

Third Grade Science Curriculum

Grade Level Goal

In third grade, the students will explore a variety of topics in life, physical, earth and space science. The use of the scientific method, hands-on experiments and problem solving will engage and foster students' curiosity.

Unit Title	Force
Big Ideas	<ul style="list-style-type: none"> • Gravity is the force that pulls objects toward the Earth. • Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations. • Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning.
Essential Questions	<ul style="list-style-type: none"> • How does science help us answer questions about the world around us? • What does it mean to question? • What is gravity? • Why do scientists conduct investigations?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW use a ruler or yardstick to measure the lengths of objects in feet and inches. ✓ Given a meter stick or metric tape measure, TLW measure lengths of objects in meters and centimeters. ✓ TLW explain the relationships between the sizes of standard units for length. ✓ TLW develop strategies for estimating compared to the results of the measurement and decide if an estimate is a “good” estimate. ✓ Using a balance and metric mass set, TLW measure the mass of objects in grams. ✓ Using a balance and a metric mass set, TLW measure the mass of objects in kilograms and grams. ✓ Using a balance or scale, TLW measure the weights of objects in pounds and ounces. ✓ TLW explain the relationships between the sizes of standard units for weight. ✓ Given a container, TLW find its capacity in liters and milliliters. ✓ Given a container, TLW find its capacity in gallons, quarts, pints, and cups. ✓ TLW explain the relationships between the sizes of standard units for capacity. ✓ TLW explore measuring the same object with different units of measure and discuss the appropriateness of the unit for measuring the object. ✓ TLW solve problems involving addition and subtraction of like measures. ✓ TLW measure the temperature in the Celsius scale.
GLCE	S.IP.03.14; S.IP.03.15; S.IP.03.12; S.IP.03.14; S.IP.03.15; S.IP.03.12; S.IP.03.15; S.IA.03.13; S.IP.03.12; S.IP.03.13; S.IP.03.14; S.IP.03.15; S.IP.03.12; S.IP.03.14; S.IP.03.15; S.IP. 03.14; S.IP.03.15; S.IP.03.12; S.IP.03.14; S.IP.03.15; S.IP.03.12; S.IP.03.15; S.IP.03.12; S.IP.03.15; S.IP.03.12; S.IP.03.14; S.IP.03.15; S.IP.03.12; S.IP.03.14; S.IP.03.15; S.IP.03.12; S.IP.03.15; S.IA.03.13; S.IP.03.12; S.IP.03.15;
Catholic Social Teachings	Call to Family, Community, and Participation

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Unit Title	Force and Motion
Big Ideas	<ul style="list-style-type: none"> • A force is a push or pull. • Pushes or pulls can change the speed or direction of moving objects. • The shape, size, and weight of an object can affect its motion.
Essential Questions	<ul style="list-style-type: none"> • How do simple machines affect the movement of an object to make work easier? • What affects the movement of an object? • What is a force?
Skills/Concepts	<ul style="list-style-type: none"> • TLW demonstrate scientific processes related to observations of the natural world by investigating gravity. • TLW observe and identify real world physical activities that demonstrate motions caused by a push or pull and the effects of gravity and friction. • TLW relate a change in motion of an object to the force that caused the change of motion. • TLW investigate the six simple machines and describe the force(s) that make them operate. • TLW brainstorm machines/gadgets used in daily life, and investigate their relationship to types of simple machines. • TLW create a labeled diagram or collaboratively build an invention using two or more types of simple machines.
GLCE	P.FM.03.22; P.FM.03.35; P.FM.03.41; S.IA.03.12; S.IA.03.13; S.IP.03.11; P.FM.03.36; P.FM.03.37; P.FM.03.38; P.FM.03.42; P.FM.03.43; S.IA.03.12; S.IA.03.13; S.IP.03.11; S.IP.03.12; S.IP.03.13; S.IP.03.14; S.IP.03.15; S.RS.03.11; S.RS.03.16; S.RS.03.17; S.RS.03.19; P.FM.03.36; P.FM.03.37; P.FM.03.38; P.FM.03.43; S.IA.03.15; S.IP.03.14; S.IP.03.15; S.IP.03.16; S.IA.03.13;

