Ganado Unified School District #20
(Science/2nd Grade)

PACING Guide SY 2018-2019

Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
First Quarter				
Social Studies Text books, internet resources, Science Fusion.	*Strand 2: History and Nature of Science* *Concept 1: History of Science as a Human Endeavor* *Identify individual and cultural contributions to scientific knowledge.* PO 1. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Daniel Hale Williams [physician], supports Strand 4; Charles Drew [physician], supports Strand 4; Elizabeth Blackwell [physician], supports Strand 4). PO 2. Identify science-related career opportunities	How have people and cultures made important contributions to scientific innovations? What are science-related careers?	Understand that diverse groups of people and cultures have made important contributions to scientific innovations. Identify science-related career opportunities.	Individual Cultural Career Innovations
Unit 4 Lessons 1 -5 Additional **Resources for various systems and their functions from the internet.**	*Strand 4: Life Science* *Concept 1: Characteristics of Organisms* *Understand that basic structures in plants and animals serve a function.* PO 1. Identify animal structures that serve different functions (e.g., sensory, defense, locomotion). PO 2. Identify the following major parts of:	What are the basic structures in plants and animals? What functions do the different structures serve? What are the major parts of the digestive, respiratory, and circulatory?	Understand and describe the basic functions of animals and plants. Identify what purpose the different structures in animals and plants serve.	Characteristics Organisms Plants Animals Functions Systems Digestive Respiratory Circulatory

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(Intro.-1st Qtr. Master-4th Qtr.)	• the digestive system – mouth, esophagus, stomach, small and large intestines • respiratory system – nose, trachea, lungs, diaphragm • circulatory system – heart, arteries, veins, blood		Identify the major parts of the digestive, respiratory, and circulatory systems.	
Science Fusion Review Unit 1 Lessons 1 – 4 Math McGraw Chapter 9 Science Fusion Review Unit 1 Lessons 1 – 4 PLTW modules (Intro.-1st Qtr. Master-4th Qtr.)	*Strand 1: Inquiry Process* *Concept 3: Analysis and Conclusions Organize and analyze data; compare to predictions.* PO 1. Organize data using graphs (i.e., pictograph, tally chart), tables, and journals. PO 2. Construct reasonable explanations of observations on the basis of data obtained (e.g., Based on the data, does this make sense? Could this really happen?). PO 3. Compare the results of the investigation to predictions made prior to the investigation. PO 4. Generate questions for possible future investigations based on the conclusions of the investigation.	How can I use organize data using graphs, tables, and journals? How can I construct reasonable explanations of observations on the basis of data obtained? How can I compare the results of the investigations to predictions made prior to the investigation? What are questions for possible future investigations based on the conclusions of the investigation?	Organize data using graphs, tables, and journals. Construct reasonable explanations of observations on the basis of data obtained. Compare the results of the investigation to predication made prior to the investigation. Generate questions for possible future investigations based on the conclusions of the investigation.	Analysis Conclusion Data Graphs Tables Explanation Observation

Second Quarter

Science Fusion Unit 1 Lessons 1-5 Workbooks	*Strand 1: Inquiry Process* *Concept 1: Observations, Questions, and Hypotheses* Observe, ask questions, and make predictions. PO 1. Formulate relevant questions about the properties of objects, organisms, and events in the environment. PO 2. Predict the results of an investigation (e.g., in animal life cycles, phases of matter, the water cycle).	What is the scientific method? What is an observation, hypothesis, and prediction? How can I predict the results of an investigation?	Understand the scientific method. Understand and use the concepts of observation, hypothesis, and prediction. Make predictions of an investigation.	Inquiry Inquiry skills Observation Question Hypothesis Predict/Prediction Communicate Classify Model Draw Conclusions

Science Fusion Unit 1 Lessons 1-5 Workbooks	PO 3. Identify a simple problem that could be solved by using a suitable tool.	What is a simple problem that could be solved using a suitable tool?	Think of a simple problem and work together to solve it with a tool.	Problem Science Tools Thermometer Ruler Measuring tool Tape measure Balance Measuring cup Hand lens Tool

