

# HUDSONVILLE PUBLIC SCHOOLS ELEMENTARY COURSE FRAMEWORK



**COURSE/SUBJECT**

**First Grade Science**

## ENDURING UNDERSTANDINGS - INQUIRY STANDARDS (Kindergarten - 7<sup>th</sup> Grade Standards)

<b>Inquiry Process</b>	<b>K-7 Standard S.IP: Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems.</b>
	S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.
<b>Inquiry Analysis &amp; Communications</b>	<b>K-7 Standard S.IA: Develop an understanding that scientific inquiry and investigations require analysis and communication of findings, using appropriate technology.</b>
	S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.
<b>Reflection &amp; Social Implications</b>	<b>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.</b>
	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?
<p><b>Unit 1:</b> Sorting by Properties</p>	<p><b>INQUIRY STANDARDS</b></p> <p><b>Process</b></p> <ul style="list-style-type: none"> <li>• S.IP.01.11 Make purposeful observations of the properties of a variety of objects, sink and float objects, and objects that are attracted to magnets using the appropriate senses.</li> <li>• S.IP.01.12 Generate questions regarding objects attracted to a magnet and objects that sink and float based on observations.</li> <li>• S.IP.01.13 Plan and conduct simple investigations into objects that sink and float and objects that are attracted to magnets.</li> <li>• S.IP.01.14 Manipulate simple tools (hand lens) that aids in observation of properties of matter.</li> <li>• S.IP.01.16 Construct simple charts from data and observations regarding objects that sink and float and objects that are attracted to magnets.</li> </ul> <p><b>Analysis &amp; Communication</b></p> <ul style="list-style-type: none"> <li>• S.IA.01.12 Share ideas about properties of objects, sink and float investigations, and magnetism investigations through purposeful conversation.</li> <li>• S.IA.01.13 Communicate and present findings of observations of properties of objects; sink and float investigations, and magnetism investigations.</li> <li>• S.IA.01.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations) about properties of objects, sink and float objects, and objects that are attracted to a magnet.</li> </ul> <p><b>Reflection &amp; Communication</b></p> <ul style="list-style-type: none"> <li>• S.RS.01.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities about describing objects by their properties, sink and float investigations, water as a solid and as a liquid, and objects that are attracted to magnets.</li> </ul> <p><b>CONTENT STANDARDS</b></p> <ul style="list-style-type: none"> <li>• P.PM.01.11: Demonstrate the ability to sort objects according to observable properties such as color, shape, size, sinking and floating. P.PM.01.21: Demonstrate that water as a solid keeps its own shape (ice).</li> <li>• P.PM.01.22 Demonstrate that water as a liquid takes on the shape of various containers.</li> <li>• P.PM.01.31: Identify materials that are attracted by magnets.</li> <li>• P.PM.01.32 Observe that like poles of a magnet repel and unlike poles of a magnet attract.</li> </ul>	<p>Sort Properties Poles Solid Liquid Gas Magnet Push Pull Attract Repel Sink Float Attribute</p>	<p>Sorting of Properties Unit Assessment</p>

