Ganado Unified School District (Science/5th Grade)

PACING Guide SY 2014-2015

Timeline & Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
QUARTER 1: A Closer Look. Macmillan/ McGraw-Hill. Be a Scientist: The Scientific Method. Pgs. 2-14.	Observations, Questions, and Hypotheses Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources. S1C1PO 1. Formulate a relevant question through observations that can be tested by an investigation. S1C1PO 2. Formulate predictions in the realm of science based on observed cause and effect relationships. S1C1PO 3. Locate information (e.g., book, article, website) related to an investigation. (	• How do I formulate predictions, questions, or hypothesis based on my observations? • How do I formulate a relevant question through my observation that can be tested by an investigation? • How do I formulate predictions in the area of science based on observed cause and effect relationships? • How do I locate information (book, article, website) related to an investigation?	I will be able to: • Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources. • Formulate a relevant question *through* observations that can be tested by an investigation. • Formulate predictions in the realm of science based on observed cause and effect relationships. • Locate information (e.g., book, article, website) related to an investigation.	• Formulate • Predict • Question • Observation • Appropriate • Resources • Relevant • Test • Investigation • Cause and Effect

	Scientific Testing (Investigating and Modeling) Design and conduct controlled investigations. S1C2PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. S1C2PO 2. Plan a simple investigation that identifies the variables to be controlled. S1C2PO 3. Conduct simple investigations (e.g., related to forces and motion, Earth processes) based on student-developed questions in life, physical, and Earth and space sciences. S1C2PO 4. Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). S1C2PO 5. Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).	• How do I design and conduct controlled investigations? • How do I demonstrate safe behavior and appropriate procedures in a science inquiry? • How do I plan a simple investigation that identifies the variable to be controlled? • How do I conduct simple investigations based on student-developed questions in life, physical, and Earth and space sciences • How do I measure using appropriate tools and units of measure? • How do I record data in an organized and appropriate format?	I will be able to: • Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. • Plan a simple investigation that identifies the variables to be controlled. • 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. • Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). • Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).	• Safe Behavior • Procedures • Technology • Materials • Organisms • Science Inquiry • Simple Investigation • Variables • Controlled • Forces • Motion • Earth Processes • Student-Developed Questions • Physical • Earth • Space Science • Measure • Appropriate Tools • Ruler • Scale • Balance • Units of Measure • U.S. Metric • U.S. Customary • Data • Organized • T-Chart • Table • List • Written Log

	Analysis and Conclusions Analyze and interpret data to explain correlations and results; formulate new questions. S1C3PO 1. Analyze data obtained in a scientific investigation to identify trends and form conclusions. (See M05-S2C1-03) S1C3PO 2. Analyze whether the data is consistent with the proposed explanation that motivated the investigation. S1C3PO 3. Evaluate the reasonableness of the outcome of an investigation. S1C3PO 4. Develop new investigations and predictions based on questions that arise from the findings of an investigation. S1C3PO 5. Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object).	• How do I analyze and interpret data to explain correlations and results? • How I formulate new questions? • How do I analyze data obtained in a scientific investigation to identify trends? • How do I analyze data obtained in a scientific investigation to form trends? • How do I analyze whether the data is consistent with the proposed explanation that motivated the investigation? • How do I evaluate the reasonableness of the outcome of an investigation? • How do I develop new investigations	I will be able to: • Analyze data obtained in a scientific investigation to identify trends and form conclusions. • Analyze whether the data is consistent with the proposed explanation that motivated the investigation. • Evaluate the reasonableness of the outcome of an investigation. • Develop new investigations and predictions based on questions that arise from the findings of an investigation. • Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object).	• Analyze • Data • Scientific Investigation • Trends • Conclusions • Consistent • Explanation • Motivated • Evaluate • Reasonableness • Outcome • Predictions • Relationships • Variables • Time • Distance • Incline • Mass of Object

