

4th Grade Unit	Major Outcomes	Catholic Identity	Assessments/activities	Resources
Atmosphere Changes in Weather	<p>S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.</p> <p>S.IP.04.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.04.12 Generate questions based on observations.</p> <p>S.IP.04.13 Plan and conduct simple and fair investigations.</p> <p>S.IP.04.14 Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer, graduated cylinder/beaker).</p> <p>S.IP.04.15 Make accurate measurements with appropriate units (millimeters centimeters, meters, milliliters, liters, Celsius, grams, seconds, minutes) for the measurement tool.</p> <p>S.IP.04.16 Construct simple charts and graphs from data and observations.</p>	<ul style="list-style-type: none"> • God is fully in control of creation at all times • Psalm 29:10 (The Lord is enthroned above the flood) • Psalm 107:25 (His command raised up a storm wind which tossed its waves on high) • Noah • God responds to His peoples pleas for deliverance from destruction • Our response to victims of destruction (Aid) 	<ul style="list-style-type: none"> • Weather journal • Making and using weather instruments (windsock, rain gauge, barometer) • Quizzes and final test • Weather Webquest – Performance Assessment • Research storm and safety precautions: Poster • Detroit Weatherday 	<ul style="list-style-type: none"> • Big Book: Being a Scientist • The Weather Report resource book • Harcourt Science Unit D: Patterns on Earth and in Space; Chapter 1 Weather Conditions • Weather and Climate resource book • Weather station instruments: thermometers, rain gauge, barometer • Weather books and magazines • UnitedStreaming

<p>Atmosphere Changes in Weather</p>	<p>S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.</p> <p>S.IA.04.11 Summarize information from charts and graphs to answer scientific questions.</p> <p>S.IA.04.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.04.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.04.14 Develop research strategies and skills for information gathering and problem solving.</p> <p>S.RS.E.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.</p> <p>S.RS.04.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p>			
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<p>Atmosphere Changes in Weather</p>	<p>S.RS.04.14 Use data/samples as evidence to separate fact from opinion.</p> <p>S.RS.04.15 Use evidence when communicating scientific ideas.</p> <p>S.RS.04.16 Identify technology used in everyday life.</p> <p>S.RS.04.17 Identify current problems that may be solved through the use of technology.</p> <p>S.RS.04.19 Describe how people have contributed to science throughout history and across cultures.</p> <p>E.FE.M.1 Atmosphere- The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different physical and chemical composition at different elevations.</p> <p>E.FE.07.11 Describe the atmosphere as a mixture of gases.</p> <p>E.ES.M.1 Solar Energy- The sun is the major source of energy for phenomena on the surface of the Earth.</p>			
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<p>Atmosphere Changes in Weather</p>	<p>E.ES.07.11 Demonstrate, using a model or drawing, the relationship between the warming by the sun of the Earth and the water cycle as it applies to the atmosphere (evaporation, water vapor, warm air rising, cooling, condensation, clouds).</p> <p>E.ES.07.13 Describe how the warming of the Earth by the sun produces winds and ocean currents.</p> <p>P.PM.E.5 Conductive and Reflective Properties- Objects vary to the extent they absorb and reflect light energy and conduct heat and electricity.</p> <p>P.PM.03.51 Demonstrate how some materials are heated more than others by light that shines on them.</p> <p>E.ES.E.2 Weather- Weather changes from day to day and over the seasons.</p> <p>E.ES.01.21 Compare daily changes in the weather related to temperature (cold, hot, warm, cool); cloud cover (cloudy, partly cloudy, foggy); precipitation (rain, snow, hail, freezing rain); wind (breezy, windy, calm).</p>			
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<p>Atmosphere Changes in Weather</p>	<p>E.ES.01.22 Describe and compare weather related to the four seasons in terms of temperature, cloud cover, precipitation, and wind.</p> <p>E.ES.01.23 Describe severe weather characteristics. *</p> <p>E.ES.01.24 Describe precautions that should be taken for human safety during severe weather conditions (thunder and lightning, tornadoes, strong winds, heavy precipitation).</p> <p>E.ES.E.3 Weather Measurement- Scientists use tools for observing, recording, and predicting weather changes.</p> <p>E.ES.01.31 Identify the tools that might be used to measure temperature, precipitation, cloud cover, and wind.</p> <p>E.ES.01.32 Observe and collect data of weather conditions over a period of time.</p> <p>E.ES.M.7 Weather and Climate- Global patterns of atmospheric and oceanic movement influence weather and climate.</p>			
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	<p>E.ES.07.72 Describe how different weather occurs due to the constant motion of the atmosphere from the energy of the sun reaching the surface of the Earth.</p> <p>E.ES.07.74 Describe weather conditions associated with frontal boundaries (cold, warm, stationary, and occluded) and the movement of major air masses and the jet stream across North America using a weather map.</p>			
<p>Force and Motion/Simple Machines</p>	<p>S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.</p> <p>S.IP.04.12 Generate questions based on observations.</p> <p>S.IP.04.13 Plan and conduct simple and fair investigations.</p> <p>S.IP.04.14 Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer, graduated cylinder/beaker).</p>	<ul style="list-style-type: none"> • God’s Eternal Masterpiece • Isaac Newton – theologian and highly religious; the Bible was his greatest passion 	<ul style="list-style-type: none"> • Describing motion • Investigations on forces including gravity and friction • Exploration of simple machines • Investigations on simple machines using Science Discovery Journal • Webquest on Simple Machines – Performance Assessment • Impression Five Museum: Simple Machines workshop 	<ul style="list-style-type: none"> • Big Book: Forces and Motion • Harcourt Science Unit F: Forces and Motion; Chapters 2-3 Motion – Forces at Work, Simple Machines • Edheads website: Simple Machines • Simple Machines for exploration • Simple Machines Investigation • Force and Motion, Simple Machine books • United Streaming

