Michigan District Lutheran School Curriculum *SCOPE & SEQUENCE*

Grade Level: 4	**Curricular Area: Science**			
Unit 1: **Science Processes** • **Inquiry and Reflection**	**Unit 2:** **Physical** • **Motion of Objects** • **Energy** • **Properties of Matter** • **Changes in Matter**	**Unit 3:** **Life** • **Organization of Living Things** • **Heredity** • **Evolution** • **Ecosystems**	**Unit 4:** **Earth** • **Solid Earth** • **Earth Systems** • **Fluid Earth** • **Earth in Space and Time**	**Unit 5:** **Health**

Michigan District Lutheran School Curriculum *OUTCOMES*

Curricular Area: Science (4th grade)

Unit 1: Science Processes

Outcomes:
R II.1 All students will show how science and technology affect our society;
LO III.2 All students will use classification systems to describe groups of living things;
LO III.2 All students will compare and contrast differences in the life cycles of living things;
LO III.2 All students will investigate and explain how living things obtain and use energy;
LO III.2 All students will analyze how parts of living things are adapted to carry out specific functions;

Grade Level Content Expectations (GLCEs)	**Michigan Benchmarks**	**Teaching the Faith Activities (I.F.)**
S.IR.04.01 Make purposeful observation of the natural world using the five senses. S.IR.04.02 Generate questions based on observations. S.IR.04.03 Plan and conduct simple and fair investigations. S.IR.04.04 Manipulate simple tools that aid observation and data collection. S.IR.04.05 Make accurate measurements with appropriate units for the measurement tool. S.IR.04.06 Construct simple charts and graphs from data and observations. S.IR.04.07 Summarize information from data tables and graphs to answer scientific questions. S.IR.04.08 Communicate and present findings of observations and investigations.	S.IR.04.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation. Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.	

S.IR.04.09 Develop research strategies and skills for information gathering and problem solving. S.IR.04.10 Compare and contrast sets of data from multiple trials of a science investigation, to explain reasons for differences.		

Outcomes:
R II.1 All students will show how science and technology affect our society;
LO III.2 All students will use classification systems to describe groups of living things;
LO III.2 All students will compare and contrast differences in the life cycles of living things;
LO III.2 All students will investigate and explain how living things obtain and use energy;
LO III.2 All students will analyze how parts of living things are adapted to carry out specific functions;

Grade Level Content Expectations (GLCEs)	**Michigan Benchmarks**	**Teaching the Faith Activities (I.F.)**
S.IR.04.11 Use data/samples as evidence to separate fact from opinion. S.IR.04.12 Identify the need for evidence in making scientific decisions. S.IR.04.13 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities. S.IR.04.14 Identify technology used in everyday life. S.IR.04.15 Identify current problems that may be solved through the use of technology. S.IR.04.16 Describe the effect humans and other organisms have on the balance of the natural world. S.IR.04.17 Describe how people have contributed to science throughout history and across cultures.	S.IR.04.2 Reflecting knowledge is the application of scientific knowledge to new and different situations. Reflecting knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history.	

Michigan District Lutheran School Curriculum *TEACHER ACCOUNTABILITY RECORD*

Unit Name: Unit 1 Science Processes **Teacher Name: _____** **Grade Level: 4**	**Curricular Area: Science** **School Year:**				
Michigan Standards, Benchmark, or *GLCE* *(Italics indicate the one used.)*	**Dates Taught (month/day/initials):**				
S.IR.04.01 Make purposeful observation of the natural world using the five senses.					
S.IR.04.02 Generate questions based on observations.					
S.IR.04.03 Plan and conduct simple and fair investigations.					
S.IR.04.04 Manipulate simple tools that aid observation and data collection.					
S.IR.04.05 Make accurate measurements with appropriate units for the measurement tool.					
S.IR.04.06 Construct simple charts and graphs from data and observations.					
S.IR.04.07 Summarize information from data tables and graphs to answer scientific questions.					
S.IR.04.08 Communicate and present findings of observations and investigations.					
S.IR.04.09 Develop research strategies and skills for information gathering and problem solving.					
S.IR.04.10 Compare and contrast sets of data from multiple trials of a science investigation, to explain reasons for differences.					
S.IR.04.11 Use data/samples as evidence to separate fact from opinion.					
S.IR.04.12 Identify the need for evidence in making scientific decisions.					
S.IR.04.13 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.					
S.IR.04.14 Identify technology used in everyday life.					
S.IR.04.15 Identify current problems that may be solved through the use of technology.					