		and predictions based on questions that come from an investigation? • How do I identify possible relationships between variables in a simple investigations?		
	Communication Communicate results of investigations. S1C4PO 1. Communicate verbally or in writing the results of an inquiry. S1C4PO 2. Choose an appropriate graphic representation for collected data: • bar graph • line graph • Venn diagram • model S1C4PO 3. Communicate with other groups or individuals to compare the results of a common investigation.	• How do I communicate verbally or in writing the results of an inquiry? • How do choose an appropriate graphic representation for collected data (bar graph, line graph, Venn Diagram)? • How do I communicate with other groups or individuals to compare results of a common investigation?	I will be able to: • Communicate verbally or in writing the results of an inquiry. • Choose an appropriate graphic representation for collected data: bar graph, line graph Venn Diagram. • Communicate with other groups or individuals to compare the results of a common investigation	• Communicate • Verbal • Results • Inquiry • Graphic Representation • Bar Graph • Line Graph • Venn Diagram • Model • Common Investigation

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QUARTER 2: Macmillan/ McGraw-Hill. Pgs. 43, 44-45, 126, 127, 176-177, 442, 443, 467, 495, 560-561, 580-581, 586, 673,	History of Science as a Human Endeavor Identify individual, cultural, and technological contributions to scientific knowledge. S2C1PO 1. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Percy Lavon Julian [scientist], supports Strand 4; Niels Bohr [scientist], supports Strand 5; Edwin Hubble [scientist], supports Strand 6).	• How do I identify the diverse people and culture, past and present, have made important contributions to scientific innovations?	I will be able to: • Identify the diverse people and culture, past and present, have made important contributions to scientific innovations.	• Identify • Diverse • Cultures • Contributions • Scientific Innocations • Percy Lavon Julian • Niels Bohr • Edwin Hubble
Macmillan/ McGraw-Hill 674-675.	Nature of Scientific Knowledge Understand how science is a process for generating knowledge. S2C2PO 1. Provide examples that support the premise that science is an ongoing process that changes in response to new information and discoveries (e.g., space exploration, medical advances).	• How do I provide examples that support the understanding that science is an ongoing process that changes in response to new information and discoveries?	I will be able to: • 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). • Explain the cycle by which new scientific knowledge	• Examples • Premise • Ongoing Process • Discoveries • Space Exploration • Medical Advances • Cycle • Scientific Knowledge • Scientific Inquiry

	S2C2PO 2. Explain the cycle by which new scientific knowledge generates new scientific inquiry. S2C2PO 3. Describe how scientific knowledge is subject to modification and/or change as new information/technology challenges prevailing theories. S2C2PO 4. Compare collaborative approaches that scientists use for investigations (e.g., teams, individual with peer review). S2C2PO 5. Describe qualities of the scientists' habits of mind (e.g., openness, skepticism, integrity, tolerance).	• How do I explain the cycle by which new scientific knowledge generates new scientific inquiry? • How do I describe scientific knowledge is subject to changes or change as new information/technology challenges new theories? • How do I compare collaborative approaches that scientists use for investigations? • How do I describe qualities of the scientific habits of mind?	generates new scientific inquiry. • Describe how scientific knowledge is subject to modification and/or change as new information/technology challenges prevailing theories. • Compare collaborative approaches that scientists use for investigations (e.g., teams, individual with peer review). • Describe qualities of the scientists' habits of mind (e.g., openness, skepticism, integrity, tolerance).	• Modification • Information • Technology • Prevailing • Theories • Collaborative • Investigation • Qualities • Openness • Skepticism • Integrity • Tolerance
MacMillan/ McGraw-Hill. Natural Hazards. Pgs. 196, 214, 261, 270, 277, 279, 280-281, 349	Changes in Environments Describe the interactions between human populations, natural hazards, and the environment. S3C1PO 1. Explain the impacts of natural hazards on habitats (e.g., global warming, floods, asteroid or large meteor impacts).	• How do I explain the impacts of natural hazards on habitats? • How do I propose a solution, resource, or product that addresses a specific human, animal, or habitat need?	I will be able to: • Explain the impacts of natural hazards on habitats (e.g., global warming, floods, asteroid or large meteor impacts). • Propose a solution, resource, or product that addresses a specific human, animal, or habitat need.	• Natural Hazards • Habitats • Global Warming • Floods • Asteroids • Meteor Impacts • Solution • Resource • Evaluate