<p>Force and Motion/Simple Machines</p>	<p>S.IP.04.15 Make accurate measurements with appropriate units (millimeters centimeters, meters, milliliters, liters, Celsius, grams, seconds, minutes) for the measurement tool.</p> <p>S.IP.04.16 Construct simple charts and graphs from data and observations.</p> <p>S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.</p> <p>S.IA.04.11 Summarize information from charts and graphs to answer scientific questions.</p> <p>S.IA.04.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.04.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.04.14 Develop research strategies and skills for information gathering and problem solving.</p> <p>S.IA.04.15 Compare and contrast sets of data from multiple trials of a science investigation to explain reasons for differences.</p>			
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<p>Force and Motion/Simple Machines</p>	<p>S.RS.E.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.</p> <p>S.RS.04.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and Activities.</p> <p>S.RS.04.14 Use data/samples as evidence to separate fact from opinion.</p> <p>S.RS.04.15 Use evidence when communicating scientific ideas.</p> <p>S.RS.04.16 Identify technology used in everyday life.</p> <p>S.RS.04.17 Identify current problems that may be solved through the use of technology.</p> <p>S.RS.04.19 Describe how people have contributed to science throughout history and across cultures.</p>			
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<p>Force and Motion/Simple Machines</p>	<p>P.FM.M.4 Speed- Motion can be described by a change in position relative to a point of reference. The motion of an object can be described by its speed and the direction it is moving. The position and speed of an object can be measured and graphed as a function of time.</p> <p>P.FM.05.41 Explain the motion of an object relative to its point of reference.</p> <p>P.FM.05.42 Describe the motion of an object in terms of distance, time and direction, as the object moves, and in relationship to other objects.</p> <p>P.FM.05.43 Illustrate how motion can be measured and represented on a graph.</p> <p>P.FM.E.4 Speed- An object is in motion when its position is changing. The speed of an object is defined by how far it travels in a standard amount of time. *</p> <p>P.FM.03.41 Describe the motion of objects in terms of direction.</p> <p>P.FM.03.42 Identify changes in motion (change direction, speeding up, slowing down).</p>			
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Force and Motion/Simple Machines

P.FM.03.43 Relate the speed of an object to the distance it travels in a standard amount of time.

P.FM.E.3 Force- A force is either a push or a pull. The motion of objects can be changed by forces. The size of the change is related to the size of the force. The change is also related to the weight (mass) of the object on which the force is being exerted. When an object does not move in response to a force, it is because another force is being applied by the environment.

P.FM.03.35 Describe how a push or a pull is a force.

