Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

Timeline & Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
1st Quarter Science Fusion Unit 1: How Scientists Work Lessons 1, 2, 3 & 4	*Strand 1: Inquiry Process* *Concept 1: Observations, Questions, and Hypotheses* **PO 1**. Compare common objects using multiple senses.	What are senses? What body part do you use for each sense? What can you find out using senses? What is observation?	Identify all five senses. Identify which part of the body is used for each sense. Describe objects using all five senses. Compare objects using all five senses.	Five senses Hearing Sight Taste Touch Smell Compare Similar/Alike Different
1st Quarter Science Fusion Unit 3: Animals- Lessons 1 & 2	*Strand 4: Life Science* *Concept 1: Characteristics of Organisms* **PO 1:** Identify the following as characteristics of living things: • Growth and development • Reproduction • Response to stimulus	What is living things? Non-living things? What kinds of things are living things? What are needs? What are characteristics of living things? Non-Living things?	Identify the characteristics of a living thing. Describe the characteristics of a non-living thing. Determine if a thing is living or non-living. Identify living things in your environment. Identify non-living things in your environment.	Living things Non-living things Needs: Shelter, water, food, space, sunlight, air Growth Reproduction Plants Animals People Habitat

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

1st Quarter Science Fusion Unit 3: Animals -Lessons 1, 2, 3, & 4 Unit 4: Plants -Lessons 1, 2, 3, 4, & 5	**PO 2.** Compare the following observable features of living things: • Movement-legs, wings • Protection-skin, feathers, tree bark • Respiration- lungs, gills • Support- plant stems, tree trunks	What are parts of living things? Animals? Plants? What do parts of an animal do? What do parts of a plant do? How are the parts of a plant and parts of an animal similar/different?	Compare features/attributes of living things. Group animals into groups based on similar/different features/attributes. Identify the purposes of features of living things.	Living things Animal groups Movement Body coverings Body parts Respiration Animal parts Plant parts Organs
1st Quarter Science Fusion Unit 3: Animals Lessons 3 & 4	**PO 3.** Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/among different groups of animals.	What are the different animal groups? What are the characteristics or features of animals in each animal group? Why does an animal belong to a certain group? Why do we group animals?	Identify different animals groups (insects, birds, mammals, reptiles, amphibians, & fish). Identify characteristics of animals in each animal group. Compare characteristics of animals within an animal group. Compare characteristics of animals between different animals groups.	Animal groups Mammals Reptiles Fish Birds Amphibians Insects Body coverings Characteristics

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

1st Quarter	*Strand 4: Life Science* *Concept 2: Life Cycles* **PO 1.** Identify stages of human life (e.g., infancy, adolescence, adulthood).	What is a cycle? What are the stages of the human life cycle? How is a human life cycle similar/different to animal life cycles?	Describe a cycle. Identify the stages of the human life cycle. Describe each stage in the human life cycle. Compare/contrast a human life cycle to an animal life cycle.	Life cycle Cycle Stages Infant, adolescence, adult Develop Human
1st Quarter	**PO 2.** Identify similarities and differences between animals and their parents.	How are animals similar/different from their parents? Why does an animal look similar/different from their parents?	Identify similarities and differences between animals and their parents. Identify reasons an animal is similar/different from their parents.	Relationship Adult, parent Infant, offspring Traits Physical features Life cycle
1st Quarter Science Fusion Unit 10: Forces and Energy -Lessons 1, 2, 3	*Strand 5: Physical Science* *Concept 2: Position and Motion of Objects* **PO 1**. Demonstrate the various ways that objects can move (e.g., straight line, zigzag, back-and-forth, round-and-round, fast, slow).	What is energy? What is force? What moves an object? How can an object move? What is sound?	Describe what moves an object (force and energy). Describe ways an object can move (straight, zigzag, back-and-forth, round-and-round, fast, slow). Demonstrate ways an object moves. Describe what sound is.	Movement: straight, zigzag, back-and-forth, round-and-round, fast, slow Position Force Gravity Sound