	S3C1PO 2. Propose a solution, resource, or product that addresses a specific human, animal, or habitat need. S3C1PO 3. Evaluate the possible strengths and weaknesses of a proposed solution to a specific problem relevant to human, animal, or habitat needs.	• How do I evaluate the possible strengths and weaknesses of a proposed solution to a specific problem important to human, animal, or habitat needs?	• Evaluate the possible strengths and weaknesses of a proposed solution to a specific problem relevant to human, animal, or habitat needs.	• Strength • Weakness • Solution • Relevant
TMR Other Resources	Science and Technology in Society Develop viable solutions to a need or problem. S3C2PO 1. Describe the relationship between science and technology. S3C2PO 2. Explain how scientific knowledge, skills, and technological capabilities are integral to a variety of careers. S3C2PO 3. Design and construct a technological solution to a common problem or need using common materials.	• How do I describe the relationship between science and technology? • How do I explain how scientific knowledge, skills, and technological capabilities are integral to a variety of careers? • How do I design and construct a technological solution to a common problem or need using common materials?	I will be able to: • Describe the relationship between science and technology. • Explain how scientific knowledge, skills, and technological capabilities are integral to a variety of careers. • Design and construct a technological solution to a common problem or need using common materials.	• Relationship • Science • Technology • Scientific Knowledge • Scientific Skills • Technological Capabilities • Careers • Design • Construct
TMR Other Resources	Observations, Questions, and Hypotheses - Formulate predictions, questions, or hypotheses based on observations. Locate appropriate	• How do I formulate predictions, questions, or	I will be able to: • Formulate predictions, questions, or hypotheses based on observations. Locate	• Formulate • Predict • Question • Observation

	resources. S1C1PO 1. Formulate a relevant question through observations that can be tested by an investigation. S1C1PO 2. Formulate predictions in the realm of science based on observed cause and effect relationships. S1C1PO 3. Locate information (e.g., book, article, website) related to an investigation.	hypothesis based on my observations? • How do I formulate a relevant question through my observation that can be tested by an investigation? • How do I formulate predictions in the area of science based on observed cause and effect relationships? • How do I locate information (book, article, website) related to an investigation?	appropriate resources. • Formulate a relevant question through observations that can be tested by an investigation. • Formulate predictions in the realm of science based on observed cause and effect relationships. • Locate information (e.g., book, article, website) related to an investigation.	• Appropriate • Resources • Relevant • Test • Investigation • Cause and Effect
TMR Other Resources	Scientific Testing (Investigating and Modeling) Design and conduct controlled investigations. S1C2PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. S1C2PO 2. Plan a simple investigation that identifies the variables to be	• How do I design and conduct controlled investigations? • How do I demonstrate safe behavior and appropriate procedures in a science inquiry?	I will be able to: • Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. • Plan a simple investigation that identifies the variables to be controlled. • Conduct simple investigations (e.g., related to forces and motion, Earth processes) based	• Safe Behavior • Procedures • Technology • Materials • Organisms • Science Inquiry • Simple Investigation • Variables • Controlled • Forces