<p><b>Unit 2:</b> Animal Life</p>	<p><b>INQUIRY STANDARDS</b></p> <p><b>Process</b></p> <ul style="list-style-type: none"> <li>• S.IP.01.11 Make purposeful observations of the life cycle of an animal and/or characteristics of animals using the appropriate senses.</li> <li>• S.IP.01.12 Generate questions about the life cycle of organisms based on observations.</li> <li>• S.IP.01.13 Plan and conduct simple investigations into the needs of animals in the classroom habitat.</li> <li>• S.IP.01.14 Manipulate the hand lens, pencils, rulers, that aid observation of animals.</li> <li>• S.IP.01.15 Make accurate measurements of the growth of different plants and animals in a classroom habitat.</li> <li>• S.IP.01.16 Construct simple growth charts from observations and data of plants and animals in the classroom habitat.</li> </ul> <p><b>Analysis &amp; Communication</b></p> <ul style="list-style-type: none"> <li>• S.IA.01.12 Share ideas about animals and their offspring through purposeful conversation.</li> <li>• S.IA.01.13 Communicate and present findings of observations of life cycles and growth of animals in the classroom habitat.</li> <li>• S.IA.01.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video) about the life cycle of different animals.</li> </ul> <p><b>Reflection &amp; Communication</b></p> <ul style="list-style-type: none"> <li>• S.RS.01.11 Demonstrate the life cycle of an animal through various illustrations, performances, models, exhibits, and activities.</li> </ul> <p><b>CONTENT STANDARDS</b></p> <ul style="list-style-type: none"> <li>• L.OL.01.13 Identify the needs of animals.</li> <li>• L.OL.01.21: Describe the life cycle of animals including the following stages: egg, young, adult; egg, larva, pupa, adult.</li> <li>• L.HE.01.11 Identify characteristics (for example: body coverings, beak shape, number of legs, body parts) that are passed on from parents to young.</li> <li>• L.HE.01.12 Classify young animals based on characteristics that are passed on from parents (dogs/puppies, cats/kittens, cows/calves, chicken/chicks).</li> </ul>	<p>needs of animals  life cycle  egg  young  adult  larva  pupa characteristics  parents  air  water  food  beak shape  body coverings:  feathers, fur, skin,  hair, scales</p>	<p>Unit 2 Animal Life Assessment</p>
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<p><b>Unit 3: Weather</b></p>	<p><b>INQUIRY STANDARDS</b></p> <p><b>Process</b></p> <ul style="list-style-type: none"> <li>• S.IP.01.11 Make purposeful observations of the daily weather.</li> <li>• S.IP.01.12 Generate questions about weather events based on observations of temperature, rainfall, cloud cover, and wind speed.</li> <li>• S.IP.01.13 Plan and conduct simple observations into weather related phenomenon such as temperature, rainfall, cloud cover, and wind speed.</li> <li>• S.IP.01.14 Manipulate simple tools that aid in weather observations and data collection (thermometers, rain gauges, wind socks).</li> <li>• S.IP.01.15 Make accurate measurements with appropriate units for the weather observation tools. (Fahrenheit, Celsius, centimeters, north, south, east, west, breezy, windy, and calm)</li> <li>• S.IP.01.16 Construct simple charts from weather data and observations of temperature, rain fall, cloud cover, and wind speed.</li> </ul> <p><b>Analysis &amp; Communication</b></p> <ul style="list-style-type: none"> <li>• S.IA.01.11 Share ideas about weather in Michigan through purposeful conversation.</li> <li>• S.IA.01.12 Communicate and present findings of observations and patterns in weather.</li> <li>• S.IA.01.13 Develop strategies for information gathering to find out about weather related phenomenon and events (ask a meteorologist, use a book, make observations, conduct simple investigations, and watch a weather report or video).</li> </ul> <p><b>Reflection &amp; Communication</b></p> <ul style="list-style-type: none"> <li>• S.RS.01.11 Recognize that science investigations into weather and data collection are done more than one time.</li> <li>• S.RA.01.12 Demonstrate weather and/or season concepts through various illustrations, performances, models, exhibits, and activities.</li> </ul> <p><b>CONTENT STANDARDS</b></p> <ul style="list-style-type: none"> <li>• E.ES.01.21 Compare daily changes in the weather related to temperature (cold, hot, warm, cool); cloud cover (clear, cloudy, partly cloudy, foggy) precipitation (rain, snow, hail, freezing rain); wind (breezy, windy, calm).</li> <li>• E.ES.01.31 Identify the tools that might be used to measure temperature, precipitation, cloud cover and wind.</li> <li>• E.ES.01.32 Observe and collect data of weather conditions over a period of time.</li> </ul>	<p>temperature cold warm hot cool weather conditions daily weather pattern cloud clear- sunny cloudy partly cloudy foggy precipitation rain snow hail freezing rain rain gauge wind vane wind sock breezy windy calm</p>	<p>Unit 3 Weather Assessment</p>
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<p><b>Unit 4:</b> The Sun Warms the Earth</p>	<p><b>INQUIRY STANDARDS</b></p> <p><b>Process</b></p> <ul style="list-style-type: none"> <li>• S.IP.01.11 Make purposeful observations of the daily weather to relate to the four seasons in terms of temperature, cloud cover, precipitation and wind.</li> <li>• S.IP.01.12 Generate questions about weather events based on observations of temperature, precipitation, cloud cover, and wind speed.</li> <li>• S.IP.01.13 Plan and conduct simple observations into weather related phenomenon such as temperature, precipitation, cloud cover, and wind speed.</li> <li>• S.IP.01.14 Manipulate simple tools that aid in weather observations and data collection (thermometers, rain gauges, wind socks or wind vanes).</li> <li>• S.IP.01.15 Make accurate measurements with appropriate units for the weather observation tools. (Fahrenheit, Celsius, centimeters, north, south, east, west)</li> <li>• S.IP.01.16 Construct simple charts from weather data and observations of temperature, rain fall, cloud cover, and wind speed.</li> </ul> <p><b>Analysis &amp; Communication</b></p> <ul style="list-style-type: none"> <li>• S.IA.01.11 Share ideas about weather, severe storms and seasons through purposeful conversation.</li> <li>• S.IA.01.12 Communicate and present findings of patterns in weather and observations of weather related to seasons.</li> <li>• S.IA.01.13 Develop strategies for information gathering to find out about weather related phenomenon, changes in the seasons, and severe weather events (ask a meteorologist, use a book, make observations, conduct simple investigations, and watch a weather report or video).</li> </ul> <p><b>Reflection &amp; Communication</b></p> <ul style="list-style-type: none"> <li>• S.RS.01.11 Recognize that science investigations into weather and data collection are done more than one time.</li> <li>• S.RA.01.12 Demonstrate weather and/or season concepts through various illustrations, performances, models, exhibits, and activities.</li> </ul> <p><b>CONTENT STANDARDS</b></p> <ul style="list-style-type: none"> <li>• E.ES.01.11 Identify the sun as the most important source of heat, which warms the land, air, and water on the Earth.</li> <li>• E.ES.01.12 Demonstrate the importance of sunlight and warmth in plant growth.</li> <li>• E.ES.01.22 Describe and compare weather related to the four seasons in terms of temperature, cloud cover, precipitation, and wind.</li> <li>• E.ES.01.23 Identify severe weather characteristics.</li> <li>• E.ES.01.24 Describe precautions that should be taken for human safety during severe weather conditions (thunder and lightning, strong winds, and heavy precipitation).</li> </ul>	<p>severe weather thunderstorm lightning tornadoes blizzards breezy wind windy strong winds safety seasons summer fall winter spring temperature cool warm hot cold cloud cover precipitation rain snow sunny precautions</p>	<p>Unit 4 Sun Assessment</p>
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