-2) • Ses 3.1 – 3.4 (pp 286-335), 4.1 – 4.5 (pp 340-423)
PERFORMANCE OBJECTIVE		**SC05-S6C2-04.**	Describe the role of gravity as an attractive force between celestial objects. • **3-5 Space Science** • TG: Ses 2 Post Assessment (pp 1-2), Ses 2 Pre Assessment (p 1) • Ses 2.1 – 2.6 (pp 172-281),, 3.1 –3.4 (pp 286-335), Ses 4.1 –4.5 (pp 340-423)
STRAND		**AZ.SC05-S6.**	**Earth and Space Science**
CONCEPT		**SC05-S6C3.**	Earth in the Solar System: Understand the relationships of the Earth and other objects in the solar system.
PERFORMANCE OBJECTIVE		**SC05-S6C3-01.**	Identify the known planets of the solar system. • **3-5 Space Science** • TG: Ses 1.4 - 1.9 (pp 70-167)
PERFORMANCE OBJECTIVE		**SC05-S6C3-02.**	Describe the distinguishing characteristics of the known planets in the solar system. • **3-5 Space Science** • TG: Ses 1.2 (pp 46-55), Ses 1.4 – 1.9 (pp 70-167)
PERFORMANCE OBJECTIVE		**SC05-S6C3-03.**	Describe various objects in the sky (e.g., asteroids, comets, stars, meteors/shooting stars). • **3-5 Space Science** • TG: Ses 1 Post Assessment (pp 1-2), Ses 1 Pre Assessment (p 1) • Ses 1.2 (pp 46-55), Ses 1.4 – 1.9(pp 70-167), Ses 2.4 Reading (pp 1-2) • Ses 3 Post Assessment (pp 1-2), Ses 3 Pre Assessment (pp 1-2) • Ses 3.2 –3.3 (pp 300-323)
PERFORMANCE OBJECTIVE		**SC05-S6C3-05.**	Explain the apparent motion of the Sun and stars. • **Measuring Time** • RB: (pp10-14) TG: L06.Exts (p63) • **3-5 Space Science** • TG: Ses 1.1 - 1.3 (pp 28-69), Ses 3 Post Assessment (pp 1-2) • Ses 3 Pre Assessment (pp 1-2), Ses 3 Reading (pp 1-2), Ses 3.1 – 3.4 (pp 286-335) • Ses 4.1 (pp 340-364)
PERFORMANCE		**SC05-**	Describe efforts to explore space (e.g., Apollo missions, space shuttles, Hubble space telescope, space probes)

OBJECTIVE		S6C3-06.	(See Strand 2). • **Motion and Design** • RB: (pp44-46), pp62) • TG: L11.Exts (p107) • **3-5 Space Science** • Ses 1 Reading (p 2), Ses 1.1 –1.3 (pp 28-69), 1.6 –1.9 (pp 104-167) • 2.3 Reading (pp 1-2), Ses 2.4 Reading (pp 1-2), Ses 2.6 (pp 260-281) • Ses 3 Reading (pp 1-2), Ses 4 Reading (pp 41-2)

Microworlds, Electrical Energy and Circuit Design

Grade 6 – Science
Arizona Academic Standards

STRAND		AZ.SC06-S1.	Inquiry Process
CONCEPT		SC06-S1C1.	Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.
PERFORMANCE OBJECTIVE		SC06-S1C1-01.	Differentiate among a question, hypothesis, and prediction. • **Electrical Energy and Circuit Design** • SG: L02 (pp12-25), L04 (pp36-45), SG: L08-9 (pp84-103) • TG: L02 (pp23-36), L04 (pp49-60), L08-9 (pp111-142) • **Microworlds** • TG: L01-17 (pp3-88)
PERFORMANCE OBJECTIVE		SC06-S1C1-02.	Formulate questions based on observations that lead to the development of a hypothesis. (See M06-S2C1-01). • **Microworlds** • TG: L01 (pp3-8), L17 (pp87-88)
STRAND		AZ.SC06-S1.	Inquiry Process
CONCEPT		SC06-S1C2.	Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.
PERFORMANCE OBJECTIVE		SC06-S1C2-01.	Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11), L05 (pp46-57), L11-12 (pp118-133), L14-19 (pp144-209) • L22-23 (pp224-243) • TG: (pp xxxvii - xxxix), L01 (pp3-22), L05 (pp61-76), L11-12 (pp157-180) • L14-19 (pp205-276), L22-23 (pp299-312) • **Microworlds** • TG: S-Sec3 (pp11-24), L05 (pp25-30), L06 (pp31-36), L11 (pp61-66), L15-16 (pp79-86)
PERFORMANCE OBJECTIVE		SC06-S1C2-03.	Conduct a controlled investigation using scientific processes. • **Electrical Energy and Circuit Design** • SG: L01-24 (pp2-251) • TG: L01-24 (pp3-326)

			• **Microworlds** • TG: L01-17 (pp3-88)
PERFORMANCE OBJECTIVE		**SC06-S1C2-04.**	Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers) (See M06-S4C4-02). • **Electrical Energy and Circuit Design** • SG: L06-7 (pp58-83), L09 (pp94-103) • TG: L06-7 (pp77-110), L09 (pp123-142) • **Microworlds** • TG: L01-17 (pp3-88)
STRAND		**AZ.SC06-S1.**	**Inquiry Process**
CONCEPT		**SC06-S1C3.**	Analysis and Conclusions: Analyze and interpret data to explain correlations and results; formulate new questions.
PERFORMANCE OBJECTIVE		**SC06-S1C3-01.**	Analyze data obtained in a scientific investigation to identify trends (See M06-S2C1-03) . • **Electrical Energy and Circuit Design** • SG: L08 (pp84-93), L11 (pp118-121) • TG: L08 (pp111-122), TG: L11 (pp157-168) • **Microworlds** • TG: L02 (pp9-14), L04 (pp21-24)
PERFORMANCE OBJECTIVE		**SC06-S1C3-03.**	Evaluate the observations and data reported by others. • **Electrical Energy and Circuit Design** • SG: L03 (pp26-35), L08 (pp84-93), L11 (pp118-121) • TG: L03 (pp37-48), L08 (pp111-122), L11 (pp157-168) • **Microworlds** • TG: L01 (pp3-8), L03 (pp15-20), L17 (pp87-88)
PERFORMANCE OBJECTIVE		**SC06-S1C3-04.**	Interpret simple tables and graphs produced by others. • **Electrical Energy and Circuit Design** • SG: L08 (pp84-93), L13 (pp134-141), L15-18 (pp156-195) • TG: L08 (pp111-122), L09.Exts (pp134-135), L10.Exts (pp152-153), L13 (pp181-204) L15-18 (pp213-262)
PERFORMANCE OBJECTIVE		**SC06-S1C3-05.**	Analyze the results from previous and/or similar investigations to verify the results of the current investigation. • **Electrical Energy and Circuit Design** • SG: L02 (pp12-25) • TG: L02 (pp23-36)
PERFORMANCE OBJECTIVE		**SC06-S1C3-06.**	Formulate new questions based on the results of a completed investigation. • **Microworlds** • TG: L01 (pp3-8), L17 (pp87-88)
STRAND		**AZ.SC06-S1.**	**Inquiry Process**
CONCEPT		**SC06-S1C4.**	Communication: Communicate results of investigations.

