

First Grade Science Curriculum

Grade Level Goal

In the first grade, students will develop a curiosity and understanding of God's creation. They will explore topics in earth, life, physical and space sciences while developing their science, math and reading skills. A knowledge base supported by independent thinking skills will be established.

Unit Title	Tools of the Scientist
Big Ideas	<ul style="list-style-type: none"> • 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 and observation.
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? • Why do scientists conduct investigations?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW make the connection that people are special because we are God's creation. ✓ TLW compare the lengths of two and then three given objects by comparing actual objects. ✓ Given an object to be measured (book, table, room) and a nonstandard unit of measurement (paper clip, pencil, book), TLW demonstrate how to determine the length of the given object to the nearest whole unit. ✓ TLW compare lengths of given objects by using their nonstandard measurement. ✓ TLW solve simple one-step word problems involving addition and subtraction of length. ✓ Given two objects, TLW predict which item is heavier/lighter or if the objects are of equal weight. ✓ Given a balance and the two objects from a previous lesson, TLW confirm which item is heavier/lighter or if the objects are of equal weight. ✓ TLW measure the approximate weight of objects by using a balance with non-standard units. ✓ Given two dissimilar containers, TLW determine which has the greater capacity. ✓ Given a container, TLW estimate and find the capacity using a non-standard unit. ✓ TLW demonstrate scientific processes related to observations of the natural world.
GLCE	M.UN.01.02; S.IP.01.11; M.UN.01.01; S.IP.01.11; S.IP.01.14; S.IP.01.15; S.IP.01.16; M.UN.01.02; S.IP.01.11; S.IP.01.14; S.IP.01.15; M.PS.01.08; M.UN.01.02; S.IP.01.11; S.IP.01.13; S.IP.01.14; S.IP.01.15; M.UN.01.01.01; M.UN.01.01; M.UN.01.02; S.IA.01.13; S.IP.01.11; M.UN.01.01; S.IP.01.11; S.IP.01.14; S.IP.01.15; M.UN.01.02; S.IP.01.11; S.IP.01.14; S.IP.01.15; S.IA.01.12; S.IA.01.12; S.IA.01.14; S.IP.01.11; S.IP.01.12; S.IP.01.16; S.RS.01.11; S.RS.01.12
Catholic Social Teachings	<p>Dignity of the Human Person – The learner will make the connection that we are special because we are God's creations. This means that we must treat others with great respect and fairness because God made them too. It is not important if you are tall or small, happy or sad, or if you have many toys or no toys. We are special because of God's love and we are all equal in God's eyes.</p>

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Unit Title	Tools of the Scientist
Big Ideas	<ul style="list-style-type: none"> • Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations. • Inquiry involves generating question, conducting investigations, and developing solutions to problems through reasoning and observation. • The scientific process involves continuing investigations.
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? • Why do scientists conduct investigations?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW create a ruler of nonstandard units and use it to measure common objects found in the classroom. ✓ TLW create a ruler using foot-long units and use it to measure common objects found in the classroom in feet. ✓ TLW use a ruler to measure the lengths of objects in inches. ✓ TLW create a measuring tape marked in yards to measure objects of appropriate lengths. ✓ Given a cm ruler or tape measure, TLW measure the length of an object in centimeters. ✓ TLW create or use a commercially-made tape measure marked in meters to measure objects of appropriate lengths. ✓ TLW explore measuring the same object with different units of measure and discuss the appropriateness of the unit for measuring the object. ✓ TLW add and subtract lengths of objects using the same standard unit of measure to solve problems. ✓ TLW demonstrate scientific processes related to observations of the natural world. ✓ TLW compare lengths of objects by using standard units and determine the difference. ✓ Given a balance and two objects, TLW determine which item is heavier/lighter or if the objects are of equal weight. ✓ TLW measure the approximate weight of objects by using a balance with non-standard units. ✓ Given two dissimilar containers, TLW determine which has the greater capacity. ✓ TLW measure the volume of liquids using common measuring tools.
GLCE	M.UN.02.01; S.IP.02.14; S.IP.02.15; M.UN.02.01; S.IP.02.14; S.IP.02.15; M.UN.02.01; S.IP.02.14; M.UN.02.01; S.IP.02.14; M.UN.02.01; P.PM.02.13; S.IP.02.14; M.UN.02.01; P.PM.02.13; S.IP.02.14; P.PM.02.13; S.IP.02.14; S.IP.02.15; M.PS.02.02; M.PS.02.02; M.PS.02.10; N.ME.02.22; P.PM.02.13; S.IA.02.12; S.IP.02.12; S.IP.02.13; S.IP.02.14; S.IP.02.15; S.IP.02.16; S.RS.02.11; S.RS.02.15; S.IA.02.13; S.IA.02.14; S.IP.02.11; M.PS.02.02; P.PM.02.15; S.IA.02.13; S.IP.02.14; S.IP.02.15; S.RS.02.13; S.RS.02.16; S.IP.02.14; S.IP.02.15; S.RS.02.13; S.RS.02.16; S.IP.02.14; S.IP.02.15; P.PM.02.14
Catholic Social Teachings	<ul style="list-style-type: none"> • The Dignity and Rights of Workers • The Dignity of the Human Person (We can all have different hypotheses.) • We are called to Stewardship (Using scientific knowledge to help take care of God’s creation.)