	controlled. S1C2PO 3. Conduct simple investigations (e.g., related to forces and motion, Earth processes) based on student-developed questions in life, physical, and Earth and space sciences. S1C2PO 4. Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). S1C2PO 5. Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).	• How do I plan a simple investigation that identifies the variable to be controlled? • How do I conduct simple investigations based on student-developed questions in life, physical, and Earth and space sciences • How do I measure using appropriate tools and units of measure? • How do I record data in an organized and appropriate format?	on student-developed questions in life, physical, and Earth and space sciences. • Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). • Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).	• Motion • Earth Processes • Student-Developed Questions • Physical • Earth • Space Science • Measure • Appropriate Tools • Ruler • Scale • Balance • Units of Measure • U.S. Metric • U.S. Customary • Data • Organized • T-Chart • Table • List • Written Log
TMR Other Resources	Analysis and Conclusions Analyze and interpret data to explain correlations and results; formulate new questions. S1C3PO 1. Analyze data obtained in a scientific investigation to identify trends and form conclusions. S1C3PO 2. Analyze whether the data is consistent with the proposed explanation that motivated the	• How do I analyze and interpret data to explain correlations and results? • How I formulate new questions? • How do I analyze data obtained in a scientific	I will be able to: • Analyze data obtained in a scientific investigation to identify trends and form conclusions. • Analyze whether the data is consistent with the proposed explanation that motivated the investigation. • Evaluate the reasonableness of the outcome of an investigation.	• Analyze • Data • Scientific Investigation • Trends • Conclusions • Consistent • Explanation • Motivated • Evaluate • Reasonableness

	investigation. S1C3PO 3. Evaluate the reasonableness of the outcome of an investigation. S1C3PO 4. Develop new investigations and predictions based on questions that arise from the findings of an investigation. S1C3PO 5. Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object).	investigation to identify trends? • How do I analyze data obtained in a scientific investigation to form trends? • How do I analyze whether the data is consistent with the proposed explanation that motivated the investigation? • How do I evaluate the reasonableness of the outcome of an investigation? • How do I develop new investigations and predictions based on questions that come from an investigation? • How do I identify possible relationships between variables in	• Develop new investigations and predictions based on questions that arise from the findings of an investigation. • Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object).	• Outcome • Predictions • Relationships • Variables • Time • Distance • Incline • Mass of Object

		a simple investigations?		
TMR Other Resources	Communication Communicate results of investigations. S1C4PO 1. Communicate verbally or in writing the results of an inquiry. S1C4PO 2. Choose an appropriate graphic representation for collected data: • bar graph • line graph • Venn diagram • model S1C4PO 3. Communicate with other groups or individuals to compare the results of a common investigation.	• How do I communicate verbally or in writing the results of an inquiry? • How do choose an appropriate graphic representation for collected data (bar graph, line graph, Venn Diagram)? • How do I communicate with other groups or individuals to compare results of a common investigation?	I will be able to: • Communicate verbally or in writing the results of an inquiry. • Choose an appropriate graphic representation for collected data: bar graph, line graph Venn Diagram. • Communicate with other groups or individuals to compare the results of a common investigation	• Communicate • Verbal • Results • Inquiry • Graphic Representation • Bar Graph • Line Graph • Venn Diagram • Model • Common Investigation

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QUARTER 3: MacMillan/ McGraw-Hill. Unit C. Earth and Its Resources. Ch. 5. Our Dynamic Earth. Pgs. 236-296. Ch. 6. Protecting Earth's Resources. Pgs. 298-354.	Changes in Environments Describe the interactions between human populations, natural hazards, and the environment. S3C1PO 1. Explain the impacts of natural hazards on habitats (e.g., global warming, floods, asteroid or large meteor impacts). S3C1PO 2. Propose a solution, resource, or product that addresses a specific human, animal, or habitat need. S3C1PO 3. Evaluate the possible strengths and weaknesses of a proposed solution to a specific problem relevant to human, animal, or habitat needs.	• How do I explain the impacts of natural hazards on habitats? • How do I propose a solution, resource, or product that address a specific human, animal, or habitat need? • How do I propose a solution? • How do I propose a product that addresses a specific human, animal, or habitat need? • How do I evaluate the possible strengths and weaknesses of a proposed solution to	I will be able to: • Explain the impacts of natural hazards on habitats (e.g., global warming, floods, asteroid or large meteor impacts). • Propose a solution, resource, or product that addresses a specific human, animal, or habitat need. • Evaluate the possible strengths and weaknesses of a proposed solution to a specific problem relevant to human, animal, or habitat needs.	• Impact • Natural Hazards • Habitats • Global Warming • Floods • Asteroids • Meteor Impacts • Solution • Resource • Evaluate Strengths • Weakness