PERFORMANCE OBJECTIVE		**SC06-S1C4-01.**	Choose an appropriate graphic representation for collected data: line graph; double bar graph; stem and leaf plot; histogram (See M06-S2C1-02). • **Electrical Energy and Circuit Design** • SG: L04-5 (pp36-57), L08 (pp84-93), L11-18 (pp118-195), L20 (pp210-213) • L24 (pp244-251) • TG: L02.Exts (pp35-36), L04--5 (pp49-76), L06.Exts (p92), L08 (pp111-122) • L09.Exts (pp134-135), L10.Exts (pp152-153) L11-18 (pp157-262), L20 (pp277-290) L21.Exts (p295), L22.Exts (p304), L24 (pp313-326) • **Microworlds** • RB: (pp07-25), (pp28-43), (pp46-47), (pp48-61) • TG: App-A (pp89-92), L01-4 (pp3-24), L06-17 (pp31-88)
PERFORMANCE OBJECTIVE		**SC06-S1C4-02.**	Display data collected from a controlled investigation. (See M06-S2C1-02) . • **Electrical Energy and Circuit Design** • SG: L04-5 (pp36-57), L08 (pp84-93), L11-18 (pp118-195), L20 (pp210-213) • L24 (pp244-251) • TG: L02.Exts (pp35-36), L04--5 (pp49-76), L06.Exts (p92), L08 (pp111-122) • L09.Exts (pp134-135), L10.Exts (pp152-153) • L11-18 (pp157-262), L20 (pp277-290), L21.Exts (p295), L22.Exts (p304) • L24 (pp313-326) • **Microworlds** • RB: (pp07-25), (pp28-43), (pp46-47), (pp48-61) • TG: App-A (pp89-92), L01-4 (pp3-24), L06-17 (pp31-88)
PERFORMANCE OBJECTIVE		**SC06-S1C4-03.**	Communicate the results of an investigation with appropriate use of qualitative and quantitative information. (See W06-S3C2-01) . • **Electrical Energy and Circuit Design** • SG: L03 (pp26-35), L08 (pp84-93), L11 (pp118-121), L24 (pp244-251) • TG: L03 (pp37-48), L08 (pp111-122), L11 (pp157-168), L24 (pp313-326) • **Microworlds** • TG: L01-2 (pp3-14
PERFORMANCE OBJECTIVE		**SC06-S1C4-05.**	Communicate the results and conclusion of the investigation. (See W06-S3C6-02). • **Electrical Energy and Circuit Design** • SG: L03 (pp26-35), L20 (pp210-213), L24 (pp244-251) • TG: L03 (pp37-48), L20 (pp277-290), L24 (pp313-326) • **Microworlds** • TG: L01-2 (pp3-14)
STRAND		**AZ.SC06-S2.**	**History and Nature of Science**
CONCEPT		**SC06-S2C1.**	History of Science as a Human Endeavor: Identify individual, cultural, and technological contributions to scientific knowledge.
PERFORMANCE OBJECTIVE		**SC06-S2C1-01.**	Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Jacques Cousteau [inventor, marine explorer], supports Strand 4; William Beebe [scientist], supports Strand 4; Thor Heyerdahl [anthropologist], supports Strand 6). • **Microworlds** • RB: (pp48-55) • TG: L05 (pp25-30)

PERFORMANCE OBJECTIVE		SC06-S2C1-02.	Describe how a major milestone in science or technology has revolutionized the thinking of the time (e.g., Cell Theory, sonar, SCUBA, underwater robotics). • **Microworlds** • RB: (pp10-12)
PERFORMANCE OBJECTIVE		SC06-S2C1-03.	Analyze the impact of a major scientific development occurring within the past decade. • **Microworlds** • RB: (pp10-12)
STRAND		**AZ.SC06-S2.**	**History and Nature of Science**
CONCEPT		SC06-S2C2.	Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.
PERFORMANCE OBJECTIVE		SC06-S2C2-01.	Describe how science is an ongoing process that changes in response to new information and discoveries. • **Electrical Energy and Circuit Design** • SG: L02 (pp12-25) • TG: L02 (pp23-36) • **Microworlds** • RB: (pp10-12)
PERFORMANCE OBJECTIVE		SC06-S2C2-02.	Describe how scientific knowledge is subject to change as new information and/or technology challenges prevailing theories. • **Electrical Energy and Circuit Design** • SG: L02 (pp12-19), 07 (pp62-71), L15-16 (pp140-161) • TG: L16 (pp185-202) • **Microworlds** • RB: (pp10-12)
PERFORMANCE OBJECTIVE		SC06-S2C2-03.	Apply the following scientific processes to other problem solving or decision making situations: observing; questioning; communicating; comparing; measuring; classifying; predicting; organizing data; inferring; generating hypotheses; identifying variables. • **Electrical Energy and Circuit Design** • SG: L01-24 (pp2-251) • TG: L01-24 (pp3-326) • **Microworlds** • TG: L01-17 (pp3-88)
STRAND		**AZ.SC06-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		SC06-S3C1.	Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.
PERFORMANCE OBJECTIVE		SC06-S3C1-01.	Evaluate the effects of the following natural hazards: Sandstorm; hurricane; tornado; ultraviolet light; lightning-caused fire. • **Electrical Energy and Circuit Design** • TG: L02.Exts (pp35-36) • **Microworlds** • RB: (pp13- 15)

STRAND		**AZ.SC06-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		**SC06-S3C2.**	Science and Technology in Society: Develop viable solutions to a need or problem.
PERFORMANCE OBJECTIVE		**SC06-S3C2-03.**	Design and construct a solution to an identified need or problem using simple classroom materials. • **Electrical Energy and Circuit Design** • SG: L04 (pp36-45), L07-8 (pp70-93), L13 (pp134-141), L15 (pp156-167) • L17 (pp174-185), L24 (pp244-251) • TG: L02.Exts (pp35-36), L04 (pp49-60), L07 (pp93-110), L13 (pp181-204) • L15 (pp213-226), L16.Exts (pp236-237),L17 (pp240-248) L23.Exts (p312) • L24 (pp313-326)
PERFORMANCE OBJECTIVE		**SC06-S3C2-04.**	Describe a technological discovery that influences science. • **Electrical Energy and Circuit Design** • SG: L02 (pp12-25) • TG: L02 (pp23-36)
STRAND		**AZ.SC06-S4.**	**Life Science**
CONCEPT		**SC06-S4C1.**	Structure and Function in Living Systems: Understand the relationships between structures and functions of organisms.
PERFORMANCE OBJECTIVE		**SC06-S4C1-02.**	Describe the basic structure of a cell, including: cell wall; cell membrane; nucleus. • **Microworlds** • TG: L11-16 (pp61-86)
PERFORMANCE OBJECTIVE		**SC06-S4C1-03.**	Describe the function of each of the following cell parts: cell wall; cell membrane; nucleus. • **Microworlds** • TG: L11-16 (pp61-86)
PERFORMANCE OBJECTIVE		**SC06-S4C1-04.**	Differentiate between plant and animal cells. • **Microworlds** • TG: L11 (pp61-66)
STRAND		**AZ.SC06-S5.**	**Physical Science**
CONCEPT		**SC06-S5C3.**	Transfer of Energy: Understand that energy can be stored and transferred.
PERFORMANCE OBJECTIVE		**SC06-S5C3-01.**	Identify various ways in which electrical energy is generated using renewable and nonrenewable resources (e.g., wind, dams, fossil fuels, nuclear reactions). • **Electrical Energy and Circuit Design** • SG: L19 (pp196-209) • TG: L01.Exts (p16) L19 (pp263-276)
PERFORMANCE OBJECTIVE		**SC06-S5C3-02.**	Identify several ways in which energy may be stored. • **Electrical Energy and Circuit Design** • SG: L07 (pp70-83), L09 (pp94-103)

