HUDSONVILLE PUBLIC SCHOOLS ELEMENTARY COURSE FRAMEWORK

COURSE/SUBJECT **Second Grade Science**

ENDURING UNDERSTANDINGS - INQUIRY STANDARDS (Kindergarten - 7th Grade Standards)	
Inquiry Process	**K-7 Standard S.IP: Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems.**
	S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.
Inquiry Analysis & Communications	**K-7 Standard S.IA: Develop an understanding that scientific inquiry and investigations require analysis and communication of findings, using appropriate technology.**
	S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.
Reflection & Social Implications	**K-7 Standard S.RS: Develop an understanding that claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.**
	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.

SCIENCE UNIT	STANDARD Which Michigan state standards does the unit address?	KEY CONCEPTS/ VOCABULARY	ASSESSMENTS Which assessments are given to determine student growth?
Unit 1: Matter (Measurement of Properties)	**INQUIRY STANDARDS** **Process** • S.IP.02.11 Make purposeful observations of various objects according to their properties. • S.IP.02.12 Generate questions based on observations of objects according to their properties and of single substances and mixtures. • S.IP.02.13 Plan and conduct simple investigations of objects or substances to determine whether they sink or float and to compare objects using a balance. • S.IP.02.14 Manipulate simple tools (metric rulers and meter sticks) to determine the length of objects and the volume of liquids (measuring cups and measuring spoons). • S.IP.02.15 Make accurate measurements of length of objects in appropriate units (meter, centimeter). • S.IP.02.16 Construct simple charts and graphs from data and observations of properties of objects and substances. **Analysis & Communication** • S.IA.02.12 Share ideas about the properties of objects and the classification of single substances and mixtures. • S.IA.02.13 Communicate and present findings about the properties of objects or substances and the classification of single substances and mixtures. • S.IA.02.14 Develop strategies and skills for gathering information about the properties of objects or substances. **Reflection & Social Implication** • S.RS.02.11 Demonstrate a means of classifying objects as single substances or mixtures through various illustrations, performances, exhibits, or activities. • S.RS.02.13 Recognize that when a science investigation on sinking and floating of objects or substances is done the way it was done before, similar results are expected. • S.RS.02.15 Use evidence when communicating ideas about the classification of single substances and mixtures. • S.RS.02.16 Identify technology used to compare objects that is used in everyday life. **CONTENT STANDARDS** • P.PM.02.12 Describe objects and substances according to their properties (color, size, shape, texture, hardness, liquid or solid, sinking or floating). • P.PM.02.13 Measure the length of objects using rulers (centimeters) and meter sticks (meters). • P.PM.02.14 Measure the volume of liquids using common measuring tools (measuring cups, measuring spoons, graduated cylinders and beakers) • P.PM.02.15 Compare objects using a balance. • P.PM.02.41 Recognize that some objects are composed of single substances (water, sugar, salt) and others are composed of more than one substance (salt and pepper, mixed dry beans).	balance classify color liquid mixture properties ruler shape size texture hardness solid sink float length meter stick centimeter (cm) meter (m) volume measuring cup measuring spoon compare single substance mass	District/Teacher Created Assessment

Unit 2: Plant Life	**INQUIRY STANDARDS** **Process** ● S.IP.02.11 Make purposeful observations of plant growth that include the needs of plants and the plant life cycle. • S.IP.02.12 Generate questions based on observations of plant growth and plant parts. • S.IP.02.13 Plan and conduct simple investigations into plant growth and survival to determine the needs of plants. • S.IP.02.14 Manipulate simple tools (metric rulers and meter sticks) to determine the growth of plants. • S.IP.02.15 Make accurate measurements of the growth of plants in appropriate units (meter, centimeter). • S.IP.02.16 Construct simple charts and graphs from data and observations of plant growth and life cycles. **Analysis & Communication** • S.IA.02.12 Share ideas about the needs of plants and life cycle stages. • S.IA.02.13 Communicate and present findings about plant investigations and their need for air, water and light. • S.IA.02.14 Develop strategies and skills for gathering information about the life cycle of plants. **Reflection & Social Implication** • S.RS.02.11 Demonstrate the life cycle of plants through various illustrations, performances, exhibits, or activities. • S.RS.02.13 Recognize that when a science investigation on the needs of plants is done the way it was done before, similar results are expected. • S.RS.02.15 Use evidence when communicating ideas about the needs of plants and the life cycle of plants. • S.RS.02.16 Identify technology used to enhance the growth of plants that is used in everyday life. **CONTENT STANDARDS** • L.OL.02.14 Identify the needs of plants. • L.OL.02.22 Describe is to tell or depict in spoken or written words the life cycle of familiar flowering plants using the stages of seed, plant, flower, and fruit. • L.HE.02.13 Identify characteristics of plants (for example: leaf shape, flower type, color, size) that are passed on from parent to young.	flowering plants needs of plants air water light food life cycle seed plant flower fruit characteristics leaf shape flower type color size parent young	District/Teacher Created Assessment

