

Ganado Unified School District

Science/Second Grade Level

PACING Guide SY 2016-2017

Timeline & Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal <i>Students will be able to...</i>	Vocabulary (Content/Academic)
1st Quarter:				
Social Studies Text books, internet resources, Science Fusion.	<p>Strand 2: History and Nature of Science</p> <p>Concept 1: History of Science as a Human Endeavor <i>Identify individual and cultural contributions to scientific knowledge.</i></p> <p>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).</p> <p>PO 2. Identify science-related career opportunities.</p>	<p>How have people and cultures made important contributions to scientific innovations?</p> <p>What are science-related careers?</p>	<p>Understand that diverse groups of people and cultures have made important contributions to scientific innovations.</p> <p>Identify science-related career opportunities.</p>	Individual Cultural Career Innovations
Internet Resources on various systems	<p>Concept 2: Nature of Scientific Knowledge <i>Understand how science is a process for generating knowledge.</i></p> <p>PO 1. Identify components of familiar systems (e.g., organs of the digestive system, bicycle).</p>	<p>How is science a process for generating knowledge?</p> <p>What are the components of familiar systems?</p>	<p>Understand that science is a process for generating knowledge.</p> <p>Identify familiar systems and their parts.</p>	Systems Organs Digestive
Unit 4 Lessons 1 -5 Additional	<p>Strand 4: Life Science</p> <p>Concept 1: Characteristics of Organisms Understand that basic structures in plants and animals serve a function.</p>	<p>What are the basic structures in plants and animals?</p> <p>What functions do the different structures serve?</p>	<p>Understand and describe the basic functions of animals and plants.</p> <p>Identify what purpose the different structures in animals and plants serve.</p>	Characteristics Organisms Plants Animals Functions Systems

<p>Resources for various systems and their functions from the internet.</p>	<p>PO 1. Identify animal structures that serve different functions (e.g., sensory, defense, locomotion).</p> <p>PO 2. Identify the following major parts of:</p> <ul style="list-style-type: none"> the digestive system – mouth, esophagus, stomach, small and large intestines respiratory system – nose, trachea, lungs, diaphragm circulatory system – heart, arteries, veins, blood 	<p>What are the major parts of the digestive, respiratory, and circulatory?</p>	<p>Identify the major parts of the digestive, respiratory, and circulatory systems.</p>	<p>Digestive Respiratory Circulatory</p>
<p>Unit 4 Lessons 1-5 Additional Resources for the systems from the internet.</p>	<p>PO 3. Describe the basic functions of the following systems:</p> <ul style="list-style-type: none"> digestive – breakdown and absorption of food, disposal of waste respiratory – exchange of oxygen and carbon dioxide circulatory – transportation of nutrients and oxygen throughout the body 	<p>Why do we have different systems like digestive, respiratory, etc?</p> <p>What function does each of the systems serve?</p>	<p>Identify and understand the basic functions of the digestive, respiratory, and circulatory systems.</p>	

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2nd Quarter:				
Science Fusion Unit 1 Lessons 1-5 Workbooks	<p><i>Strand 1: Inquiry Process</i> <i>Concept 1: Observations, Questions, and Hypotheses</i> Observe, ask questions, and make predictions.</p> <p>PO 1. Formulate relevant questions about the properties of objects, organisms, and events in the environment.</p> <p>PO 2. Predict the results of an investigation (e.g., in animal life cycles, phases of matter, the water cycle).</p>	<p>What is the scientific method?</p> <p>What is an observation, hypothesis, and prediction?</p> <p>How can I predict the results of an investigation?</p>	<p>Understand the scientific method.</p> <p>Understand and use the concepts of observation, hypothesis, and prediction.</p> <p>Make predictions of an investigation.</p>	<p>Inquiry Inquiry skills Observation Question Hypothesis Predict/Prediction Communicate Classify Model Draw Conclusions</p>
Science Fusion Unit 1 Lessons 1-5 Workbooks	<p>PO 3. Identify a simple problem that could be solved by using a suitable tool.</p>	<p>What is a simple problem that could be solved using a suitable tool?</p>	<p>Think of a simple problem and work together to solve it with a tool?</p>	<p>Problem Science Tools Thermometer Ruler Measuring tool Tape measure Balance Measuring cup Hand lens Tool</p>

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3rd Quarter:				
Science Fusion Unit 2 Lessons 1-4 PLTW Module 1 Properties of matter	<p><i>Strand 3: Science in Personal and Social Perspectives</i></p> <p>Concept 2: Science and Technology in Society Understand the impact of technology.</p> <p>PO 1. Analyze how various technologies impact aspects of people's lives (e.g., entertainment, medicine, transportation, communication).</p>	<p>How do various technologies impact aspects of people's lives?</p> <p>What is technology?</p> <p>How can we improve technology?</p>	<p>Identify and understand how various technologies impact aspects of people's lives.</p> <p>Identify what technology is.</p> <p>Think of ways to improve technology.</p>	Technology Society Entertainment Medicine Transportation Communication
Unit 2 Lessons 1-4	<p>PO 2. Describe important technological contributions made by people, past and present:</p> <ul style="list-style-type: none"> • automobile – Henry Ford • airplane – Wilbur and Orville Wright • telephone – Alexander G. Bell 	<p>What are some important technological contributions made by people, past and present?</p> <p>What is the design process?</p> <p>How can we use the design process?</p>	<p>Identify and analyze important technological contributions made by people, past and present.</p> <p>Identify the design process.</p> <p>Think of ways to use the design process.</p>	Identify Analyze Past Present Design process
Science Fusion Unit 9 Lessons 1 – 4 PLTW Module 1: Properties of Matter	<p><i>Strand 5: Physical Science</i></p> <p>Concept 1: Properties of Objects and Materials Classify objects and materials by their observable properties.</p> <p>PO 1. Describe objects in terms of measurable properties (e.g., length, volume, weight, temperature) using scientific tools.</p> <p>PO 2. Classify materials as solids, liquids, or gases.</p> <p>PO 3. Demonstrate that water can exist as a:</p> <ul style="list-style-type: none"> • gas – vapor • liquid – water • solid – ice <p>PO 4. Demonstrate that solids have a definite shape and that liquids and gases take the shape of their containers.</p>	<p>How can we classify objects and materials?</p> <p>What are ways to measure properties using tools?</p> <p>How can you classify materials as solids, liquids, or gases?</p> <p>How do you know that solids have a definite shape and that liquids and gases take the shape of their container?</p>	<p>Identify ways to classify materials and objects.</p> <p>Determine ways to measure properties using tools.</p> <p>Classify materials as solids, liquids, or gases.</p> <p>Identify that solids have a definite shape and that liquids and gases take on the shape of their container.</p>	Properties Materials Matter Classify shape