			• TG: L07 (pp93-110), TG: L09 (pp123-142)
PERFORMANCE OBJECTIVE		SC06-S5C3-03.	Compare the following ways in which energy may be transformed: mechanical to electrical; electrical to thermal. • **Electrical Energy and Circuit Design** • SG: L01-2 (pp2-25), L08-10 (pp84-117), L12 (pp122-133), L15-19 (pp156-209) • TG: L01-2 (pp3-36), L08-10 (pp111-156), L12 (pp169-180), L15-19 (pp213-276)
STRAND		**AZ.SC06-S6.**	**Earth and Space Science**
CONCEPT		SC06-S6C1.	Structure of the Earth: Describe the composition and interactions between the structure of the Earth and its atmosphere.
PERFORMANCE OBJECTIVE		SC06-S6C1-03.	Explain the composition, properties, and structures of the oceans' zones and layers. • **Electrical Energy and Circuit Design** • TG: L15.Exts (pp180-181)

Catastrophic Events, Earth in Space

Grade 7 - Science
Arizona Academic Standards

STRAND		**AZ.SC07-S1.**	**Inquiry Process**
CONCEPT		SC07-S1C1.	Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.
PERFORMANCE OBJECTIVE		SC07-S1C1-01.	Formulate questions based on observations that lead to the development of a hypothesis (See M07-S2C1-01). • **Earth in Space** • SG: L01 (pp2-11), L21 (pp334-339) • TG: L01 (pp3-10), L21 (pp309-310)
PERFORMANCE OBJECTIVE		SC07-S1C1-02.	Select appropriate resources for background information related to a question, for use in the design of a controlled investigation (See W07-S3C6-01, R07-S3C1-06, and R07-S3C2-03). • **Catastrophic Events** • TG: L09.Exts (p132), L13.Exts (p182)
PERFORMANCE OBJECTIVE		SC07-S1C1-03.	Explain the role of a hypothesis in a scientific inquiry. • **Catastrophic Events** • SG: L13-14 (pp154-169), L20 (pp224-231), L22-23 (pp240-263) • TG: L13-14 (pp177-196), L20 (pp279-292), L22-23 (pp303-328)
STRAND		**AZ.SC07-S1.**	**Inquiry Process**
CONCEPT		SC07-S1C2.	Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.
PERFORMANCE OBJECTIVE		SC07-S1C2-01.	Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. • **Catastrophic Events** • SG: L19 (pp210-223), L22 (pp240-251)

			• TG: (pp xxxiii - xxxv), L19 (pp265-278), L22 (pp303-316) • **Earth in Space** • SG: L02-22 (pp12-343) • TG: (pp xxxiv - xxxvi), L01-226 (pp3-326)
PERFORMANCE OBJECTIVE		**SC07-S1C2-02.**	Design an investigation to test individual variables using scientific processes. • **Catastrophic Events** • SG: L25 (pp274-282) • TG: L25 (pp347-372)
PERFORMANCE OBJECTIVE		**SC07-S1C2-03.**	Conduct a controlled investigation, utilizing multiple trials, to test a hypothesis using scientific processes. • **Catastrophic Events** • SG: L01-25 (pp2-282) • TG: L01-25 (pp3-372) • **Earth in Space** • SG: L01 (pp2-11), L04-6 (pp42-87), L09 (pp122-127), L11 (pp146-159) • L13-14 (pp174-215), L18 (pp290-311), L20 (pp324-333), L22 (pp340-343) • TG: L01 (pp3-10), L04-6 (pp37-82), L09-11 (pp121-180), L13-14 (pp197-220) • L18-20 (pp277-308), L22 (pp311-326)
PERFORMANCE OBJECTIVE		**SC07-S1C2-04.**	Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers). • **Catastrophic Events** • SG: L12 (pp134-153), L14 (pp164-169), L16 (pp190-193), L22-23 (pp240-263) • TG: L12 (pp163-176), L14 (pp187-196), L16 (pp219-232), L22-23 (pp303-328) • **Earth in Space** • SG: L01-22 (pp2-343) • TG: L01-22 (pp3-326)
STRAND		**AZ.SC07-S1.**	**Inquiry Process**
CONCEPT		**SC07-S1C3.**	Analysis and Conclusions: Analyze and interpret data to explain correlations and results; formulate new questions.
PERFORMANCE OBJECTIVE		**SC07-S1C3-01.**	Analyze data obtained in a scientific investigation to identify trends. (See M07-S2C1-07 and M07-S2C1-08) . • **Catastrophic Events** • SG: L12-13 (pp134-163), L15 (pp170-189), L17 (pp194-197), L25 (pp274-282) • TG: L06.Exts (pp77-78), L12-13 (pp163-186), L15 (pp197-218), L17 (pp233-256) • L25 (pp347-372) • **Earth in Space** • SG: L03 (pp22-41), L22 (pp340-343) • TG: L03 (pp21-36), L22 (pp311-326)
PERFORMANCE OBJECTIVE		**SC07-S1C3-03.**	Analyze results of data collection in order to accept or reject the hypothesis. • **Catastrophic Events** • SG: L12-15 (pp134-189), L17 (pp194-197), L20 (pp224-231), L22-23 (pp240-263) • L25 (pp274-282) • TG: L06.Exts (pp77-78), L12-15 (pp163-218), L17 (pp233-256), L20 (pp279-292) • L22-23 (pp303-328), L25 (pp347-372) • **Earth in Space**

			• SG: L03 (pp22-41), L22 (pp340-343) • TG: L03 (pp21-36), L22 (pp311-326)
PERFORMANCE OBJECTIVE		**SC07-S1C3-05.**	Formulate a conclusion based on data analysis. • **Catastrophic Events** • SG: L12 (pp134-153), L22-25 (pp240-282) • TG: L12 (pp163-176), L22-25 (pp303-372) • **Earth in Space** • SG: L04 (pp42-61), L22 (pp340-343) • TG: L04 (pp37-52), L22 (pp311-326)
PERFORMANCE OBJECTIVE		**SC07-S1C3-06.**	Refine hypotheses based on results from investigations. • **Catastrophic Events** • SG: L13-14 (pp154-169), L20 (pp224-231), L22-23 (pp240-263) • TG: L13-14 (pp177-196), L20 (pp279-292), L22-23 (pp303-328)
PERFORMANCE OBJECTIVE		**SC07-S1C3-07.**	Formulate new questions based on the results of a previous investigation. • **Earth in Space** • SG: L01 (pp2-11), L21 (pp334-339) • TG: L01 (pp3-10), L21 (pp309-310)
STRAND		**AZ.SC07-S1.**	**Inquiry Process**
CONCEPT		**SC07-S1C4.**	Communication: Communicate results of investigations.
PERFORMANCE OBJECTIVE		**SC07-S1C4-01.**	Choose an appropriate graphic representation for collected data: line graph; double bar graph; stem and leaf plot; histogram (See M07-S2C1-03). • **Catastrophic Events** • SG: L13 (pp154-163), L19-21 (pp210-239), L23-25 (pp252-282) • TG: L03.Exts (pp35-36), L04.Exts (p54), L06.Exts (pp77-78), L13 (pp177-186) • L16.Exts (p225), L19-21 (pp265-302), L22.Exts (p312), L23-25 (pp217-372) • **Earth in Space** • SG: L03-4 (pp22-61), L21-22 (pp334-343) • TG: L03-4 (pp21-52), L21-22 (pp309-326)
PERFORMANCE OBJECTIVE		**SC07-S1C4-02.**	Display data collected from a controlled investigation. (See M07-S2C1-03). • **Catastrophic Events** • SG: L13 (pp154-163), L19-21 (pp210-239), L23-25 (pp252-282) • TG: L03.Exts (pp35-36), L04.Exts (p54), L06.Exts (pp77-78), L13 (pp177-186) • L16.Exts (p225), L19-21 (pp265-302), L22.Exts (p312), L23-25 (pp217-372) • **Earth in Space** • SG: L03-4 (pp22-61), L21-22 (pp334-343) • TG: L03-4 (pp21-52), L21-22 (pp309-326)
PERFORMANCE OBJECTIVE		**SC07-S1C4-03.**	Communicate the results of an investigation with appropriate use of qualitative and quantitative information. (See W07-S3C2-01). • **Catastrophic Events** • SG: L01-25 (pp2-282)