Third Quarter

Internet Resources on various systems	*Concept 2: Nature of Scientific Knowledge Understand how science is a process for generating knowledge.* PO 1. Identify components of familiar systems (e.g., organs of the digestive system, bicycle).	How is science a process for generating knowledge? What are the components of familiar systems?	Understand that science is a process for generating knowledge. Identify familiar systems and their parts.	Systems Organs Digestive
Science Fusion Unit 2 Lessons 1-4 PLTW Module 1 Properties of matter	*Strand 3: Science in Personal and Social Perspectives* *Concept 2: Science and Technology in Society Understand the impact of technology.* PO 1. Analyze how various technologies impact aspects of people's lives (e.g., entertainment, medicine, transportation, communication).	How do various technologies impact aspects of people's lives? What is technology? How can we improve technology?	Identify and understand how various technologies impact aspects of people's lives. Identify what technology is. Think of ways to improve technology.	Technology Society Entertainment Medicine Transportation Communication
Unit 2 Lessons 1-4	PO 2. Describe important technological contributions made by people, past and present: ● automobile – Henry Ford ● airplane – Wilbur and Orville Wright telephone – Alexander G. Bell	What are some important technological contributions made by people, past and present? What is the design process? How can we use the design process?	Identify and analyze important technological contributions made by people, past and present. Identify the design process. Think of ways to use the design process.	Identify Analyze Past Present Design process
Science Fusion Unit 9 Lessons	*Strand 5: Physical Science* *Concept 1: Properties of Objects and Materials*	How can we classify objects and materials?	Identify ways to classify materials and objects.	Properties Materials Matter Classify

1 – 4 **PLTW** **Module 1:** **Properties of Matter**	*Classify objects and materials by their observable properties.* PO 1. Describe objects in terms of measurable properties (e.g., length, volume, weight, temperature) using scientific tools. PO 2. Classify materials as solids, liquids, or gases. PO 3. Demonstrate that water can exist as a: ● gas – vapor ● liquid – water ● solid – ice PO 4. Demonstrate that solids have a definite shape and that liquids and gases take the shape of their containers.	What are ways to measure properties using tools? How can you classify materials as solids, liquids, or gases? How do you know that solids have a definite shape and that liquids and gases take the shape of their container?	Determine ways to measure properties using tools. Classify materials as solids, liquids, or gases. Identify that solids have a definite shape and that liquids and gases take on the shape of their container.	Shape
Science Fusion **Unit 7** **Lessons** **1 -6** **Science Fusion** **Unit 7** **Lessons** **1 -6** **Additional lessons:** **Solar system**	*Strand 6: Earth and Space Science* *Concept 3: Changes in the Earth and Sky Understand characteristics of weather conditions and climate.* PO 1. Measure weather conditions (e.g., temperature, precipitation). PO 2. Record weather conditions (e.g., temperature, precipitation). PO 3. Identify the following types of clouds: ● cumulus ● stratus ● cirrus PO 4. Analyze the relationship between clouds, temperature, and weather patterns.	What are the characteristics of weather conditions? What are the characteristics of climate? Why do we measure weather conditions? What are the types of clouds? What is the relationship between clouds and weather?	Identify the characteristics of weather conditions. Identify the characteristics of climate. Understand why we measure weather conditions. Identify the types of clouds. Explain what the relationship is between clouds and weather.	Weather Weather conditions Characteristics Climate Measure Cumulus Stratus Cirrus Temperature Precipitation
Fourth Quarter				
Internet Resources on plant and animal cells.	PO 2. Identify the following characteristics of a system: ● consists of multiple parts or subsystems ● parts work interdependently.	What are the characteristics of a system? What are the parts of plant and animal cells?	Identify the characteristics of a system. Identify and label the parts of both animal and plant cells.	Cells Systems

	PO 3. Identify parts of a system too small to be seen (e.g., plant and animal cells).		
Science Fusion Unit 3 Lesson 4, Unit 4, Lesson 4 PLTW Module 2: Form and Function	*Concept 2: Life Cycles* *Understand the life cycles of plants and animals.* PO 1. Describe the life cycles of various insects. PO 2. Describe the life cycles of various mammals. PO 3. Compare the life cycles of various organisms.	What is a life cycle? What is the life cycle of various insects and mammals? How are their life cycles similar and different?	Understand what a life cycle is. Discover the life cycles of various insects and mammals. Compare the life cycles of various organisms.	Life Cycle Insects Mammals Compare
Science Fusion Review Unit 1 Lessons 1 – 4 PLTW modules	*Concept 4: Communication* *Communicate results of investigations.* PO 1. Communicate the results and conclusions of an investigation (e.g., verbal, drawn, or written). PO 2. Communicate with other groups to describe the results of an investigation.	In what different ways can I communicate the results of the investigations? Why is it beneficial to communicate with the other groups to describe the results of an investigation?	Communicate the results of the investigations in various ways. Understand why it is beneficial to communicate with the other groups to describe the results of an investigation.	Communication Verbal Drawn Written Results Beneficial