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

		How do we make sound?	Describe how sound is made.	Vibrate Loud soft
1st Quarter Science Fusion Unit 7: Weather and Seasons -Lessons 1, 2, & 3	*Strand 6: Earth and Space Science* *Concept 2: Objects in the Sky* **PO 1.** Identify the following characteristics of seasonal weather patterns: • Temperature • Type of precipitation • Wind	What is weather? What are the kinds of seasons? What are the characteristics of each season? What is temperature? Precipitation? Wind?	Identify the different kinds of seasons. Identify the different kinds of weather. Describe the different kinds of weather. Describe the different kinds of seasons. Compare the different kinds of seasons and weather.	Weather Seasons: winter, fall, spring, summer Temperature Precipitation Wind Storms Weather tools: thermometer, wind vane, wind sock, rain gauge
1st Quarter Science Fusion Unit 7: Weather and Seasons -Lessons 1, 2, & 3	**PO 2**. Analyze how the weather affects daily activities.	What are the different kinds of weather? What are the different kinds of seasons? What are some activities you can do in different types of weather/seasons?	Describe different kinds of weather and seasons. Identify types of activities that are done in different types of weather. Determine what kinds of activities can be done in a certain type of weather.	Weather Seasonal activities Weather patterns

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

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2nd Quarter Science Fusion Unit 1: How Scientists Work Lessons 1, 2, 3 & 4	*Strand 1: Inquiry Process* *Concept 1: Observations, Questions, and Hypotheses* **PO 1**. Compare common objects using multiple senses.	What are senses? What body part do you use for each sense? What can you find out using senses? What is observation?	Identify all five senses. Identify which part of the body is used for each sense. Describe objects using all five senses. Compare objects using all five senses.	Five senses Hearing Sight Taste Touch Smell Compare Similar/Alike Different
2nd Quarter Science Fusion Unit 1: How Scientists Work? Lessons 1, 2, 3 & 4	**PO 2.** Ask questions based on experience with objects, organisms, and events in the environment.	What are inquiry skills? What are inquiry skills used for? What can you learn from each inquiry skill? How do you ask a scientific question?	Identify difference kinds of inquiry skills. Describe each inquiry skills. Use inquiry skills to ask scientific questions.	Environment Inquiry skills Scientific questions
2nd Quarter Science Fusion Unit 1: How	**PO 3.** Predict results of an investigation based on life, physical, and earth and space sciences (e.g., animal life cycles, physical properties, earth materials). (teach	What is an investigation? What are the steps of a scientific investigation?	Identify the steps of a scientific investigation? Describe each step of a scientific investigation?	Predict Infer Conclusion Investigation Hypothesis

PACING Guide SY 2018-19

Scientists Work: Lesson 1, 2, 3, 4 & 5	"predict" concept).	What inquiry skills are needed for each step of a scientific investigation? What is a prediction? How do you test a hypothesis?	Make predictions about an investigation. Perform a scientific investigation.	Report/record Results
2nd Quarter Science Fusion Unit 1: How Do Scientists Work Lesson1 & 5	*Strand 2: Inquiry Process* *Concept 2: Scientific testing (Investigating and Modeling)* **PO 1.** Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.	What are science inquiry rules? What is proper behavior when performing science inquiry? How do you use science tools properly?	Identify rules and procedures in scientific investigations. Identify safe behavior when using science tools. Describe how to use science tools properly. Describe the importance of safe behavior and appropriate procedures in science inquiry.	Rules Responsibility Science Tools Safety Science inquiry
2nd Quarter Science Fusion Unit 1: How Do Scientists Work Lessons 1, 2,	**PO 2.** Participate in guided investigations in life, physical, and Earth and space sciences.	What was the purpose of your scientific investigation? What was the outcome of your scientific investigation?	Use inquiry skills to participate in a guided investigation. Record and share results of a scientific investigation. Perform a scientific investigation with guidance from the teacher.	Investigation Scientific method Problem Solution Design Results/Record

3, 4, & 5 (Apply skills in other units)		What did you learn from your scientific investigation?		
2nd Quarter Science Fusion Unit 1: How Do Scientists Work Lessons 1, 2, & 3 -rulers, thermometer, magnifier, balance, measuring tape, scale, etc.	**PO 3.** Use simple tools such as rulers, thermometers, magnifiers, and balances to collect data (U.S. customary units).	What is data? What kind of science tool is used to measure length, weight, temperature, etc.? What are units of measurement (inch, feet, meter, yard, etc.)?	Identify different science tools. Describe the use of each science tool. Record data using different science tools.	Measure Data Ruler Thermometer Magnifier Balance Weight Length Inch/foot Yard/mile ounce/pound Cup/gallon/quart
2nd Quarter Science Fusion All 10 Units Begin in Unit 1 -lab notebook	**PO 4.** Record data from guided investigations in an organized and appropriate format (e.g., lab book, log, notebook, chart paper).	What is the purpose of a lab book/science notebook? What are ways to organize data (graphic organizers)?	Record data from a scientific investigation in a lab book or science notebook. Use charts, tables, pictures, lists, etc. to record data from a scientific investigation.	Lab book Term/vocabulary Definition Diagram Label/caption Record/report