			• TG: L01-25 (pp3-372) • **Earth in Space** • SG: L01 (pp2-11), L03 (pp22-41), L05 (pp62-73), L09-11 (pp122-159), L14 (pp200-215) L18-19 (pp290-323), L22 (pp340-343) • TG: L01 (pp3-10), L02.Exts (pp18-19),L03 (pp21-36), L05 (pp53-72), L09-11 (pp121-180) L13-14 (pp197-220), L18-19 (pp277-292), L20.Exts (p297), L21.Exts (p310) • L22 (pp311-326)
PERFORMANCE OBJECTIVE		**SC07-S1C4-05.**	Communicate the results and conclusion of the investigation. (See W07-S3C6-02) . • **Catastrophic Events** • SG: L01-25 (pp2-282) • TG: L01-25 (pp3-372) • **Earth in Space** • SG: L01 (pp2-11), L04-5 (pp42-73), L09-11 (pp122-159), L14 (pp200-215) • L18-19 (pp290-323), L22 (pp340-343) • TG: L01 (pp3-10), L04-5 (pp37-72), L09-11 (pp121-180), L13-14 (pp197-220) • L18-19 (pp277-292), L20.Exts (p297), L21.Exts (p310), L22 (pp311-326)
STRAND		**AZ.SC07-S2.**	**History and Nature of Science**
CONCEPT		**SC07-S2C1.**	History of Science as a Human Endeavor: Identify individual, cultural, and technological contributions to scientific knowledge.
PERFORMANCE OBJECTIVE		**SC07-S2C1-01.**	Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Rachel Carson [scientist], supports Strand 4; Luis Alvarez [scientist] and Walter Alvarez [scientist], support Strand 6; Percival Lowell [scientist], supports Strand 6; Copernicus [scientist], supports Strand 6). • **Catastrophic Events** • SG: L15 (pp170-189) • TG: L15 (pp197-218) • **Earth in Space** • SG: L03 (pp22-41), L10 (pp130-145), L21 (pp334-339) • TG: L01 (pp3-10), L02.Exts (pp18-19), L03 (pp21-36), L08 (pp97-120), L10 (pp147-158) L17.Exts (pp275-276), L21 (pp309-310)
PERFORMANCE OBJECTIVE		**SC07-S2C1-02.**	Describe how a major milestone in science or technology has revolutionized the thinking of the time (e.g., global positioning system, telescopes, seismographs, photography). • **Catastrophic Events** • SG: L10 (pp114-119), L14 (pp164-169), L21 (pp232-239) • TG: L10 (pp143-148), L14 (pp187-196), L21 (pp293-302) • **Earth in Space** • SG: L10 (pp130-145), L20-21 (pp324-339) • TG: L04 (pp37-52), L10 (pp147-158), L20-21 (pp293-310)
PERFORMANCE OBJECTIVE		**SC07-S2C1-03.**	Analyze the impact of a major scientific development occurring within the past decade. • **Catastrophic Events** • SG: L09 (pp102-112), L14 (pp164-169), L21 (pp232-239) • TG: L09 (pp127-142), L14 (pp187-196), : L21 (pp293-302) • **Earth in Space** • SG: L10 (pp130-145), L20-21 (pp324-339) • TG: L04 (pp37-52), L10 (pp147-158), L20-21 (pp293-310)
STRAND		**AZ.SC07-**	**History and Nature of Science**

		S2.	
CONCEPT		SC07-S2C2.	Nature of Scientific Knowledge Understand how science is a process for generating knowledge.
PERFORMANCE OBJECTIVE		SC07-S2C2-01.	Describe how science is an ongoing process that changes in response to new information and discoveries. • **Catastrophic Events** • SG: L14 (pp164-169), L18 (pp200-209), L21 (pp232-239) • TG: L14 (pp187-196), L18 (pp257-264), L21 (pp293-302) • **Earth in Space** • SG: L10 (pp130-145), L20-21 (pp324-339) • TG: L04 (pp37-52), L10 (pp147-158), L20-21 (pp293-310)
PERFORMANCE OBJECTIVE		SC07-S2C2-02.	Describe how scientific knowledge is subject to change as new information and/or technology challenges prevailing theories. • **Catastrophic Events** • SG: L14 (pp164-169), L18 (pp200-209), L21 (pp232-239) • TG: L14 (pp187-196), L18 (pp257-264), L21 (pp293-302) • **Earth in Space** • SG: L10 (pp130-145), L20-21 (pp324-339) • TG: L04 (pp37-52), L10 (pp147-158), L20-21 (pp293-310)
PERFORMANCE OBJECTIVE		SC07-S2C2-03.	Apply the following scientific processes to other problem solving or decision making situations: Observing; questioning; communicating; comparing; measuring; classifying; predicting; organizing data; inferring; generating hypotheses; identifying variables. • **Catastrophic Events** • SG: L01-25 (pp2-282) • TG: L01-25 (pp3-372) • **Earth in Space** • SG: L01 (pp2-11), L03-5 (pp22-73), L09-11 (pp122-159), L13-14 (pp174-215) • L18-22 (pp290-343) • TG: L01 (pp3-10), L03-5 (pp21-72), L09-11 (pp121-180), L13-14 (pp197-220) • L18-22 (pp277-326)
STRAND		**AZ.SC07-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		SC07-S3C1.	Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.
PERFORMANCE OBJECTIVE		SC07-S3C1-01.	Analyze environmental risks (e.g., pollution, destruction of habitat) caused by human interaction with biological or geological systems. • **Catastrophic Events** • SG: L09 (pp102-112) • TG: L09 (pp127-142)
PERFORMANCE OBJECTIVE		SC07-S3C1-03.	Propose possible solutions to address the environmental risks in biological or geological systems. • **Catastrophic Events** • SG: L09 (pp102-112), L24 (pp264-273) • TG: L09 (pp127-142), L24 (pp329-346)
STRAND		**AZ.SC07-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		SC07-	Science and Technology in Society: Develop viable solutions to a need or problem.

		S3C2.	
PERFORMANCE OBJECTIVE		SC07-S3C2-01.	Propose viable methods of responding to an identified need or problem. . • **Catastrophic Events** • SG: L09 (pp102-112) • TG: L09 (pp127-142)
PERFORMANCE OBJECTIVE		SC07-S3C2-02.	Compare solutions to best address an identified need or problem. • **Catastrophic Events** • SG: L09 (pp102-112) • TG: L09 (pp127-142)
PERFORMANCE OBJECTIVE		SC07-S3C2-03.	Design and construct a solution to an identified need or problem using simple classroom materials. . • **Catastrophic Events** • SG: L17 (pp194-197), L24-25 (pp264-282) • TG: L02.Exts (p23), L03.Exts (pp35-36), L06.Exts (pp77-78), L14.Exts (pp193-194) • L17 (pp233-256), L18.Exts (pp262-263), L23.Exts (pp325-326), L24 -25(pp329-372) • **Earth in Space** • SG: L22 (pp340-343) • TG: L10.Exts (p152), L20.Exts (p297), L22 (pp311-326)
PERFORMANCE OBJECTIVE		SC07-S3C2-04.	Describe a scientific discovery that influences technology. • **Earth in Space** • SG: L20-21 (pp324-339) • TG: L20-21 (pp293-310)
STRAND		**AZ.SC07-S4.**	**Life Science**
CONCEPT		SC07-S4C3.	Populations of Organisms in an Ecosystem: Analyze the relationships among various organisms and their environment.
PERFORMANCE OBJECTIVE		SC07-S4C3-01.	Compare food chains in a specified ecosystem and their corresponding food web. . • **Earth in Space** • TG: L07.Exts (pp92-93)
PERFORMANCE OBJECTIVE		SC07-S4C3-05.	Predict how environmental factors (e.g., floods, droughts, temperature changes) affect survival rates in living organisms. • **Catastrophic Events** • SG: L01-25 (pp2-282) • TG: L01-25 (pp3-372) • **Earth in Space** • SG: L17 (pp268-289) • TG: L10.Exts (p152), L17 (pp269-276)
PERFORMANCE OBJECTIVE		SC07-S4C3-06.	Create a model of the interactions of living organisms within an ecosystem. • **Earth in Space** • TG: L07.Exts (pp92-93)

