

# **Martensdale-St. Marys Community School**

## **Science Curriculum**

**Standard 1: Students can understand and apply skills used in scientific inquiry.**

### **Grade:7-8**

<b>Benchmark: The student will:</b>	<b>Grade Level Objectives</b>	<b>Instructional Strategies</b>	<b>Assessments</b>	<b>Instructional Timeline</b>
<b>A. Students can understand and apply the processes and skills of scientific inquiry.</b>	<b>A. 1. Identify and generate questions that can be answered through scientific investigations.</b>	Experiments Discussion Research Labs	Formative assessments Must pose a question	
	<b>A. 2. Design and conduct different kinds of scientific investigations.</b>	Identify questions and find solutions	Lab reports	
	<b>A. 3. Understand that different kinds of questions suggest different kinds of scientific investigations.</b>	Problem solving Strategies investigations research	Field observations	
<b>B. Students can analyze and interpret scientific information.</b>	<b>B. 1. Select and use appropriate tools and techniques to gather, analyze and interpret data.</b>	Determining variables Taking accurate measurements	Task completion Journaling Vocab	
	<b>B. 2. Incorporate mathematics in scientific inquiry.</b>	Accurate data Understanding formulas	Check of work Formative assessments	
	<b>B. 3. Use evidence to develop descriptions, explanations, predictions, and models.</b>	Making models Labs Research	Pose questions Formative Assessments Summative Assess.	
	<b>B. 4. Think critically and logically to make the relationships between evidence and explanations.(C)</b>	Study other scientists Compare eras Research	Journaling Lab Reports	
	<b>B. 5. Recognize and analyze alternative explanations and predictions.(HN)</b>	Debates Persuasive essays	Research Observations	
	<b>B. 6. Communicate and defend procedures and explanations.(T)</b>	Debates Communicate	Reports Structured controversy	

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**Standard 2: Students can understand concepts and relationships in life science.**

**Grade:7-8**

<b>Benchmarks: The student will:</b>	<b>Grade Level Objectives</b>	<b>Instructional Strategies</b>	<b>Assessments</b>	<b>Instructional Timeline</b>
<b>A. Students can understand structures of living things.</b>	<b>A. 1. Understand and apply knowledge of the basic components and functions of cells, tissues, organs, and organ systems.</b>	Labs Microscope Slides Compare contrast cells and systems	Summative assessments Journal Formative assessment	
	<b>A. 2. Understand and apply knowledge of how different organisms pass on traits (heredity).</b>	Punnett Squares Phenotypes/genotypes	Simulations Formative assessments	
	<b>A. 3. Understand and apply knowledge of the complementary nature of structure and function and the commonalities among organisms.</b>	Outdoor labs Compare/contrast plants and animals Define problems Identify solutions Test solutions	Lab reports Formative assessments Demonstrate conservation strategies	
	<b>A. 4. Understand and apply knowledge of the functions and interconnections of the major human body systems including the breakdown in structure or function that disease causes.</b>	Labs Research Slides Questioning Compare/contrast Venn Diagrams	Lab reports Vocab checks Formative assessments	
<b>B. Students can understand life cycles.</b>	<b>B. 1. Understand and apply knowledge of:</b> <ul style="list-style-type: none"> <li>• interdependency of organisms, changes in environmental conditions, and survival of individuals and species.</li> <li>• the cycling of matter and energy in ecosystems.</li> </ul>	Outdoor labs Indoor Labs Identify needs for living things Identify characteristics of living things Compare cycles Discussion	Define living things Formative Summative assessments	
<b>C. Students can understand environmental interaction and adaptation.</b>	<b>C. 1. Understand and demonstrate knowledge of the social and personal implications of environmental issues.(PS) (MCGF)</b>	Identify social issues Identify school solutions	Journals Formative/summative	

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**Standard 3: Students can understand concepts and relationships in Earth/Space sciences.**

**Grade: 7-8**

<b>Benchmark: The student will:</b>	<b>Grade Level Objectives</b>	<b>Instructional Strategies</b>	<b>Assessments</b>	<b>Instructional Timeline</b>
<b>A. Students can understand ideas about Earth's composition and structure.</b>	<b>A. 1. Understand and apply knowledge of the structure and processes of the earth system and the processes that change the earth and its surface.</b>	Research Labs Compare Contrast Identify dangers Propose solutions	Model changes How and why Lab reports Formative assessments	
	<b>A. 2. Understand and apply knowledge of the water cycle, including consideration of events that impact groundwater quality.</b>	Research Models Labs Discussion	Formative assessments Models Summative assessment	
	<b>A. 3. Understand and apply knowledge of the earth's atmospheric properties and how they influence weather and climate.(G)</b>	Accurate measurements Collect data Labs	Formative assessments Vocab check	
<b>B. Students can understand changes in and around Earth.</b>	<b>B. 1. Understand and apply knowledge of earth history based on physical evidence.</b>	Research Debate	Summative assessment	
<b>C. Students can understand concepts relating to the universe.</b>	<b>C. 1. Understand and apply knowledge of the components of our solar system.</b>	Research Models	Summative assessments Formative assessments	

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**Standard 4: Students can understand concepts and relationships in physical science.**

**Grade: 7-8**

<b>Benchmark: The student will:</b>	<b>Grade Level Objectives</b>	<b>Instructional Strategies</b>	<b>Assessments</b>	<b>Instructional Timeline</b>
<b>A. Students can understand and apply concepts related to mechanics, forces, and motion.</b>	<b>A. 1. Understand and apply knowledge of motions and forces.</b>	Labs Research Discussions Models	Lunar Landers Lab reports Formative assessments	
<b>B. Students can understand and apply the concept of energy.</b>	<b>B. 1. Understand and apply knowledge of forms of energy and energy transfer.</b>	Labs Research Discussion Models	Lab reports Journals Formative/summative	
<b>C. Students can understand and identify properties and changes of matter.</b>	<b>C. 1. Understand and apply knowledge of:</b> <ul style="list-style-type: none"> <li>• <b>elements, compounds, mixtures, and solutions based on the nature of their physical and chemical properties.</b></li> <li>• <b>physical and chemical changes and their relationship to the conservation of matter and energy.</b></li> </ul>	Labs Research Discussion Models Background information	Journaling Lab reports Formative and summative assessments	