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

2nd Quarter Science Fusion Unit 1: How Do Scientist Work Lessons 3 & 4	*Strand 1: Inquiry Process* *Concept 3: Analysis and Conclusions* **PO 1.** Organize (e.g., compare, classify, and sequence) objects, organisms, and events according to various characteristics.	How can you organize things? What inquiry skills do you use to organize objects, organisms, and events? What graphic organizers can you use to organize things?	Identify characteristics of organisms, objects, and events. Compare organisms, objects, and events based on characteristics. Organize organisms, objects, and events on a table, graph, etc.	Organize Sort Classify Sequence Characteristics Similar/alike Different Groups Attributes: color, size, shape, number, etc.
2nd Quarter -Science Fusion Unit 1: How Do Scientists Work Lesson 5 -Inquiry Flipchart pgs. 2-6	**PO 2.** Compare the results of the investigations to predictions made prior to the investigation.	What is a prediction? What are the steps of an investigation? How are the results of an investigation and your predication similar/different?	Make a prediction as part of an investigation. Perform an investigation. Compare results of an investigation with your predictions.	Hypothesis Conclusion Test Compare Investigation Prediction
2nd Quarter -Science Fusion Unit 1: How Do Scientists	*Strand 1: Inquiry Process* *Concept 4: Communication* **PO 1**. Communicate the results of an investigations using pictures, graphs, models, and/or words.	What are the results of an investigation? How can you communicate results of an investigation?	Perform a scientific investigation. Record results of a scientific investigation.	Record/results Communicate Picture Graph Model Diagram

PACING Guide SY 2018-19

Work Lesson 5 -Inquiry Flipcharts pgs. 2-6		Who are you sharing your results of an investigation with?	Share the results of an investigation with an audience.	
2nd Quarter Science Fusion Unit 1: How Do Scientists Work -Lessons 4 & 5 Unit 2: Technology All Around Us -Lessons 1 & 2 -Inquiry Flipchart pgs. 5-8	**PO 2.** Communicate with other groups to describe the results of an investigation.	What are ways you can communicate your results of a scientific investigation? How can you share your results with other groups? What is similar/different between the results of your investigation to the results of other groups?	Communicate results of a scientific investigation with peers, specific audience, or other groups. Describe the results of a scientific investigation with others. Compare and contrast your results of a scientific investigation with another group's results.	Record/results Communicate Investigation Conclusion
2nd Quarter Science Fusion Unit 1: How Do Scientists	*Strand 3: Science in Personal and Social Perspectives* *Concept 2: Science and Technology in Society* **PO 2**. Describe how suitable tools (e.g., magnifiers, thermometers) help	What are some scientific tools? What do these tools measure?	Identify scientific tools. Describe what scientific tools do. Describe how these scientific tools help your investigation.	Science tools Observations Measurements Senses Thermometer Magnifier

PACING Guide SY 2018-19

Work Lessons 1, 2, & 3	make better observations and measurements.	How do these tools help you with your scientific investigation?		Balance Scale Tape measure Ruler
2nd Quarter Science Fusion Unit 8: Objects In the Sky -Lessons 1, 2, 3, & 4	*Strand 6: Earth and Space Science* *Concept 2: Objects in the Sky* **PO 1.** Identify evidence that the Sun is the natural source of heat and light on the Earth (e.g., warm surfaces, shadows, shade).	What is the sun? What do we need the sun for? What things show us that the sun gives us light and heat?	Describe the importance of the sun to the Earth. Identify what we get from the sun. Identify evidence/ways we know the sun gives the Earth light and heat (warm surfaces, shadows, shade).	Sun Sky Stars Space Heat/light Planets
2nd Quarter Science Fusion Unit 8: Objects in the Sky -Lessons 1, 2, & 3 -Inquiry Flipchart pgs. 36-39	**PO 2.** Compare celestial objects (e.g., Sun, Moon, stars) and transient objects in the sky (e.g., clouds, birds, airplanes, contrails).	What are the objects found in the sky? How do the objects in the sky move? Are all objects in the sky the same? How are the sun, moon, and stars different/similar to things like cloud, birds, and other things found in the sky?	Identify celestial objects in the sky. Describe celestial objects in the sky. Identify transient objects in the sky. Describe transient objects in the sky. Compare celestial and transient objects in the sky.	Sun Moon Stars Sky/Space Orbit Gravity