STRAND		AZ.SC07-S6.	Earth and Space Science
CONCEPT		SC07-S6C1.	Structure of the Earth: Describe the composition and interactions between the structure of the Earth and its atmosphere.
PERFORMANCE OBJECTIVE		SC07-S6C1-01.	Classify rocks and minerals by the following observable properties: Grain; color; texture; hardness. • **Catastrophic Events** • SG: L21-22 (pp232-251), L25 (pp274-282) • TG: L21-22 (pp293-316), L25 (pp347-372) • **Earth in Space** • SG: L18 (pp290-311) • TG: L18 (pp277-286)
PERFORMANCE OBJECTIVE		SC07-S6C1-02.	Describe the properties and the composition of the following major layers of the Earth: Crust; mantle; core. • **Catastrophic Events** • SG: L10 (pp114-119), L14-18 (pp164-209) • TG: L10 (pp143-148), L14-8 (pp187-264)
PERFORMANCE OBJECTIVE		SC07-S6C1-03.	Explain the following processes involved in the formation of the Earth's structure: Erosion; deposition; plate tectonics; volcanism. • **Catastrophic Events** • SG: L15 (pp170-189), L18-20 (pp200-231), L23-25 (pp252-282) • TG: L15 (pp197-218), L18-20 (pp257-292), L23-25 (pp217-372) • **Earth in Space** • SG: L13 (pp174-199) • TG: L13 (pp197-208)
STRAND		AZ.SC07-S6.	Earth and Space Science
CONCEPT		SC07-S6C2.	Earth's Processes and Systems: Understand the processes acting on the Earth and their interaction with the Earth systems.
PERFORMANCE OBJECTIVE		SC07-S6C2-01.	Explain the rock cycle. • **Catastrophic Events** • SG: L21-22 (pp232-251) • TG: L21-22 (pp293-316)
PERFORMANCE OBJECTIVE		SC07-S6C2-02.	Distinguish the components and characteristics of the rock cycle for the following types of rocks: Igneous; metamorphic; sedimentary. • **Catastrophic Events** • SG: L21-23 (pp232-263) • TG: L21-23 (pp293-328) • **Earth in Space** • TG: L12.Exts (pp192-193) • TG: L18.Exts (pp285-286)
PERFORMANCE OBJECTIVE		SC07-S6C2-03.	Analyze the evidence that lithospheric plate movements occur. • **Catastrophic Events** • SG: L10 (pp114-119), L13-18 (pp154-209) • TG: L10-18 (pp143-264)

			• **Earth in Space** • SG: L13 (pp174-199) • TG: L13 (pp197-208)
PERFORMANCE OBJECTIVE		**SC07-S6C2-04.**	Explain lithospheric plate movement as a result of convection. • **Catastrophic Events** • SG: L16 (pp190-193) • TG: L16 (pp219-232)
PERFORMANCE OBJECTIVE		**SC07-S6C2-05.**	Relate plate boundary movements to their resulting landforms, including: Mountains; faults; rift valleys; trenches; volcanoes. • **Catastrophic Events** • SG: L10 (pp114-119), L13-18 (pp154-209) • TG: L10-18 (pp143-264) • **Earth in Space** • SG: L13 (pp174-199) • TG: L13 (pp197-208)
PERFORMANCE OBJECTIVE		**SC07-S6C2-06.**	Describe how earthquakes are measured. • **Catastrophic Events** • SG: L12 (pp134-153) • TG: L12 (pp163-176) • **Earth in Space** • TG: L05 (pp53-72), L12 (pp181-196)
STRAND		**AZ.SC07-S6.**	**Earth and Space Science**
CONCEPT		**SC07-S6C3.**	Earth in the Solar System: Understand the relationships of the Earth and other objects in the solar system.
PERFORMANCE OBJECTIVE		**SC07-S6C3-01.**	Explain the phases of the Moon in terms of the relative positions of the Earth, Sun, and Moon. • **Catastrophic Events** • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11), L07 (pp83-102) • **Earth in Space** • SG: L01-9 (pp2-127), L16 (pp244-265) • TG: L01-9 (pp3-146), L16 (pp245-268)
PERFORMANCE OBJECTIVE		**SC07-S6C3-02.**	Construct a model for the relative positions of the Earth, Sun, and Moon as they relate to corresponding eclipses. • **Catastrophic Events** • SG: L07 (pp80-95) • TG: L01.6Exts (pp10-11), L07 (pp83-102) • **Earth in Space** • SG: L01-9 (pp2-127) • TG: L01-9 (pp3-146)
PERFORMANCE OBJECTIVE		**SC07-S6C3-03.**	Explain the interrelationship between the Earth's tides and the Moon. • **Catastrophic Events**

			• SG: L07 (pp80-95) • TG: L01.Exts (pp10-11), L07 (pp83-102) • **Earth in Space** • SG: L01-9 (pp2-127), L16 (pp244-265) • TG: L01-9 (pp3-146), L16 (pp245-268)
PERFORMANCE OBJECTIVE		SC07-S6C3-04.	Explain the seasons in the Northern and Southern Hemispheres in terms of the tilt of the Earth's axis relative to the Earth's revolution around the Sun. • **Catastrophic Events** • SG: L03 (pp26-41), L07 (pp80-95) • TG: L01.Exts (pp10-11), L03 (pp27-44), L07 (pp83-102) • **Earth in Space** • SG: L02-4 (pp12-61), L06 (pp74-87), L08 (pp102-121), L16 (pp244-265) • TG: L02-4 (pp11-52), L06 (pp73-82), L08 (pp97-120), L16 (pp245-268)
PERFORMANCE OBJECTIVE		SC07-S6C3-05.	Identify the following major constellations visible (seasonally) from the Northern Hemisphere: Orion; Ursa Major (Great Bear); Cygnus; Scorpius; Cassiopeia. • **Earth in Space** • TG: L01.Exts (p10)
PERFORMANCE OBJECTIVE		SC07-S6C3-06.	Explain the relationship among common objects in the solar system, galaxy, and the universe. • **Earth in Space** • SG: L01-22 (pp2-343) • TG: L01-22 (pp3-326)

Energy, Machines, and Motion, Organisms - From Macro to Micro, Properties of Matter

Grade 8 - Science
Arizona Academic Standards

STRAND		AZ.SC08-S1.	Inquiry Process
CONCEPT		SC08-S1C1.	Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.
PERFORMANCE OBJECTIVE		SC08-S1C1-02.	Use appropriate research information, not limited to a single source, to use in the development of a testable hypothesis. (See W08-S3C6-01, R08-S3C1-06, and R08-S3C2-03). • **Energy, Machines, and Motion** • SG: L17 (pp164-173) • TG: L17 (pp203-216) • **Properties of Matter** • TG: L16.Exts (p178), L23.Exts (p284)
STRAND		AZ.SC08-S1.	Inquiry Process
CONCEPT		SC08-S1C2.	Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.
PERFORMANCE OBJECTIVE		SC08-S1C2-01.	Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry.