		a specific problem important to human, animal, or habitat need?		
TMR Other Resources	Science and Technology in Society Develop viable solutions to a need or problem. S3C2PO 1. Describe the relationship between science and technology. S3C2PO 2. Explain how scientific knowledge, skills, and technological capabilities are integral to a variety of careers. S3C2PO 3. Design and construct a technological solution to a common problem or need using common materials.	• How do I describe the relationship between science and technology? • How do I explain how scientific knowledge, skills, and technological capabilities are part of careers? • How do I design and construct a technological solution to a common problem or need using common materials?	I will be able to: • Describe the relationship between science and technology • Explain how scientific knowledge, skills, and technological capabilities are integral to a variety of careers. • Design and construct a technological solution to a common problem or need using common materials.	• Relationship • Science • Technology • Scientific Knowledge • Scientific Skills • Technological Capabilities • Careers • Design • Construct
TMR Other Resources	Structure and Function in Living Systems Understand the relationships between structures and functions of organisms. S4C1PO 1. Identify the functions and parts of the skeletal system: • protection – rib cage, cranium • support – vertebrae • movement – pelvis, femur, hip	• How do I identify functions and parts of the skeletal system (protection, support, movement)? • How do identify the following types of muscles (cardiac, smooth, skeletal)?	I will be able to: • Identify the functions and parts of the skeletal system: protection, support, movement. • Identify the following types of muscles: cardiac, smooth, skeletal. • Identify the functions and parts of the nervous system: control center, relay mechanism, or transport system.	• Identify • Functions • Skeletal System • Protection • Rib Cage • Cranium • Support • Vertebrae • Movement • Pelvis

	S4C1PO 2. Identify the following types of muscles: • cardiac – heart • smooth – stomach • skeletal – biceps S4C1PO 3. Identify the functions and parts of the nervous system: • control center – brain • relay mechanism – spinal cord • transport messages – nerves S4C1PO 4. Distinguish between voluntary and involuntary responses.	• How do I identify the functions of parts of the nervous system (control center, relay mechanism)? • How do I distinguish between voluntary and involuntary responses?	• Distinguish between voluntary and involuntary responses.	• Femur Hip • Muscles • Cardiac • Heart • Smooth • Stomach • Biceps • Function • Nervous System • Control Center • Brain • Relay Mechanism • Spinal Cord • Transport Messages • Nerves • Voluntary • Involuntary Responses
TMR Other Resources	Observations, Questions, and Hypotheses Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources. S1C1PO 1. Formulate a relevant question through observations that can be tested by an investigation. S1C1PO 2. Formulate predictions in the realm of science based on observed cause and effect relationships.	• How do I formulate predictions, questions, or hypothesis based on my observations? • How do I formulate a relevant question through my observation that can be tested by an investigation?	I will be able to: • Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources. • fFrmulate a relevant question through observations that can be tested by an investigation. • Formulate predictions in the realm of science based on observed cause and effect relationships.	• Formulate • Predict • Question • Observation • Appropriate • Resources • Relevant • Test • Investigation • Cause and Effect

	S1C1PO 3. Locate information (e.g., book, article, website) related to an investigation.	• How do I formulate predictions in the area of science based on observed cause and effect relationships? • How do I locate information (book, article, website) related to an investigation?	• Locate information (e.g., book, article, website) related to an investigation.	
TMR Other Resources	Scientific Testing (Investigating and Modeling) Design and conduct controlled investigations. S1C2PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. S1C2PO 2. Plan a simple investigation that identifies the variables to be controlled. S1C2PO 3. Conduct simple investigations (e.g., related to forces and motion, Earth processes) based on student-developed questions in life, physical, and Earth and space sciences. S1C2PO 4. Measure using appropriate tools (e.g., ruler, scale, balance) and	• How do I design and conduct controlled investigations? • How do I demonstrate safe behavior and appropriate procedures in a science inquiry? • How do I plan a simple investigation that identifies the variable to be controlled? • How do I conduct simple investigations based on student-developed questions in life, physical, and	I will be able to: • Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. • Plan a simple investigation that identifies the variables to be controlled. • 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. • Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). • Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).	• Safe Behavior • Procedures • Technology • Materials • Organisms • Science Inquiry • Simple Investigation • Variables • Controlled • Forces • Motion • Earth Processes • Student-Developed Questions • Physical • Earth • Space Science • Measure • Appropriate Tools • Ruler