Unit 3: Earth's Land and Water (Earth's Surface Features)	**INQUIRY STANDARDS** **Process** • S.IP.02.11 Make purposeful observations of how rain collects on models of major landforms and bodies of water. • S.IP.02.12 Generate questions about the flow of water over land and into the ground based on observations. • S.IP.02.13 Plan and conduct simple investigations into the flow of water downhill into bodies of water, or into the ground. • S.IP.02.14 Manipulate simple tools that aid in observations of models, (hand lens, meter sticks, measuring cups, graduated cylinders). • S.IP.02.15 Make accurate measurements with appropriate units (centimeters, milliliters) for the measurement tool. • S.IP.02.16 Construct simple charts and graphs from data and observations of investigations into the flow of water downhill into bodies of water or into the ground. **Analysis & Communication** • S.IA.02.11 Share ideas about observations of how water flows downhill through purposeful conversation. • S.IA.02.12 Communicate and present finding of observations and investigations into the flow of water downhill into bodies of water, or into the ground. • S.IA.02.13 Develop strategies and skills for information gathering about landforms, bodies of water, and how water flows downhill into bodies of water or into the ground. **Reflection & Social Implications** • S.RS.02.12 Use evidence from their investigations when communicating how rain water collects on the Earth's surface, flows downhill into bodies of water, or into the ground. • S.RS.02.13 Recognize that when a science investigation is done the way it was done before, similar results are expected. • S.RS.02.14 Demonstrate landforms, bodies of water, how rain collects on Earth's surface, and flows downhill into bodies of water or into the ground through models or exhibits. **CONTENT STANDARDS** • E.SE.02.21 Describe the major landforms of the surface of the Earth (mountains, plains, plateaus, valleys, hills). • E.FE.02.21 Describe how rain collects on the surface of the Earth and flows downhill into bodies of water (streams, rivers, lakes, oceans) or into the ground. • E.FE.02.22 Describe the major bodies of water on the Earth's surface (lakes, ponds, oceans, rivers, streams).	plateau valley hill mountain plain lake pond river stream ocean downhill soak	District/Teacher Created Assessment

Unit 4: Uses and Properties of Water	**INQUIRY STANDARDS** **Process** • S.IP.02.11 Make purposeful observations of water in solid and liquid states. • S.IP.02.12 Generate questions about water based on observations. • S.IP.02.13 Plan and conduct simple investigations into the properties of water as a solid and a liquid. • S.IP.02.14 Manipulate simple tools that aid in observations of water and models of sources of water (hand lens, measuring cups, graduated cylinders). • S.IP.02.15 Make accurate measurements with appropriate units (centimeters, milliliters) for the measurement tool. • S.IP.02.16 Construct simple charts and graphs from data and observations of investigations into the properties of water as a solid and liquid. **Analysis & Communication** • S.IA.02.11 Share ideas about observations of the properties of water as a solid and a liquid through purposeful conversation. • S.IA.02.12 Communicate and present finding of observations and investigations into the properties of water as a solid and liquid. • S.IA.02.13 Develop strategies and skills for information gathering about sources and uses of water. **Reflection & Social Implications** • S.RS.02.12 Use evidence from their investigations when communicating the properties of water as a solid and liquid. • S.RS.02.13 Recognize that when a science investigation is done the way it was done before, similar results are expected. • S.RS.02.14 Demonstrate the sources and uses of water through models or exhibits. **CONTENT STANDARDS** • E.FE.02.11: Identify water sources (wells, springs, lakes, rivers, oceans). • E.FE.02.12: Identify household uses of water (drinking, cleaning, food preparation). • E.FE.02.13: Describe properties of water as a liquid (visible, flowing, shape of container) and recognize rain, dew, and fog as water in its liquid state. • E.FE.02.14: Describe the properties of water as a solid (hard, visible, frozen, icy) and recognize ice, snow and hail as water in its solid state.	fresh water salt water flow food preparation well spring lake river ocean properties/property describe identify source hard visible frozen icy ice snow hail visible flowing shape of container rain dew fog solid liquid	District/Teacher Created Assessment