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

2nd Quarter Science Fusion Unit 8: Objects in the Sky -Lessons 1, 2, & 3 -Inquiry Flipchart pgs. 36-39	**PO 3.** Describe observable changes that occur in the sky (e.g., clouds forming and moving, the position of the Moon).	What are objects found in the sky? How do these objects in the sky change? How do these objects in the sky move?	Identify and describe objects found in the sky. Describe how objects in the sky change and move.	Clouds Sky Sun/moon/stars Earth Orbit Weather Atmosphere
Timeline & Resources	**AZ College and Career Readiness Standard**	**Essential Question (HESS Matrix)**	**Learning Goal**	**Vocabulary (Content/Academic)**
3rd Quarter Science Fusion Unit 4: Plants -Lessons 1, 2, 3, 4, and 5 Unit 5: Environments -Lessons 1, 2	*Strand 4: Life Science* *Concept 3: Organisms and Environments* **PO 1**. Identify some plants and animals that exist in the local environment.	What is a habitat? What is an environment? What is the local environment? What kinds of animals and plants are found in our environment?	Identify the local environment. Describe the local environment. Identify plants and animals that can be found in our local environment. Compare/contrast plants found in our environment to others found in different environments.	Environment Habitat Plants/animals Organisms Desert, grassland, plateau, mountains
3rd Quarter	**PO 2.** Compare the habitats (e.g., desert, forest, prairie, water,	What is a habitat?	Identify the different kinds of habitats.	Habitat Environment

PACING Guide SY 2018-19

Science Fusion Unit 5: Environments Lessons 1, 2	underground) in which plants and animals live.	What are the characteristics of different habitats? What kinds of plants and animals live in a desert, forest, prairie, ocean, etc.? Why do these plants and animals live in their specific habitat?	Describe each kind of habitat. Identify plants and animals found in different kinds of habitats. Compare characteristics, plants, and animals of different habitats.	Desert, forest, prairie, ocean, grassland
3rd Quarter Science Fusion Unit 5: Environments Lesson 1	**PO 3**. Describe how plants and animals within a habitat are dependent on each other.	How do some animals and plants work together? In what ways can a plant and animal help each other?	Describe how plants and animals work together in an environment. Describe how a plant helps an animal. Describe how an animal helps a plant.	Habitat Co-dependent Plants/animals Relationship
3rd Quarter Science Fusion Unit 6: Earth's Resources	*Strand 6: Earth and Space Science* *Concept 1: Properties of Earth Materials* **PO 1**. Describe the following basic Earth materials: • Rocks	What is the Earth made of? What materials are found on Earth's surface?	Identify basic Earth materials. Describe what kinds of materials are found on the Earth's surface. Compare/contrast different Earth materials.	Earth Earth surface Materials Rock Soil: sand, clay, humus, dirt Water

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

-Lessons 1, 2, 3, 4, 5, & 6	• Soil • Water	How are these materials similar/different from each other?		
3rd Quarter Science Fusion Unit 6: Earth's Resources -Lessons 1, 2, 3, 4, 5, & 6	**PO 2.** Compare the following physical properties of basic Earth materials: • Color • Texture • Capacity to retain water	What are the basic Earth materials? What are the physical properties of basic Earth materials? How are basic Earth materials similar/different from basic Earth materials?	Identify basic Earth Materials. Describe the color, texture, and other attributes of basic Earth materials. Compare the physical properties of basic Earth materials.	Physical properties Earth materials: soil, water, rock Traits Texture Compare/contrast
3rd Quarter Science Fusion Unit 6: Earth's Resources Unit 2: Technologies All Around Us Lessons 3 & 4	**PO 3.** Identify common uses (e.g., construction, decoration) of basic Earth materials (i.e., rocks, water, soil).	What are basic Earth materials? What can you use basic Earth materials for? What can you make out of basic Earth materials?	Identify basic Earth materials. Identify uses for basic earth materials. Describe things found in your environment that are made out of basic Earth materials.	Earth materials Natural resource Human-made Basic uses
3rd Quarter	**PO 4.** Identify the following as being natural resources:	What are natural resources?	Identify natural resources.	Natural resources: air, water, soil, trees,