	units of measure (i.e., metric, U.S. customary). S1C2PO 5. Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).	Earth and space sciences • How do I measure using appropriate tools and units of measure? • How do I record data in an organized and appropriate format?		• Scale • Balance • Units of Measure • U.S. Metric • U.S. Customary • Data • Organized • T-Chart • Table • List • Written Log
TMR Other Resources	Analysis and Conclusions Analyze and interpret data to explain correlations and results; formulate new questions. S1C3PO 1. Analyze data obtained in a scientific investigation to identify trends and form conclusions. (See M05-S2C1-03) S1C3PO 2. Analyze whether the data is consistent with the proposed explanation that motivated the investigation. S1C3PO 3. Evaluate the reasonableness of the outcome of an investigation. S1C3PO 4. Develop new investigations and predictions based on questions that arise from the findings of an investigation.	• How do I analyze and interpret data to explain correlations and results? • How I formulate new questions? • How do I analyze data obtained in a scientific investigation to identify trends? • How do I analyze data obtained in a scientific investigation to form trends? • How do I analyze whether the data is	I will be able to: • Analyze data obtained in a scientific investigation to identify trends and form conclusions. • Analyze whether the data is consistent with the proposed explanation that motivated the investigation. • Evaluate the reasonableness of the outcome of an investigation. • Develop new investigations and predictions based on questions that arise from the findings of an investigation. • Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object).	• Analyze • Data • Scientific Investigation • Trends • Conclusions • Consistent • Explanation • Motivated • Evaluate • Reasonableness • Outcome • Predictions • Relationships • Variables • Time • Distance • Incline • Mass of Object

	S1C3PO 5. Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object).	consistent with the proposed explanation that motivated the investigation? • How do I evaluate the reasonableness of the outcome of an investigation? • How do I develop new investigations and predictions based on questions that come from an investigation? • How do I identify possible relationships between variables in a simple investigations?		
TMR Other Resources	Concept 4: Communication Communicate results of investigations. S1C4PO 1. Communicate verbally or in writing the results of an inquiry. S1C4PO 2. Choose an appropriate graphic representation for collected data: • bar graph	• How do I communicate verbally or in writing the results of an inquiry? • How do choose an appropriate graphic representation for collected data (bar	I will be able to: • Communicate verbally or in writing the results of an inquiry. • Choose an appropriate graphic representation for collected data: bar graph, line graph Venn Diagram. • Communicate with other groups or individuals to	• Communicate • Verbal • Results • Inquiry • Graphic Representation • Bar Graph • Line Graph • Venn Diagram • Model

	• line graph • Venn diagram • model S1C4PO 3. Communicate with other groups or individuals to compare the results of a common investigation.	graph, line graph, Venn Diagram)? • How do I communicate with other groups or individuals to compare results of a common investigation?	compare the results of a common investigation	• Common Investigation