Unit Title	Sound and Light
Big Ideas	<ul style="list-style-type: none"> • Light and sound are forms of energy. • Light enables us to see. • Light travels in a straight line and interacts in different ways with matter. • Sound waves enable us to hear. • Sound waves travel in all directions and have different properties. • Vibrating objects produce sound.
Essential Questions	<ul style="list-style-type: none"> • How do sound and light interact with objects? • How do sound and light travel? • How do we perceive light and sound? • What are sound and light?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW identify light and sound as forms of energy. ✓ TLW investigate properties of light. ✓ TLW demonstrate how a shadow is made. ✓ TLW collaboratively investigate the path of light from its source to an object to the eyes. ✓ TLW investigate properties of sound through experimentation with a variety of sound sources.
GLCE	P.EN.03.11; S.IA.03.12; S.IP.03.11; S.IP.03.12; P.EN.03.21; P.EN.03.22; P.PM.03.51; S.IA.03.12; S.IA.03.13; S.IP.03.11; S.IP.03.12; S.IP.03.13; P.EN.03.21; S.IA.03.13; S.IP.03.11; P.PM.03.52; S.IA.03.13; S.IP.03.11; S.IP.03.13; P.EN.03.31; P.EN.03.32; S.IA.03.12; S.IA.03.13; S.IP.03.11; S.IP.03.12; S.IP.03.13;
Catholic Social Teachings	Care of God's Creation (light and sound)

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Unit Title	Plants
Big Ideas	<ul style="list-style-type: none"> Organisms can be classified on the basis of observable characteristics. Plants have different structures that serve different functions in growth, survival, and reproduction.
Essential Questions	<ul style="list-style-type: none"> How can plants be classified? What are the functions of flowers, stems, roots, and leaves in plants?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW collaboratively review what organisms need for growth and survival. ✓ TLW describe the function of parts of plants. ✓ TLW classify plants on the basis of observable physical characteristics.
GLCE	L.OL.03.31; S.IA.03.12; S.IA.03.13; S.IP.03.11; S.RS.03.11; S.RS.03.15; S.RS.03.18; L.OL.03.41
Catholic Social Teachings	Care of God's Creation

Unit Title	Animals
Big Ideas	<ul style="list-style-type: none"> Animals can be classified on the basis of observable characteristics. Animals have different structures that serve different functions in growth, survival, and reproduction.
Essential Questions	<ul style="list-style-type: none"> How can animals be classified? What are the functions of the structures of animals?
Skills/Concepts	<ul style="list-style-type: none"> TLW collaboratively review what animals need for growth and survival. TLW identify and compare animal structures used for controlling body temperature, support, movement, food-getting, and protection. TLW collaboratively describe, compare, and classify mammals, birds, reptiles, amphibians, and fish, based on their observable. TLW collaboratively classify vertebrates and invertebrates into groups by their observable physical characteristics and make comparisons between common vertebrates and common invertebrates.
GLCE	L.OL.03.32; S.IA.03.12; S.IA.03.13; S.IA.03.14; S.IA.03.15; L.OL.03.32; L.OL.03.42; S.IA.03.11; S.IA.03.12; S.IA.03.13; S.IA.03.15; S.IP.03.12; S.IP.03.13; S.IP.03.16; S.RS.03.15; L.OL.03.42; S.IA.03.11; S.IA.03.12; S.IA.03.13; S.IA.03.15; S.IP.03.11; S.IP.03.12; S.IP.03.13; S.IP.03.16; S.RS.03.15

Unit Title	Adaptation
Big Ideas	Different kinds of organisms have characteristics that help them to live in different environments.
Essential Questions	How do plants and animals adapt their environment?
Skills/Concepts	<ul style="list-style-type: none"> TLW collaboratively identify major characteristics of teacher selected biomes and locate on a globe or world map. TLW relate characteristics and functions of selected organisms and observable parts that allow them to live in their environment. TLW create a nonverbal graphic representation of a habitat.
GLCE	S.IA.03.11; S.IA.03.12; S.IA.03.14; S.IP.03.11; S.IP.03.12; S.IP.03.16; S.RS.03.11; S.RS.03.15; S.RS.03.18; L.EV.03.11; L.EV.03.12;
Catholic Social Teachings	<ul style="list-style-type: none"> Care of God's Creation (The learner will recognize and value the unique characteristics) Diversity

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Unit Title	Earth Materials
Big Ideas	<ul style="list-style-type: none"> • Earth materials include rocks, minerals, soil, water, and air. • Rocks are made up of minerals. • The Earth is made of many minerals that are useful to people. • There are three different types of rocks – sedimentary, igneous and metaphoric rocks. • Types of earth materials include minerals, rocks, clay, boulders, salt, gravel, sand, and soil.
Essential Questions	<ul style="list-style-type: none"> • How do people use/change Earth materials? • What are some useful Earth materials?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW recognize and describe different types of earth materials and recognize that rocks are made up of minerals. ✓ TLW identify usable, non-renewable Earth materials. ✓ TLW describe how materials taken from the Earth can be used as fuels for heating and transportation.
GLCE	E>AW.03.13; E.SE.03.14; S.IA.03.11; S.IA.03.12; S.IA.03.13; S.IA.03.14; S.IA.03.15; S.RS.03.11; S.RS.03.15; S.IA.03.11; S.IA.03.12; S.IP.03.11; S.IP.03.12; S.RS.03.18; E.SE.03.31; E.SE.03.32; S.IA.03.12; S.IP.03.11; S.IP.03.12; S.RS.03.15; S.RS.03.18;
Catholic Social Teachings	Care for God’s Creation (We are called to stewardship by respecting the Earth’s resources.)