			• **Energy, Machines, and Motion** • SG: L01-13 (pp2-129), L16 (pp148-161), L18-21 (pp174-225) • TG: (pp xxxiii - xxxv) L01-13 (pp3-166), L16 (pp185-202), L18-21 (pp217-246) • **Organisms - From Macro to Micro** • SG: L02-20 (pp12-243) • TG: (pp xxxiv-xxxv), L02-20 (pp15-350) • **Properties of Matter** • SG: L01-26 (pp2-235) • TG: (pp xxxi - xxxiii), L01-26 (pp3-332
PERFORMANCE OBJECTIVE		**SC08-S1C2-02.**	Design a controlled investigation to support or reject a hypothesis. • **Energy, Machines, and Motion** • SG: L07 (pp62-71) • TG: L07 (pp75-84) • **Organisms - From Macro to Micro** • SG: L15 (pp180-187) • TG: L15 (pp253-266) • **Properties of Matter** • SG: L13 (pp112-115), L15-16 (pp122-139), L23-24 (pp208-223) • TG: L13 (pp143-152), L15-16 (pp161-178), L23-24 (pp275-302)
PERFORMANCE OBJECTIVE		**SC08-S1C2-03.**	Conduct a controlled investigation to support or reject a hypothesis. • **Energy, Machines, and Motion** • SG: L01-22 (pp2-236) • TG: L01-22 (pp3-254) • **Organisms - From Macro to Micro** • SG: L01-20 (pp2-243) • TG: L01-20 (pp3-350) • **Properties of Matter** • SG: L01-26 (pp2-235) • TG: L01-26 (pp3-332)
PERFORMANCE OBJECTIVE		**SC08-S1C2-04.**	Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers). • **Energy, Machines, and Motion** • SG: L01-22 (pp2-236) • TG: L01-22 (pp3-254) • **Organisms - From Macro to Micro** • SG: L01-20 (pp2-243) • TG: L01-20 (pp3-350) • **Properties of Matter** • SG: L01-26 (pp2-235) • TG: L01-26 (pp3-332)
PERFORMANCE OBJECTIVE		**SC08-S1C2-05.**	Keep a record of observations, notes, sketches, questions, and ideas using tools such as written and/or computer logs. (See W08-S3C2-01 and W08-S3C3-01). • **Properties of Matter** • SG: L01-26 (pp2-235) • TG: L01-26 (pp3-332)

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STRAND		**AZ.SC08-S1.**	**Inquiry Process**
CONCEPT		**SC08-S1C3.**	Analysis and Conclusions: Analyze and interpret data to explain correlations and results; formulate new questions.
PERFORMANCE OBJECTIVE		**SC08-S1C3-01.**	Analyze data obtained in a scientific investigation to identify trends. (See M08-S2C1-08). • **Energy, Machines, and Motion** • SG: L07 (pp62-71), L10 (pp92-97), L13 (pp120-129), L15 (pp140-147) • TG: L04 (pp37-46), L07 (pp75-84), L10 (pp107-130), L13 (pp157-166), L15-16 (pp177-202) • **Properties of Matter** • SG: L03-4 (pp24-37), L08-9 (pp74-83), L13-14 (pp112-121), L17 (pp140-149) • L19 (pp162-167), L23-24 (pp208-223), L26 (pp230-235) • TG: L03-4 (pp27-48), L08-9 (pp91-112), L13-14 (pp143-160), L17 (pp179-192) • L19 (pp209-226), L23-24 (pp275-302), L26 (pp313-332)
PERFORMANCE OBJECTIVE		**SC08-S1C3-03.**	Interpret data that show a variety of possible relationships between two variables, including: positive relationship; negative relationship; no relationship. • **Energy, Machines, and Motion** • SG: L04-5 (pp26-47), L08-13 (pp72-129), L15 (pp140-147), L18 (pp174-187) • TG: L04-6 (pp37-74), TG: L08-13 (pp85-166), L15-16 (pp177-202), L18-19 (pp217-234) • **Properties of Matter** • SG: L06-8 (pp56-77), L10 (pp86-97), L13 (pp112-115), L19 (pp162-167), L21 (pp186-197) • L24 (pp218-223), L26 (pp230-235) • TG: L02.Exts (p21), L06-8 (pp65-100), L10 (pp113-124), L13 (pp143-152), 6L19 (pp209-226) • L21 (pp241-260), L22.Exts (p270), L24 (pp295-302), L26 (pp313-332)
PERFORMANCE OBJECTIVE		**SC08-S1C3-04.**	Formulate a future investigation based on the data collected. • **Energy, Machines, and Motion** • SG: L07 (pp62-71) • TG: L07 (pp75-84) • **Properties of Matter** • SG: L13 (pp112-115), L15-16 (pp122-139), L23-24 (pp208-223) • TG: L13 (pp143-152), L15-16 (pp161-178), L23-24 (pp275-302)
PERFORMANCE OBJECTIVE		**SC08-S1C3-06.**	Identify the potential investigational error that may occur (e.g., flawed investigational design, inaccurate measurement, computational errors, unethical reporting). • **Properties of Matter** • SG: L04 (pp30-37), L13 (pp112-115), L26 (pp230-235) • TG: L04 (pp39-48), L13 (pp143-152), L26 (pp313-332)
PERFORMANCE OBJECTIVE		**SC08-S1C3-07.**	Critique scientific reports from periodicals, television, or other media. • **Energy, Machines, and Motion** • TG: L11 (pp131-146)

STRAND	**AZ.SC08-S1.**	**Inquiry Process**
CONCEPT	**SC08-S1C4.**	Communication: Communicate results of investigations.
PERFORMANCE OBJECTIVE	**SC08-S1C4-01.**	Communicate the results of an investigation. • **Energy, Machines, and Motion** • SG: L17 (pp164-173), L22 (pp226-236) • TG: L17 (pp203-216), L22 (pp247-254) • **Organisms - From Macro to Micro** • TG: L02 (pp15-32), L13 (pp219-236) • **Properties of Matter** • SG: L10 (pp86-97) • L10 (pp113-124)
PERFORMANCE OBJECTIVE	**SC08-S1C4-02.**	Choose an appropriate graphic representation for collected data: line graph; double bar graph; stem and leaf plot; histogram (See M08-S2C1-03). • **Energy, Machines, and Motion** • SG: L04-5 (pp26-47), L08-13 (pp72-129), L15 (pp140-147), L18 (pp174-187) • TG: L04-6 (pp37-74), TG: L08-13 (pp85-166), L15-16 (pp177-202), L18-19 (pp217-234) • **Organisms - From Macro to Micro** • SG: L02-10 (pp12-131), L16-17 (pp188-203) • TG: L02-11 (pp15-200), L16-17 (pp267-292) • **Properties of Matter** • SG: L01-26 (pp2-235) • TG: L01-26 (pp3-332)
PERFORMANCE OBJECTIVE	**SC08-S1C4-03.**	Present analyses and conclusions in clear, concise formats (See W08-S3C6-02). • **Energy, Machines, and Motion** • SG: L04-5 (pp26-47), L08-13 (pp72-129), L15 (pp140-147), L18 (pp174-187) • TG: L04-6 (pp37-74), TG: L08-13 (pp85-166), L15-16 (pp177-202), L18-19 (pp217-234) • **Organisms - From Macro to Micro** • SG: L02-10 (pp12-131), L16-17 (pp188-203) • TG: L02-11 (pp15-200), L16-17 (pp267-292) • **Properties of Matter** • SG: L01-26 (pp2-235) • TG: L01-26 (pp3-332)
PERFORMANCE OBJECTIVE	**SC08-S1C4-04.**	Write clear, step-by-step instructions for conducting investigations or operating equipment (without the use of personal pronouns) (See W08-S3C3-01). • **Properties of Matter** • SG: L17 (pp140-149) • TG: L17 (pp179-192)
PERFORMANCE OBJECTIVE	**SC08-S1C4-05.**	Communicate the results and conclusion of the investigation. (See W08-S3C6-02). • **Energy, Machines, and Motion** • SG: L07 (pp62-71), L17 (pp164-173), L22 (pp226-236) • TG: L04 (pp37-46), L07 (pp75-84), L13 (pp157-166), L17-19 (pp203-234), L22 (pp247-254) • **Organisms - From Macro to Micro**