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QUARTER 4: MacMillan/ McGraw-Hill Unit E Matter: Ch. 9 Comparing Kinds of Matter. Pgs. 476-514. CH. 10: Physical and Chemical Changes. Pgs. 516-562.	Properties and Changes of Properties in Matter Understand physical and chemical properties of matter. S5C1PO 1. Identify that matter is made of smaller units called: • molecules (e.g., H2O, CO2) • atoms (e.g., H, N, Na) S5C1PO 2. Distinguish between mixtures and compounds. S5C1PO 3. Describe changes of matter: • physical – cutting wood, ripping paper, freezing water • chemical – burning of wood, rusting of iron, milk turning sour	• How do I identify that matter is made of smaller units called molecules or atoms? • How I distinguish between mixtures and compounds? • How I describe changes of matter (physical, chemical)?	I will be able to: • Identify that matter is made of smaller units called: molecules, atoms • Distinguish between mixtures and compounds. • Describe changes of matter: physical or chemical.	• Identify • Matter • Molecules • Atoms • Distinguish • Mixtures • Compounds • Physical • Chemical • Forces • Gravity • Friction • Motion • Deformation
MacMillan/ McGraw-Hill Unit F: Forces and Energy. Ch. 11. Using	Concept 2: Motion and Forces Understand the relationship between force and motion. S5C2PO 1. Describe the following forces:	• How do I describe the following forces (gravity, friction)? • How do I describe the various effects	I will be able to: • Describe the following forces: gravity or friction. • Describe the various effects forces can have on an object (e.g., cause motion, halt	• Describe • Gravity • Friction • Forces • Motion • Wedge

Forces. Pgs. 568-620.	• gravity • friction S5C2PO 2. Describe the various effects forces can have on an object (e.g., cause motion, halt motion, change direction of motion, cause deformation). S5C2PO 3. Examine forces and motion through investigations using simple machines (e.g., wedge, plane, wheel and axle, pulley, lever). S5C2PO 4. Demonstrate effects of variables on an object's motion (e.g., incline angle, friction, applied forces).	forces can have on an object? • How do I examine the forces and motion through investigations using machines? • How do I demonstrate effects of variables on an object's motion?	motion, change direction of motion, cause deformation). • Examine forces and motion through investigations using simple machines (e.g., wedge, plane, wheel and axle, pulley, lever). • Demonstrate effects of variables on an object's motion (e.g., incline angle, friction, applied forces).	• Plane • Wheel • Axle • Pulley • Lever • Variables • Incline Angle • Friction
TMR Other Resources	Earth's Processes and Systems Understand the processes acting on the Earth and their interaction with the Earth systems. S6C2PO 1. Describe how the Moon's appearance changes during a four-week lunar cycle. S6C2PO 2. Describe how Earth's rotation results in day and night at any particular location. S6C2PO 3. Distinguish between revolution and rotation.	• How do I describe how the Moon's appearance changes during a four-week lunar cycle? • How do I describe how Earth's rotation results in day and night at any particular location? • How do I distinguish between revolution and rotation?	I will be able to: • Describe how the Moon's appearance changes during a four-week lunar cycle. • Describe how Earth's rotation results in day and night at any particular location. • Distinguish between revolution and rotation. • Describe the role of gravity as an attractive force between celestial objects.	• Lunar Cycle • Earth's Rotation • Revolution • Rotation • Gravity • Celestial Objects

	S6C2PO 4. Describe the role of gravity as an attractive force between celestial objects.	• How do describe the role of gravity as an attractive force between celestial objects?		
TMR Other Resources	Observations, Questions, and Hypotheses Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources. S1C1PO 1. Formulate a relevant question through observations that can be tested by an investigation. (See M05-S2C1-01) S1C1PO 2. Formulate predictions in the realm of science based on observed cause and effect relationships. S1C1PO 3. Locate information (e.g., book, article, website) related to an investigation. (See W05-S3C6-01 and R05-S3C1-05)	• How do I formulate predictions, questions, or hypothesis based on my observations? • How do I formulate a relevant question through my observation that can be tested by an investigation? • How do I formulate predictions in the area of science based on observed cause and effect relationships? • How do I locate information (book, article, website) related to an investigation?	I will be able to: • Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources. • Formulate a relevant question through observations that can be tested by an investigation. • Formulate predictions in the realm of science based on observed cause and effect relationships. • Locate information (e.g., book, article, website) related to an investigation.	• Formulate • Predict • Question • Observation • Appropriate • Resources • Relevant • Test • Investigation • Cause and Effect
TMR Other Resources	Scientific Testing (Investigating and Modeling) Design and conduct controlled	• How do I design and conduct controlled investigations?	I will be able to: • Demonstrate safe behavior and appropriate procedures (e.g.,	• Safe Behavior • Procedures • Technology