P.FM.03.36 Relate a change in motion of an object to the force that caused the change of motion.

P.FM.03.37 Demonstrate how the change in motion of an object is related to the strength of the force acting upon the object and to the mass of the object.

P.FM.03.38 Demonstrate when an object does not move in response to a force, it is because another force is acting on it.

<p>Force and Motion/Simple Machines</p>	<p>P.FM.M.2 Force Interactions- Some forces between objects act when the objects are in direct contact (touching), such as friction and air resistance, or when they are not in direct contact (not touching), such as magnetic force, electrical force, and gravitational force.</p> <p>P.FM.05.21 Distinguish between contact forces and non-contact forces.</p> <p>P.FM.05.22 Demonstrate contact and non-contact forces to change the motion of an object.</p> <p>P.FM.M.3 Force- Forces have a magnitude and direction. Forces can be added. The net force on an object is the sum of all of the forces acting on the object. The speed and/or direction of motion of an object changes when a non-zero net force is applied to it. A balanced force on an object does not change the motion of the object (the object either remains at rest or continues to move at a constant speed in a straight line).</p>			
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Force and Motion/Simple Machines	<p>P.FM.05.31 Describe what happens when two forces act on an object in the same or opposing directions.</p> <p>P.FM.05.32 Describe how constant motion is the result of balanced (zero net)</p> <p>P.FM.05.33 Describe how changes in the motion of objects are caused by a non-zero net (unbalanced) force.</p> <p>P.FM.05.34 Relate the size of change in motion to the strength of unbalanced forces and the mass of the object.</p> <p>P.FM.E.2 Gravity- Earth pulls down on all objects with a force called gravity. With very few exceptions, objects fall to the ground no matter where the object is on the Earth.</p> <p>P.FM.03.22 Identify the force that pulls objects towards the Earth.</p> <p>P.FM.03.36 Relate a change in motion of an object to the force that caused the change of motion.</p> <p>P.FM.03.37 Demonstrate how the change in motion of an object is related to the strength of the force acting upon the object and to the mass of the object.</p> <p>P.FM.03.38 Demonstrate when an object does not move in response to a force, it is because another force is acting on it.</p>			
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	<p>P.PM.E.1 Physical Properties- All objects and substances have physical properties that can be measured.</p> <p>P.PM.04.16 Measure the weight (spring scale) and mass (balances in grams or kilograms) of objects.</p>			
<p>Nutrition and Digestion</p>	<p>S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.</p> <p>S.IP.04.12 Generate questions based on observations.</p> <p>S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.</p> <p>S.IA.04.12 Share ideas about science through purposeful conversation in collaborative groups.</p>	<ul style="list-style-type: none"> • Made in the image of God • God created us perfectly • The design of the human body • Respecting life/our body 	<ul style="list-style-type: none"> • Food pyramid • Written story demonstrating knowledge of eating habits that promote healthy living (includes nutrients and health benefits of specific food groups) • Diagram labeling and telling the story of digestion for a slice of pizza • Fetal pig dissection with focus on digestive system 	<ul style="list-style-type: none"> • Fetal pigs, scissors, dissecting trays, gloves • Arianna’s Nutrition Expedition • MI Model Health • PATCH program

<p>Nutrition and Digestion</p>	<p>S.RS.E.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.</p> <p>S.RS.04.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.04.14 Use data/samples as evidence to separate fact from opinion.</p> <p>S.RS.04.15 Use evidence when communicating scientific ideas.</p> <p>S.RS.04.19 Describe how people have contributed to science throughout history and across cultures.</p> <p>1.1 Describe the food groups, including recommended portions to eat from each group.</p> <p>1.2 Analyze the relationship of physical activity, rest, and sleep.</p> <p>1.3 Explain why some food groups have a greater number of recommended portions than other food groups.</p>			
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<p>Nutrition and Digestion</p>	<p>1.7 Describe strategies people use to consume the recommended portions of food to meet their individual nutrient needs.</p> <p>1.9 Develop a one-day plan for eating the recommended portions of food from each food group. MI Model Phase IV-1 Students will label 5 food groups on the pyramid, explain the recommended number of servings for each group, recognize appropriate serving sizes and identify/describe at least one health benefit for each food group. MI model Phase IV-7 Describe the structure and function of the digestive system MI model Phase IV-8 Break the digestive system into a series of tubes and glands. Outline the function of the organs of the digestive tract.</p>			
<p>Vertebrates and Invertebrates</p>	<p>S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.</p> <p>S.IP.04.11 Make purposeful observation of the natural world using the appropriate senses.</p>	<ul style="list-style-type: none"> • Genesis – God created animals • Diversity of life • God’s master plan 	<ul style="list-style-type: none"> • Animal Pages: research an animal and create a page for a book about animals – Performance assessment • Quiz • Potter Park/Big Zoo Lesson? 	<ul style="list-style-type: none"> • MacMillan McGraw-Hill Science; Life Science Unit B • UnitedStreaming