<p>Science Fusion Unit 7 Lessons 1-6</p> <p>Science Fusion Unit 7 Lessons 1-6 Additional lessons: Solar system</p>	<p><i>Strand 6: Earth and Space Science</i></p> <p><i>Concept 3: Changes in the Earth and Sky</i> <i>Understand characteristics of weather conditions and climate.</i></p> <p>PO 1. Measure weather conditions (e.g., temperature, precipitation).</p> <p>PO 2. Record weather conditions (e.g., temperature, precipitation).</p> <p>PO 3. Identify the following types of clouds:</p> <ul style="list-style-type: none"> • cumulus • stratus • cirrus <p>PO 4. Analyze the relationship between clouds, temperature, and weather patterns.</p>	<p>What are the characteristics of weather conditions?</p> <p>What are the characteristics of climate?</p> <p>Why do we measure weather conditions?</p> <p>What are the types of clouds?</p> <p>What is the relationship between clouds and weather?</p>	<p>Identify the characteristics of weather conditions.</p> <p>Identify the characteristics of climate.</p> <p>Understand why we measure weather conditions.</p> <p>Identify the types of clouds.</p> <p>Explain what the relationship is between clouds and weather.</p>	<p>Weather</p> <p>Weather conditions</p> <p>Characteristics</p> <p>Climate</p> <p>Measure</p> <p>Cumulus</p> <p>Stratus</p> <p>Cirrus</p> <p>Temperature</p> <p>Precipitation</p>
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4th Quarter:				
Internet Resources on plant and animal cells.	<p>PO 2. Identify the following characteristics of a system:</p> <ul style="list-style-type: none"> • consists of multiple parts or subsystems • parts work interdependently. <p>PO 3. Identify parts of a system too small to be seen (e.g., plant and animal cells).</p>	<p>What are the characteristics of a system?</p> <p>What are the parts of plant and animal cells?</p>	<p>Identify the characteristics of a system.</p> <p>Identify and label the parts of both animal and plant cells.</p>	Cells Systems
Science Fusion Unit 3 Lesson 4, Unit 4, Lesson 4 PLTW Module 2: Form and Function	<p><i>Concept 2: Life Cycles</i> <i>Understand the life cycles of plants and animals.</i></p> <p>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.</p>	<p>What is a life cycle?</p> <p>What is the life cycle of various insects and mammals?</p> <p>How are their life cycles similar and different?</p>	<p>Understand what a life cycle is.</p> <p>Discover the life cycles of various insects and mammals.</p> <p>Compare the life cycles of various organisms.</p>	Life Cycle Insects Mammals Compare
Science Fusion Review Unit 1 Lessons 1 – 4 Math McGraw Chapter 9 Science Fusion Review Unit 1 Lessons 1 – 4 PLTW modules	<p><i>Strand 1: Inquiry Process</i> <i>Concept 3: Analysis and Conclusions</i> <i>Organize and analyze data; compare to predictions.</i></p> <p>PO 1. Organize data using graphs (i.e., pictograph, tally chart), tables, and journals.</p> <p>PO 2. Construct reasonable explanations of observations on the basis of data obtained (e.g., Based on the data, does this make sense? Could this really happen?).</p> <p>PO 3. Compare the results of the investigation to predictions made prior to the investigation.</p> <p>PO 4. Generate questions for possible future investigations based on the conclusions of the investigation.</p>	<p>How can I use organize data using graphs, tables, and journals?</p> <p>How can I construct reasonable explanations of observations on the basis of data obtained?</p> <p>How can I compare the results of the investigations to predictions made prior to the investigation?</p> <p>What are questions for possible future investigations based on the conclusions of the investigation?</p>	<p>Organize data using graphs, tables, and journals.</p> <p>Construct reasonable explanations of observations on the basis of data obtained.</p> <p>Compare the results of the investigation to predication made prior to the investigation.</p> <p>Generate questions for possible future investigations based on the conclusions of the investigation.</p>	Analysis Conclusion Data Graphs Tables Explanation Observation

<p>Science Fusion Review Unit 1 Lessons 1 – 4</p> <p>PLTW modules</p>	<p>Concept 4: Communication <i>Communicate results of investigations.</i></p> <p>PO 1. Communicate the results and conclusions of an investigation (e.g., verbal, drawn, or written).</p> <p>PO 2. Communicate with other groups to describe the results of an investigation.</p>	<p>In what different ways can I communicate the results of the investigations?</p> <p>Why is it beneficial to communicate with the other groups to describe the results of an investigation?</p>	<p>Communicate the results of the investigations in various ways.</p> <p>Understand why it is beneficial to communicate with the other groups to describe the results of an investigation.</p>	<p>Communication Verbal Drawn Written Results Beneficial</p>
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