		• TG: L02 (pp15-32), L13 (pp219-236) • **Properties of Matter** • SG: L10 (pp86-97), L16 (pp130-139) • TG: L10 (pp113-124), L16 (pp169-178)
STRAND	**AZ.SC08-S2.**	**History and Nature of Science**
CONCEPT	**SC08-S2C1.**	History of Science as a Human Endeavor: Identify individual, cultural, and technological contributions to scientific knowledge.
PERFORMANCE OBJECTIVE	**SC08-S2C1-01.**	Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Watson and Crick [scientists], support Strand 4; Rosalind Franklin [scientist], supports Strand 4; Charles Darwin [scientist], supports Strand 4; George Washington Carver [scientist, inventor], supports Strand 4; Joseph Priestley [scientist], supports Strand 5; Sir Frances Bacon [philosopher], supports Strand 5; Isaac Newton [scientist], supports Strand 5). • **Energy, Machines, and Motion** • SG: L05 (pp36-47), L15-17 (pp140-173) • **Properties of Matter** • SG: L02 (pp14-23), L07 (pp64-73), L10-11 (pp86-105), L25 (pp224-229)
PERFORMANCE OBJECTIVE	**SC08-S2C1-02.**	Evaluate the effects of the following major scientific milestones on society: Mendelian Genetics; Newton's Laws. • **Organisms - From Macro to Micro** • SG: L19 (pp216-235) • TG: L19 (pp303-330)
PERFORMANCE OBJECTIVE	**SC08-S2C1-03.**	Evaluate the impact of a major scientific development occurring within the past decade. • **Energy, Machines, and Motion** • SG: L02 (pp12-19), L07 (pp62-71), L15-16 (pp140-161) • **Organisms - From Macro to Micro** • SG: L19 (pp216-235) • **Properties of Matter** • SG: L09 (pp78-83), L11 (pp98-105), L15 (pp122-129), L18-19 (pp150-167), L21-23 (pp186-217), L25 (pp224-229)
PERFORMANCE OBJECTIVE	**SC08-S2C1-04.**	Evaluate career opportunities related to life and physical sciences. • **Organisms - From Macro to Micro** • SG: L02 (pp12-27), L11 (pp132-145) • TG: L09.Exts (p160), L19.Exts (pp317-318)
STRAND	**AZ.SC08-S2.**	**History and Nature of Science**
CONCEPT	**SC08-S2C2.**	Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.
PERFORMANCE OBJECTIVE	**SC08-S2C2-01.**	Apply the following scientific processes to other problem solving or decision making situations: Observing; questioning; communicating; comparing; measuring; classifying; predicting; organizing data; inferring; generating hypotheses; identifying variables. • **Energy, Machines, and Motion** • SG: L01-22 (pp2-236) • TG: L01-22 (pp3-254) • **Organisms - From Macro to Micro** • SG: L01-20 (pp2-243) • TG: L01-20 (pp3-350

			• **Properties of Matter** • SG: L01-26 (pp2-235) • TG: L01-26 (pp3-332)
PERFORMANCE OBJECTIVE		SC08-S2C2-02.	Describe how scientific knowledge is subject to change as new information and/or technology challenges prevailing theories. • **Energy, Machines, and Motion** • SG: L02 (pp12-19), L07 (pp62-71), L15-16 (pp140-202) • TG: L16 (pp185-202) • **Organisms - From Macro to Micro** • SG: L19 (pp216-235) • **Properties of Matter** • SG: L09 (pp78-83), L11 (pp98-105), L15 (pp122-129), L19 (pp162-167), L21-23 (pp186-217) • L25 (pp224-229)
PERFORMANCE OBJECTIVE		SC08-S2C2-03.	Defend the principle that accurate record keeping, openness, and replication are essential for maintaining an investigator's credibility with other scientists and society. • **Energy, Machines, and Motion** • SG: L07 (pp62-71) • TG: L07 (pp75-84) • **Organisms - From Macro to Micro** • SG: L15 (pp180-187) • TG: L15 (pp253-266) • **Properties of Matter** • SG: L03-4 (pp24-37), L13 (pp112-115), L26 (pp230-235) • TG: L03-4 (pp27-48), L13 (pp143-152), L26 (pp313-332)
PERFORMANCE OBJECTIVE		SC08-S2C2-04.	Explain why scientific claims may be questionable if based on very small samples of data, biased samples, or samples for which there was no control. • **Properties of Matter** • SG: L04 (pp30-37), L13 (pp112-115), L26 (pp230-235) • TG: L04 (pp39-48), L13 (pp143-152), L26 (pp313-332)
STRAND		**AZ.SC08-S3.**	**Science in Personal and Social Perspectives**
CONCEPT		SC08-S3C1.	Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.
PERFORMANCE OBJECTIVE		SC08-S3C1-01.	Analyze the risk factors associated with natural, human induced, and/or biological hazards, including: waste disposal of industrial chemicals; greenhouse gases. • **Organisms - From Macro to Micro** • SG: L13 (pp158-171) • TG: L17.Exts (pp287-288)
PERFORMANCE OBJECTIVE		SC08-S3C1-02.	Analyze possible solutions to address the environmental risks associated with chemicals and biological systems. • **Properties of Matter** • SG: L12 (pp106-111) • TG: L12.Exts (p140)
STRAND		**AZ.SC08-S3.**	**Science in Personal and Social Perspectives**

CONCEPT	**SC08-S3C2.**	Science and Technology in Society: Develop viable solutions to a need or problem.
PERFORMANCE OBJECTIVE	**SC08-S3C2-03.**	Design and construct a solution to an identified need or problem using simple classroom materials. . • **Energy, Machines, and Motion** • SG: L02 (pp12-19), L17 (pp164-173), L22 (pp226-236) • TG: L02 (pp23-30), L07 (pp75-84), L12 (pp147-156), L16-17 (pp185-216), L22 (pp247-254) • **Organisms - From Macro to Micro** • SG: L04 (pp38-45), L15 (pp180-187), L20 (pp236-243) • TG: L04 (pp49-56), L15 (pp253-266), L20 (pp331-350) • **Properties of Matter** • SG: L10 (pp86-97) • TG: L04.Exts (p45), L07.Exts (p86), L10 (pp113-124), L13.Exts (p148)
PERFORMANCE OBJECTIVE	**SC08-S3C2-04.**	Compare risks and benefits of the following technological advances: radiation treatments; genetic engineering (See Strand 4 Concept 2); airbags (See Strand 5 Concept 2). • **Organisms - From Macro to Micro** • SG: L05 (pp46-63) • TG: L19.Exts (pp317-318)
STRAND	**AZ.SC08-S4.**	**Life Science**
CONCEPT	**SC08-S4C2.**	Reproduction and Heredity: Understand the basic principles of heredity.
PERFORMANCE OBJECTIVE	**SC08-S4C2-01.**	Explain the purposes of cell division: growth and repair; reproduction. • **Organisms - From Macro to Micro** • SG: L08-9 (pp96-119), L19 (pp216-235) • TG: L03.Exts (p41), L08-9 (pp131-166), L19 (pp303-330)
PERFORMANCE OBJECTIVE	**SC08-S4C2-02.**	Explain the basic principles of heredity using the human examples of: eye color; widow's peak; blood type. • **Organisms - From Macro to Micro** • SG: L01 (pp2-11), L18-19 (pp204-235) • TG: L01 (pp3-14), L02.Exts (p25), L18-19 (pp293-330)
PERFORMANCE OBJECTIVE	**SC08-S4C2-03.**	Distinguish between the nature of dominant and recessive traits in humans. • **Organisms - From Macro to Micro** • SG: L19 (pp216-235) • TG: L19 (pp303-330)
STRAND	**AZ.SC08-S4.**	**Life Science**
CONCEPT	**SC08-S4C4.**	Diversity, Adaptation, and Behavior: Identify structural and behavioral adaptations.
PERFORMANCE OBJECTIVE	**SC08-S4C4-01.**	Explain how an organism's behavior allows it to survive in an environment. • **Organisms - From Macro to Micro** • SG: L02 (pp12-27), L06 (pp64-81) • TG: L02 (pp15-32), L06 (pp73-104)