	investigations. S1C2PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry. S1C2PO 2. Plan a simple investigation that identifies the variables to be controlled. S1C2PO 3. Conduct simple investigations (e.g., related to forces and motion, Earth processes) based on student-developed questions in life, physical, and Earth and space sciences. S1C2PO 4. Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). (See M05-S4C4-01) S1C2PO 5. Record data in an organized and appropriate format (e.g., t-chart, table, list, written log). (See W05-S3C2-01 and W05-S3C3-01)	• How do I demonstrate safe behavior and appropriate procedures in a science inquiry? • How do I plan a simple investigation that identifies the variable to be controlled? • How do I conduct simple investigations based on student-developed questions in life, physical, and Earth and space sciences • How do I measure using appropriate tools and units of measure? • How do I record data in an organized and appropriate format?	use and care of technology, materials, organisms) in all science inquiry. • Plan a simple investigation that identifies the variables to be controlled. • 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. • Measure using appropriate tools (e.g., ruler, scale, balance) and units of measure (i.e., metric, U.S. customary). • Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).	• Materials • Organisms • Science Inquiry • Simple Investigation • Variables • Controlled • Forces • Motion • Earth Processes • Student-Developed Questions • Physical • Earth • Space Science • Measure • Appropriate Tools • Ruler • Scale • Balance • Units of Measure • U.S. Metric • U.S. Customary • Data • Organized • T-Chart • Table • List • Written Log
TMR Other Resources	Analysis and Conclusions Analyze and interpret data to explain correlations and results; formulate new questions.	• How do I analyze and interpret data to explain correlations and results?	I will be able to: • Analyze data obtained in a scientific investigation to	• Analyze • Data

	S1C3PO 1. Analyze data obtained in a scientific investigation to identify trends and form conclusions. (See M05-S2C1-03) S1C3PO 2. Analyze whether the data is consistent with the proposed explanation that motivated the investigation. S1C3PO 3. Evaluate the reasonableness of the outcome of an investigation. S1C3PO 4. Develop new investigations and predictions based on questions that arise from the findings of an investigation. S1C3PO 5. Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object).	• How I formulate new questions? • How do I analyze data obtained in a scientific investigation to identify trends? • How do I analyze data obtained in a scientific investigation to form trends? • How do I analyze whether the data is consistent with the proposed explanation that motivated the investigation? • How do I evaluate the reasonableness of the outcome of an investigation? • How do I develop new investigations and predictions based on questions that come from an investigation?	identify trends and form conclusions. • Analyze whether the data is consistent with the proposed explanation that motivated the investigation. • Evaluate the reasonableness of the outcome of an investigation. • Develop new investigations and predictions based on questions that arise from the findings of an investigation. • Identify possible relationships between variables in simple investigations (e.g., time and distance; incline and mass of object).	• Scientific Investigation • Trends • Conclusions • Consistent • Explanation • Motivated • Evaluate • Reasonableness • Outcome • Predictions • Relationships • Variables • Time • Distance • Incline • Mass of Object

		• How do I identify possible relationships between variables in a simple investigations?		
TMR Other Resources	Communication Communicate results of investigations. S1C4PO 1. Communicate verbally or in writing the results of an inquiry. S1C4PO 2. Choose an appropriate graphic representation for collected data: • bar graph • line graph • Venn diagram • model S1C4PO 3. Communicate with other groups or individuals to compare the results of a common investigation.	• How do I communicate verbally or in writing the results of an inquiry? • How do choose an appropriate graphic representation for collected data (bar graph, line graph, Venn Diagram)? • How do I communicate with other groups or individuals to compare results of a common investigation?	I will be able to: • Communicate verbally or in writing the results of an inquiry. • Choose an appropriate graphic representation for collected data: bar graph, line graph Venn Diagram. • Communicate with other groups or individuals to compare the results of a common investigation	• Communicate • Verbal • Results • Inquiry • Graphic Representation • Bar Graph • Line Graph • Venn Diagram • Model • Common Investigation