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

Science Fusion Unit 6: Earth's Resources Lessons 1, 2, 3, 4, 5, & 6 Unit 2: Technologies Around Us Lessons 3 & 4	• Air • Water • Soil • Trees • Wildfire	What are human-made resources? Where can you find natural resources? What do we use natural resources for?	Describe natural resources. Identify where to find natural resources. Determine if a thing is a natural resource or human-made.	wildlife Human-made
3rd Quarter Science Fusion Unit 6: Earth's Resources Lesson 6	**PO 5.** Identify ways to conserve natural resources (e.g., reduce, reuse, recycle, find alternatives).	What are natural resources? What is the importance of natural resources? What do we use natural resources for? What is recycle? Reduce? Reuse?	Identify natural resources. Describe natural resources. Identify ways to conserve natural resources. Describe ways to conserve natural resources (reduce, reuse, recycle).	Natural resource Conservation Reduce Reuse Recycle Alternative energy
Timeline & Resources	**AZ College and Career Readiness Standard**	**Essential Question (HESS Matrix)**	**Learning Goal**	**Vocabulary (Content/Academic)**
4th Quarter	*Strand 3: Science in Personal and*	What is technology?	Define technology.	Science

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

Science Fusion Unit 2: Technology All Around Us -Lessons 3 -S.T.E.M Inquiry Flipcharts	*Social Perspectives* *Concept 2: Science and Technology in Society* **PO 1.** Identify various technologies (e.g., automobiles, radios, refrigerators) that people use.	Where can we find technology? Who uses technology? What are different kinds of technologies people use? Is technology important? Why or why not?	Identify objects that are technology. Identify who uses technology. Describe different kinds of technologies people use. Describe the importance of technology.	Technology Engineering Mathematics Technologies Tools Society
4th Quarter Science Fusion Unit 9: All About Matter -Lesson 1, 2, 3, 4, & 5	*Strand 5: Physical Science* *Concept 1: Properties of Objects and Materials* **PO 1.** Classify objects by the following observation properties: • Shape • Texture • Size • Color • Weight	What is matter? What are properties of matter? (size, shape, color, texture, weight) How can you classify objects based on their properties?	Define matter. Identify different properties of matter. Classify objects based on their properties (size, shape, color, texture, weight).	Matter Properties Materials Objects Shape Texture Size Color Weight
4th Quarter Science	**PO 2.** Classify materials as solids or liquids.	What is a solid? Liquid? Gas?	Identify the different types of matter (solid, liquid, gas).	Materials Properties Solid

Ganado Unified School District
(Science/1st Grade)

PACING Guide SY 2018-19

Fusion Unit 9: All About Matter -Lesson 2		What are the characteristics of a solid? Liquid? Gas?	Describe the characteristics of the different types of matter (solid, liquid, gas). Classify objects as a solid, liquid, or a gas.	Liquid Gas
4th Quarter Science Fusion All Units "People in Science"	*Strand 2: History and Nature of Science* *Concept 1: History of Science as a Human Endeavor* **PO 1**. Give examples of how diverse people (e.g., children, parents, weather reporters, cooks, healthcare workers, gardeners) use science in daily life.	What is science? Who uses science? How do we use science every day?	Describe how we use science in our everyday life. Describe people who use science in their daily life. Give examples of people who use science every day.	Scientist Engineer History STEM Science
4th Quarter Science Fusion All Units "People in Science" and "Careers in Science"	**PO 2.** Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Sally Ride [scientist], supports Strand 6; Neil Armstrong [astronaut, engineer], supports Strand 6).	Who are some famous scientists? What did these famous scientists do? How did these famous scientists change the world?	Identify some famous scientists. Describe what these famous scientists did. Describe how these famous scientists changed the world.	History Past/present Scientific innovations Scientist Engineer Astronaut Doctor/nurse etc.