

HUDSONVILLE PUBLIC SCHOOLS ELEMENTARY COURSE FRAMEWORK



COURSE/SUBJECT

Kindergarten 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?
<p>Unit 1: Observations With Senses</p>	<p>INQUIRY STANDARDS</p> <p>Process</p> <ul style="list-style-type: none"> • S.IP.00.11 Make purposeful observation of the natural world using the appropriate senses. • S.IP.00.12 Generate questions based on observations. • S.IP.00.13 Plan and conduct simple investigations. • S.IP.00.14 Manipulate simple tools (for example: hand lens, pencils, balances, non-standard objects for measurement) that aid observation and data collection. • S.IP.00.16 Construct simple charts from data and observations. <p>Analysis & Communication</p> <ul style="list-style-type: none"> • S.IA.00.12 Share ideas about science through purposeful conversation. • S.IA.00.13 Communicate and present findings of observations. • S.IA.00.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video). <p>Reflection & Communication</p> <ul style="list-style-type: none"> • S.RS.00.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities. 	<p>senses</p> <p>observation sight sound taste touch smell feel</p>	<p>Summative assessment sample questions:</p> <p>Which sense do you use to identify the color of a teddy bear?</p> <p>Which sense do you use to tell if a car is coming down the street?</p> <p>Which sense do you use to tell if a candy is sweet or sour?</p> <p>Children will decide how a group of objects have been sorted.</p>

<p>Unit 2: Pushes and Pulls</p>	<p>INQUIRY STANDARDS</p> <p>Process</p> <ul style="list-style-type: none"> • S.IP.00.11 Make purposeful observations of the movement of objects in response to pushes and pulls. • S.IP.00.12 Generate questions based on observations of objects falling toward the Earth. • S.IP.00.13 Plan and conduct simple investigations about pushes and pulls changing the speed or direction of moving objects. • S.IP.00.14 Manipulate simple tools (pencil) to collect data about the affect of pulls or pushes changing the speed or direction of moving objects. • S.IP.00.16 Construct simple charts from investigations about pushes and pulls changing the speed or direction of moving objects. <p>Analysis & Communication</p> <ul style="list-style-type: none"> • S.IA.0011 Share ideas through purposeful conversation about how pushes or pulls affect the speed or direction of moving objects. • S.IA.0012 Communicate and present findings of observations about the motion of an object (for example: away from or closer to) from different observer’s views. • S.IA.0013 Develop strategies for information gathering (ask an expert, make observations, conduct investigations, watch a video) about forces affecting the motion of objects. <p>Reflection & Communication</p> <ul style="list-style-type: none"> • S.RS.0011 Demonstrate the effect of pushes or pulls on the motion of objects through various illustrations, performances, models, exhibits or activities. <p>CONTENT STANDARDS</p> <ul style="list-style-type: none"> • P.FM.00.11 Describe the position of an object (for example: above, below, in front of, behind, on) in relation to other objects around it. • P.FM.00.12 Describe the direction of a moving object (for example: away from or closer to) from different observers’ views. • P.FM.00.21 Observe how objects fall toward the earth. • P.FM.00.31 Demonstrate pushes and pulls on objects that can move. • P.FM.00.32 Observe that objects initially at rest will move in the direction of the push or pull. • P.FM.00.33 Observe how pushes and pulls can change the speed or direction of moving objects. • P.FM.00.34 Observe how shape (for example: cone, cylinder, sphere) and mass of an object can affect motion. 	<p>push pull direction speed shape size mass at rest above below in front of behind on under between on top away from closer to toward fast, faster slow, slower</p>	<p>Identify whether a picture shows a push or a pull.</p> <p>Draw an arrow that shows the path the ball will fall.</p>
--	--	--	--

<p>Unit 3: Basic Needs of Living Things</p>	<p>INQUIRY STANDARDS</p> <p>Process</p> <ul style="list-style-type: none"> • S.IP.00.11 Make purposeful observation of living and nonliving things using the appropriate senses. • S.IP.00.12 Generate questions about living things based on observations. • S.IP.00.13 Plan and conduct simple investigations into the basic needs of living things. • S.IP.00.14 Manipulate simple tools (hand lens, balances) that aid observation and data collection. • S.IP.00.16 Construct simple charts from data and observations of living things. <p>Analysis & Communication</p> <ul style="list-style-type: none"> • S.IA.00.12 Share ideas about the needs of living things through purposeful conversation. • S.IA.00.13 Communicate and present findings of observations of living things. • S.IA.00.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video). <p>Reflection & Communication</p> <ul style="list-style-type: none"> • S.RS.00.11 Demonstrate science concepts about the needs of living things through illustrations, performances, models, exhibits, and activities. <p>CONTENT STANDARDS</p> <ul style="list-style-type: none"> • L.OL.00.11 Identify that living things have basic needs. • L.OL.00.12 Identify and compare living and nonliving things. • E.SE.00.12 Describe how earth materials contribute to plant and animal life. 	<p>living things basic needs nonliving things air water food plants animals survive</p>	<p>Identify living/nonliving things.</p> <p>Identify needs of living things.</p>
--	--	---	--

<p>Unit 4: My Earth</p>	<p>INQUIRY STANDARDS</p> <p>Process</p> <ul style="list-style-type: none"> • S.IP.00.11 Make purposeful observation of different earth materials (water, soil, sand, rock) using the appropriate senses. • S.IP.00.12 Generate questions based on observations of different earth materials. • S.IP.00.13 Plan and conduct simple investigations into the ability of different earth materials to absorb water. • S.IP.00.14 Manipulate simple tools (hand lens, balances) that aid observation and data collection of different earth materials, including water. • S.IP.00.15 Make accurate measurements with appropriate (non-standard) units of different earth materials. • S.IP.00.16 Construct simple charts from data and observations of earth materials. <p>Analysis & Communication</p> <ul style="list-style-type: none"> • S.IA.00.12 Share ideas about investigations into the properties of earth materials through purposeful conversation. • S.IA.00.13 Communicate and present findings of investigations into the ability of different earth materials to absorb water. • S.IA.00.14 Develop strategies for information gathering about earth materials. (Ask an expert, use a book). <p>Reflection & Communication</p> <ul style="list-style-type: none"> • S.RS.00.11 Demonstrate through models and activities how earth materials absorb water. <p>CONTENT STANDARDS</p> <ul style="list-style-type: none"> • E.SE.00.11 Identify earth materials that occur in nature (rocks, sand, soil, and water). 	<p>soil water rock sand</p>	<p>Color water on map blue and land green.</p> <p>Identify soil, water, rock and sand.</p>
--------------------------------	---	---	--