Unit Title	Natural Resources
Big Ideas	<ul style="list-style-type: none"> • Human Change the environment in ways that are helpful and also in ways that are harmful for themselves and other organisms. • Humans can extend the use of limited supply of many natural resources by recycling, reuse, and renewal. • Humans depend on their natural and constructed environment.
Essential Questions	<ul style="list-style-type: none"> • How can people extend the use of limited natural resources and why should they do so? • In what ways do people affect their environment?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW identify natural resources, classify resources as renewable and non-renewable, and discuss how the supply of natural resources is limited. ✓ TLW describe ways humans are dependent on the natural environment and the constructed environment. ✓ TLW determine harmful effects of the use of earth materials on the environment. ✓ TLW determine helpful effects of the use of earth materials on the environment and describe ways humans protect, extend, and restore resources.
GLCE	E.ES.03.41; E.ES.03.42; S.IA.03.11; S.IP.03.11; S.IP.03.12; S.IP.03.16; E.ES.03.51; S.IP.03.11; S.IP.03.12; S.RS.03.15; S.RS.03.17; S.IA.03.11; S.IA.03.12; S.IA.03.13; E.ES.03.43; S.IA.03.11; S.IA.03.12; S.IA.03.13; E.ES.03.43; E.ES.03.44; E.ES.03.52; S.IA.03.11; S.IA.03.12; S.IA.03.13
Catholic Social Teachings	Care of God’s Creation

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Unit Title	Water Cycle
Big Ideas	<ul style="list-style-type: none"> • A watershed is the land area drained by a stream system. • The Sun is the source of energy for the water cycle and causes multiple changes of state as water moves through the water cycle. • Water circulates through the four Earth systems in a process known as the water cycle. • Water flows through the various components of a watershed including surface features and groundwater.
Essential Questions	<ul style="list-style-type: none"> • How does water change forms in the water cycle? • How does water move from place to place in the water cycle? • What are the components and processes of the water cycle? • What are the components of a watershed and how does a watershed relate to the water cycle? • What is the source of energy for the water cycle?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW identify the stages of the water cycle. ✓ TLW demonstrate the relationship between the warming by the Sun of the Earth and the water cycle as it applies to the atmosphere ✓ TLW analyze the flow of water between the components of a watershed, including surface features (lakes, streams, rivers, and wetlands) and groundwater.
GLCE	E.ES.07.11; E.ES.07.81; E.ES.07.82; S.IA.07.11;
Catholic Social Teachings	Care of God's Creation (The learner will act responsibly while using resources wisely.)

Unit Title	Surface Changes
Big Ideas	<ul style="list-style-type: none"> • Some forces (volcanoes and earthquakes) build up the Earth's surface (constructive) and other forces (weathering and erosion) tear down or wear away the Earth's surface (destructive). • The surface of Earth changes. Some changes are due to slow processes, such as erosion and weathering, and some changes are due to rapid processes, such as landslides, volcanic eruptions, earthquakes, and weather phenomena (i.e. hurricanes, tornadoes, tsunamis, floods, lightning strikes that cause forest fires.)
Essential Questions	<ul style="list-style-type: none"> • How does Earth's surface change slowly over time? • How does the Earth's surface change rapidly over time?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW locate evidence of weathering and erosion around the school and neighborhood and describe the causes. ✓ TLW conduct investigations to explore the effects of weathering and erosion and record observations. ✓ TLW demonstrate the formation of a volcano and explain how it changes the Earth's surface. ✓ TLW simulate earthquake movements of the Earth's crust and the effects of earthquakes on buildings of varying strength. ✓ TLW describe how landslides cause changes in Earth's surface. ✓ Using informational media, TLW research erosion, volcanoes, earthquakes, tsunamis, floods, hurricanes, tornadoes, and other phenomenon to describe their effects on the on the Earth's surface, and report the findings in a written or oral report.
GLCE	E.SE.03.22; S.IA.03.12; S.IA.03.14; S.IP.03.11; S.IP.03.12; S.IP.03.13; S.RS.03.11; S.RS.03.14; S.RS.03.15; E.SE.03.22; S.IA.03.12; S.IA.03.13; S.IA.03.14; S.IP.03.11; S.IP.03.12; S.IP.-3.13; S.RS.03.11; S.IA.03.14; S.IP.03.11; S.IP.03.12; S.IP.03.13; S.RS.03.11; E.SE.03.22; S.IA.03.12; S.IA.03.13; E.SE.03.22; S.IA.03.12; S.IP.03.11; S.IP.03.12; S.RS.03.18; S.IP.03.16; S.RS.03.15; S.RS.03.16; E.SE.03.22; S.IA.03.11; S.IA.03.12; S.IA.03.13; S.IA.03.14; S.IP.03.11; S.IP.03.12
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