S.IR.04.16 Describe the effect humans and other organisms have on the balance of the natural world.					
S.IR.04.17 Describe how people have contributed to science throughout history and across cultures.					

Unit 2: Physical

Outcomes:
PCM IV.2 All students will investigate, describe and analyze ways in which matter changes;
PME IV.1 All students will identify and describe forms of energy;
PWV IV.4 All students will describe sounds and sound waves;
PMO IV.3 All students will describe how things around us move, explain why things move as they do, and demonstrate and explain how we control the motions of objects;

Grade Level Content Expectations (GLCEs)	**Michigan Benchmarks**	**Teaching the Faith Activities (I.F.)**
P.PM.04.18 Identify objects that conduct heat and electricity. P.CM.04.30 Explain how matter can change from one state to another by heating and cooling.	P.PM.04.2 Objects vary to the extent they absorb and reflect light energy and conduct heat and electricity. P.CM.04.1 Matter can be changed from one state to another and then back again. This may be caused by heating and cooling.	

Michigan District Lutheran School Curriculum *TEACHER ACCOUNTABILITY RECORD*

Unit Name: Unit 2 Physical **Teacher Name: _____** **Grade Level: 4**	**Curricular Area: Science** **School Year:**				
Michigan Standards, Benchmark, or *GLCE* *(Italics indicate the one used.)*	**Dates Taught (month/day/initials):**				
P.PM.04.18 Identify objects that conduct heat and electricity.					
P.CM.04.30 Explain how matter can change from one state to another by heating and cooling.					

Unit 3: Life
Outcomes:
LO III.2 All students will use classification systems to describe groups of living things;
LO III.2 All students will compare and contrast differences in the life cycles of living things;
LO III.2 All students will investigate and explain how living things obtain and use energy;
LLO III.2 All students will analyze how parts of living things are adapted to carry out specific functions;
LH III.3 All students will investigate and explain how characteristics of living things are passed on through generations;
LE III.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species;
LE III.4 All students will compare ways that living organisms are adapted (suited)to survive and reproduce in their environments and explain how species change through time;
LEC III.5 All students will explain how energy is distributed to living things in an ecosystem;
LEC III.5 All students will explain how parts of an ecosystem are related and how they interact;
LEC III.5 All students will investigate and explain how communities of living things change over a period of time;

Grade Level Content Expectations (GLCEs)	**Michigan Benchmarks**	**Teaching the Faith Activities (I.F.)**
L.OL.04.31 Compare the needs of familiar plants and animals. L.EV.04.32 Illustrate characteristics and functions of observable body parts in a variety of animals that allow them to live in their environment. L.EV.04.33 Explain how physical characteristics (traits) or adaptations of animals (sharp teeth or claws for catching and killing prey, or color for camouflage) help them to survive in their environments. L.EC.04.34 Identify familiar organisms as part of a food chain or food web. L.EC.04.35 Explain how environmental changes can produce a change in the food web.	L.OL.04.1 Animals need air, water, and a source of energy (food). Plants also require air, water, and a source of energy (light to make food). Plants and animals break down food to produce building material for growth and repair. L.EV.04.1 Different kinds of plants and animals have characteristics that help them to live in different environments. L.EV.04.2 Individuals of the same kind differ in their characteristics, and sometimes the differences give individuals an advantage in surviving and reproducing. L.EC.04.1 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. L.EC.04.2 When the environment changes, some plants and animals survive to reproduce; others die or move to new locations.	• Draw pictures to illustrate your study. Press the finished pictures between layers of clear Con-Tac paper to make place mats. Include the words, "God's Plan for a Healthy Environment." • Draw pictures to illustrate your study. Press the finished pictures between layers of clear Con-Tac paper to make place mats. Include the words, "God's Plan for a Healthy Environment." How does this illustrate the wonders of God's creation? What are some ways humans affect the equilibrium God developed? Discuss in connection with sin, grace, and living sanctified life. • How does this illustrate the wonders of God's creation? What are some ways humans affect the equilibrium God developed? Discuss in connection with sin, grace, and living a sanctified life. • Add "God" to your food web or chain. Show Him as the ultimate Source for all

		that keeps the food web or chain working. • Relate this to objective 14. Add details to show ways God cares for His creation.