PERFORMANCE OBJECTIVE	SC08-S4C4-03.	Determine characteristics of organisms that could change over several generations. • **Organisms - From Macro to Micro** • SG: L01 (pp2-11), L06 (pp64-81), L13 (pp158-171) L18-19 (pp204-235) • TG: L01 (pp3-14), L02.Exts (p25), L06 (pp73-104), L10.Exts (pp175-176), L13 (pp219-236) • L18-19 (pp293-330)
PERFORMANCE OBJECTIVE	SC08-S4C4-04.	Compare the symbiotic and competitive relationships in organisms within an ecosystem (e.g., lichen, mistletoe/tree, clownfish/sea anemone, native/non-native species). • **Organisms - From Macro to Micro** • SG: L02 (pp12-27), L14 (pp172-179), L17 (pp194-203) • TG: L02 (pp15-32)
PERFORMANCE OBJECTIVE	SC08-S4C4-06.	Describe the following factors that allow for the survival of living organisms: protective coloration; beak design; seed dispersal; pollination. • **Organisms - From Macro to Micro** • SG: L06 (pp64-81), L08-9 (pp96-119), L13 (pp158-171) • TG: L06 (pp73-104), L09 (pp151-166), L10.Exts (pp175-176), L13 (pp219-236) • L18.Exts (pp299-300), L19.Exts (pp317-318)
STRAND	**AZ.SC08-S5.**	**Physical Science**
CONCEPT	SC08-S5C1.	Properties and Changes of Properties in Matter: Understand physical and chemical properties of matter.
PERFORMANCE OBJECTIVE	SC08-S5C1-01.	Identify different kinds of matter based on the following physical properties: States; density; boiling point; melting point; solubility. • **Properties of Matter** • SG: L01 (pp2-13), L07-8 (pp64-77), L12-13 (pp106-115), L15-17 (pp122-149),L19 (pp162-167) • TG: L01 (pp3-14), L07-8 (pp79-100), L12-13 (pp135-152), L15-17 (pp161-168) • L19 (pp209-226)
PERFORMANCE OBJECTIVE	SC08-S5C1-02.	Identify different kinds of matter based on the following chemical properties: Reactivity; pH; oxidation (corrosion). • **Organisms - From Macro to Micro** • TG: L10.Exts (pp175-176) • **Properties of Matter** • SG: L01-2 (pp2-23), L10 (pp86-97), L18 (pp150-161), L21-23 (pp186-217) • TG: L01-2 (pp3-26) L10 (pp113-124), L18 (pp193-208), L21-23 (pp241-294), L24.Exts (p301)
PERFORMANCE OBJECTIVE	SC08-S5C1-03.	Identify the following types of evidence that a chemical reaction has occurred: formation of a precipitate; generation of gas; color change; absorption or release of heat. • **Properties of Matter** • TG: L22.Exts (p270)
PERFORMANCE OBJECTIVE	SC08-S5C1-04.	Classify matter in terms of elements, compounds, or mixtures. • **Properties of Matter** • SG: L01 (pp2-13), L11-12 (pp98-111), L14-15 (pp116-149), L17-22 (pp140-207) • TG: L01 (pp3-14), L11-12 (pp125-142), L14-15 (pp153-168), L16.Exts (p178)

			• L17-22 (pp179-274), L23.Exts (p284)
PERFORMANCE OBJECTIVE		SC08-S5C1-05.	Classify mixtures as being homogeneous or heterogeneous. • **Properties of Matter** • SG: L01 (pp2-13), L11-12 (pp98-111), L14-15 (pp116-149), L17-22 (pp140-207) • TG: L01 (pp3-14), L11-12 (pp125-142), L14-15 (pp153-168), L16.Exts (p178) • L17-19 (pp179-226), L22.Exts (p270)
PERFORMANCE OBJECTIVE		SC08-S5C1-06.	Explain the systematic organization of the periodic table. • **Properties of Matter** • SG: L21 (pp186-197) • TG: L21 (pp241-260)
PERFORMANCE OBJECTIVE		SC08-S5C1-07.	Investigate how the transfer of energy can affect the physical and chemical properties of matter. • **Energy, Machines, and Motion** • SG: L01-22 (pp2-236) • TG: L01-22 (pp3-254) • **Properties of Matter** • SG: L03 (pp24-29), L05-8 (pp38-77), L13 (pp112-115), L18 (pp150-161), L25 (pp224-229) • TG: L03 (pp27-38), L05-8 (pp49-100), L11.Exts (p132), L13 (pp143-152), L18 (pp193-208) • L22.Exts (p270), L25 (pp303-312)
STRAND		**AZ.SC08-S5.**	**Physical Science**
CONCEPT		SC08-S5C2.	Motion and Forces: Understand the relationship between force and motion.
PERFORMANCE OBJECTIVE		SC08-S5C2-01.	Demonstrate velocity as the rate of change of position over time. • **Energy, Machines, and Motion** • SG: L06 (pp48-61), L18 (pp174-187), L19 (pp188-199), L21 (pp214-225) • TG: L01.Exts (p14). L06.Exts (pp68-69), L18-19 (pp217-234), L21 (pp239-246)
PERFORMANCE OBJECTIVE		SC08-S5C2-02.	Identify the conditions under which an object will continue in its state of motion (Newton's 1st Law of Motion). • **Energy, Machines, and Motion** • SG: L21 (pp214-225) • TG: L18.Exts (p224)
PERFORMANCE OBJECTIVE		SC08-S5C2-03.	Describe how the acceleration of a body is dependent on its mass and the net applied force (Newton's 2nd Law of Motion). • **Energy, Machines, and Motion** • SG: L18 (pp174-187), L21 (pp214-225) • TG: L18 (pp217-228), L21 (pp239-246)
PERFORMANCE OBJECTIVE		SC08-S5C2-04.	Describe forces as interactions between bodies (Newton's 3rd Law of Motion). • **Energy, Machines, and Motion** • SG: L19 (pp188-199), L21 (pp214-225)

PERFORMANCE OBJECTIVE	**SC08-S5C2-05.**	Create a graph devised from measurements of moving objects and their interactions, including: position-time graphs; velocity-time graphs. • **Energy, Machines, and Motion** • SG: L05-6 (pp36-61), L09 (pp82-91), L18-19 (pp174-199), L21 (pp214-225) • TG: L01.Exts (p14), L05-6 (pp47-74), L08-9 (pp85-106), L13 (pp157-166), L15 (pp177-184) • L18-19 (pp217-234), L21 (pp239-246) • **Properties of Matter** • SG: L10 (pp86-97), L24 (pp218-223) • TG: L02.Exts (p21), L10 (pp113-124), L22.Exts (p270), L24 (pp295-302)