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Unit Title	Properties of Matter
Big Ideas	<ul style="list-style-type: none"> • A solid keeps its own shape, while a liquid takes the shape of its container. • All objects and substances have physical properties that can be measured. • Water exists as a solid (ice) and as a liquid (water).
Essential Questions	<ul style="list-style-type: none"> • What are the states of water? • What properties do common objects have? • Why does a liquid take the shape of its container? • Why does a solid keep its own shape?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW collaboratively determine the meaning of observable attributes through role-play. ✓ TLW investigate various properties of common objects. ✓ Given teacher-selected objects, TLW collaboratively identify properties of the objects which make them useful in everyday life.
GLCE	P.PM.01.11; P.PM.01.11; P.PM.01.21; P.PM.01.22; P.PM.01.31; P.PM.01.32;
Catholic Social Teachings	Dignity of the Human Person – The learner will make the connection that we are special because we are God’s creations. This means that we must treat others with great respect and fairness because God made them too. It is not important if you are tall or small, happy or sad, or if you have many toys or no toys. We are special because of God’s love and we are all equal in God’s eyes.

Unit Title	Heredity
Big Ideas	<ul style="list-style-type: none"> • Many characteristics are passed from parent to young. • Young animals may share many characteristics of their parents.
Essential Questions	<ul style="list-style-type: none"> • How can you tell which kind of adult animals are the parents of a young animal?
Skills/Concepts	<ul style="list-style-type: none"> • TLW classify young animals based on characteristics that are passed on from parents. • TLW graph characteristics of young animals that are similar to adult characteristics.
GLCE	L.HE.01.12; L.HE.01.11;
Catholic Social Teachings	We are called to stewardship – The earth and all life on it is God’s creation. We are called to take care of it because it is a holy gift from God and the only place we can live. When we make bad or thoughtless use of the earth’s resources, many people suffer. When we make poor choices about how we treat other living things we cause life to be less than God intends. Making wise choices about the care of God’s creation is called good stewardship.

Unit Title	Needs and Life Cycles of Animals
Big Ideas	<ul style="list-style-type: none"> • Animals have basic needs, including food, water, air, and a place to live. • Different animals have different life cycles. • Earth materials such as air and water help animals grow to stay alive.
Essential Questions	<ul style="list-style-type: none"> • What are the basic needs to animals? • What are the stages in the life cycles of insects, birds, fish, amphibians, reptiles, and mammals? • What Earth materials do animals need to grow and stay alive?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW identify the needs of animals and describe how Earth materials contribute to the growth of animal life. ✓ TLW compare/contrast the two different life cycles of insects. ✓ TLW sequence, describe, and cooperatively chart the basic stages in the life cycle of insects, birds, fish, amphibians, reptiles, and

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	mammals and draw conclusions.
GLCE	E.ES.01.12; E.SE.01.12; L.OL.01.13; L.OL.01.21; L.OL.01.21;
Catholic Social Teachings	An option for the Poor and Vulnerable – Every person needs food, water, work, housing, school, and medical care. Our Church teaches that these brothers and sisters must be treated with extra respect and extra care and given what they need. Those who are not poor must share what they have with others.

Unit Title	Weather
Big Ideas	<ul style="list-style-type: none"> • In Michigan, the seasons are summer, autumn, winter, and spring. • Severe weather can be dangerous and precautions must be taken to stay safe. • The Sun warms the land, air, and water, affecting the weather. • Weather changes daily and seasonally. • Weather is described by determining temperature cloud cover precipitation and wind.
Essential Questions	<ul style="list-style-type: none"> • How do people stay safe during severe weather? • How does weather change? • What causes our weather?
Skills/Concepts	<ul style="list-style-type: none"> ✓ TLW observe, record, graph and compare daily changes in the weather, relating weather conditions to seasonal changes. ✓ TLW describe typical weather conditions for each seasons as related to Michigan’s climate. ✓ TLW collaboratively discuss and describe appropriate clothing and accessories to use in various weather conditions and justify the selection. ✓ TLW describe severe weather events and create an action plan for safely surviving weather conditions at school and at home. ✓ TLW identify the Sun as the most important source of heat which warms the Earth.
GLCE	E,ES,01.21; E.ES.01.22; E.ES.01.31; E.ES.01.32; E.ES.01.22; E.ES.01.23; E.ES.01.24 ; E.ES.01.11;
Catholic Social Teachings	We are called to Stewardship – God made the Earth and Sky. God tells us we must take good care of them. It is an important job.

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