Michigan District Lutheran School Curriculum *TEACHER ACCOUNTABILITY RECORD*

Unit Name: Unit 3 Life **Teacher Name: _____** **Grade Level: 4**	**Curricular Area: Science** **School Year:**				
Michigan Standards, Benchmark, or *GLCE* *(Italics indicate the one used.)*	**Dates Taught (month/day/initials):**				
L.OL.04.31 Compare the needs of familiar plants and animals.					
L.EV.04.32 Illustrate characteristics and functions of observable body parts in a variety of animals that allow them to live in their environment.					
L.EV.04.33 Explain how physical characteristics (traits) or adaptations of animals (sharp teeth or claws for catching and killing prey, or color for camouflage) help them to survive in their environments.					
L.EC.04.34 Identify familiar organisms as part of a food chain or food web.					
L.EC.04.35 Explain how environmental changes can produce a change in the food web.					

Unit 4: Earth
Outcomes:
EG V.1 All students will describe the earth's surface;
EG V.1 All students will analyze effects of technology on the earth's surface and resources;
EH V.2 All students will describe the characteristics of water and demonstrate where water is found on earth;
EH V.2 All students will describe how water moves;
EAW V.3 All students will investigate and describe what makes up weather and how it changes from day to day, from season to season and over long periods of time;
ES V.4 All students will compare and contrast our planet and sun to other planets and star systems;
ES V.4 All students will describe and explain how objects in the solar system move

Grade Level Content Expectations (GLCEs)	**Michigan Benchmarks**	**Teaching the Faith Activities (I.F.)**
E.ST.04.36 Identify common objects in the sky, such as the sun and the moon. E.ST.04.37 Compare and contrast the characteristics of the sun, moon and Earth, including relative distances and abilities to support life. E.ST.04.38 Describe the Earth's revolution around the sun as it defines a year. E.ST.04.39 Explain that the Earth's rotation creates day and night. E.ST.04.40 Describe the motion of the moon around the Earth. E.ST.04.41 Explain that the observable shape of the moon follows a predictable pattern from full moon to full moon which approximately defines a month \. E.ST.04.42 Describe the apparent movement of the sun and moon across the sky through day/night and the seasons.	E.ST.04.1 Common objects in the sky have observable characteristics. E.ST.04.2 Common objects in the sky have observable characteristics and predictable patterns of movement.	• Practice finding places on Bible maps using a grid system. • Help the students understand that God created the world and yet changes constantly take place in nature.

Michigan District Lutheran School Curriculum *TEACHER ACCOUNTABILITY RECORD*

Unit Name: Unit 4 Earth **Teacher Name: _____** **Grade Level: 4**	**Curricular Area: Science** **School Year:**				
Michigan Standards, Benchmark, or *GLCE* *(Italics indicate the one used.)*	**Dates Taught (month/day/initials):**				
E.ST.04.36 Identify common objects in the sky, such as the sun and the moon					
E.ST.04.37 Compare and contrast the characteristics of the sun, moon and Earth, including relative distances and abilities to support life.					
E.ST.04.38 Describe the Earth's revolution around the sun as it defines a year.					
E.ST.04.39 Explain that the Earth's rotation creates day and night.					
E.ST.04.40 Describe the motion of the moon around the Earth.					
E.ST.04.41 Explain that the observable shape of the moon follows a predictable pattern from full moon to full moon which approximately defines a month					
E.ST.04.42 Describe the apparent movement of the sun and moon across the sky through day/night and the seasons.					

Unit 5: Health
Outcomes:

Grade Level Content Expectations (GLCEs)	Michigan Benchmarks See revised Health Education GLCE for 4th grade.	Teaching the Faith Activities (I.F.)