<p>Vertebrates and Invertebrates</p>	<p>S.IP.04.12 Generate questions based on observations.</p> <p>S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.</p> <p>S.IA.04.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.04.14 Develop research strategies and skills for information gathering and problem solving.</p> <p>S.RS.E.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.</p> <p>S.RS.04.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.04.18 Describe the effect humans and other organisms have on the balance of the natural world.</p>			
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<p>Vertebrates and Invertebrates</p>	<p>S.RS.04.19 Describe how people have contributed to science throughout history and across cultures.</p> <p>L.OL.E.1 Life Requirements- Organisms have basic needs. Animals and plants need air, water, and food. Plants also require light. Plants and animals use food as a source of energy and as a source of building material for growth and repair.</p> <p>L.OL.04.16 Determine that animals require air, water, and a source of energy and building material for growth and repair.</p> <p>L.EC.E.1 Interactions- Organisms interact in various ways including providing food and shelter to one another. Some interactions are helpful; others are harmful to the organism and other organisms.</p> <p>L.EC.04.11 Identify organisms as part of a food chain or food web.</p>			
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<p>Vertebrates and Invertebrates</p>	<p>L.OL.E.4 Classification- Organisms can be classified on the basis of observable characteristics.</p> <p>L.OL.03.42 Classify animals on the basis of observable physical characteristics (backbone, body coverings, limbs).</p> <p>L.EV.E.1 Environmental Adaptation- Different kinds of organisms have characteristics that help them to live in different environments.</p> <p>L.EV.03.12 Relate characteristics and functions of observable body parts to the ability of animals to live in their environment (sharp teeth, claws, color, body coverings).</p> <p>L.OL.M.4 Animal Systems- Multicellular organisms may have specialized systems that perform functions which serve the needs of the organism.</p> <p>L.OL.05.41 Identify the general purpose of selected animal systems (digestive, circulatory, respiratory, skeletal, muscular, nervous, excretory, and reproductive).</p>			
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<p>Vertebrates and Invertebrates</p>	<p>L.OL.05.42 Explain how animal systems (digestive, circulatory, respiratory, skeletal, muscular, nervous, excretory, and reproductive) work together to perform selected activities.</p> <p>L.OL.E.3 Structures and Functions- Organisms have different structures that serve different functions in growth, survival, and reproduction.</p> <p>L.OL.03.32 Identify and compare structures in animals used for controlling body temperature, support, movement, food-getting, and protection (for example: fur, wings, teeth, scales).</p> <p>L.EV.M.1 Species Adaptation and Survival- Species with certain traits are more likely than others to survive and have offspring in particular environments. When an environment changes, the advantage or disadvantage of the species' characteristics can change. Extinction of a species occurs when the environment changes and the characteristics of a species are insufficient to allow survival.</p>			
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Vertebrates and Invertebrates	<p>L.EV.05.11 Explain how behavioral characteristics (adaptation, instinct, learning, habit) of animals help them to survive in their environment.</p> <p>L.EV.05.12 Describe the physical characteristics (traits) of organisms that help them survive in their environment.</p> <p>L.EV.E.2 Survival-Individuals of the same kind differ in their characteristics, and sometimes the differences give individuals an advantage in surviving and reproducing.</p> <p>L.EV.04.21 Identify individual differences (color, leg length, size, wing size, leaf shape) in organisms of the same kind. *</p> <p>L.EV.04.22 Identify how variations in physical characteristics of individual organisms give them an advantage for survival and reproduction.</p>			
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