

**Effective Date: 2008-2009**

## **Hamburg Area School District**

**Name of Course: Science**

**Department: Science**

**Length of Course: full year**

**Period Per Cycle: 5**

**Length of Period: 35 minutes**

**Grade Level: 5**

**Instructional Time: 175 minutes per cycle**

**Texts and Resources:**    **Harcourt Science**  
                                  **Lab Kits**  
                                  **Internet**

**Assessments:** **Harcourt Science Tests & Quizzes**  
                          **Teacher made tests**  
                          **Projects**

**Hamburg Area School District  
Course Plan  
Grade 5 Science**

**Course Name:** Grade 5 Science

**Unit:** Using Scientific Process Skills

**Time Line:** Beginning of year

<b>Essential Content/ Essential Questions</b>	<b>Performance Objectives</b>	<b>Standards/Anchors</b>
What are the steps of the Scientific Method?	*Identify the steps of the Scientific Method. *List and create a hypothesis. *Make predictions. *Record date.	S8.A.2.1 (all) 3.1.7.B,D,E 3.2.7.A,B,C,D
What are the uses of science tools?	*Identify and use science tools.	S8.A.2.1 (all) 3.2.7.B,D 3.7.7.A,B 3.6.7.A,B,C,D

**Hamburg Area School District  
Course Plan  
Grade 5 Science**

**Course Name:** Grade 5 Science

**Unit:** From Single Cell to Body Systems

**Time Line:**

<b>Essential Content/ Essential Questions</b>	<b>Performance Objectives</b>	<b>Standards/Anchors</b>
What are cells, and what do they do?	<ul style="list-style-type: none"> <li>*Describe structures that are found in cells.</li> <li>*Analyze processes that take place in cells.</li> <li>*Describe interactions that take place in cells.</li> </ul>	S8.B.1.1.1 3.1.7.A,B 3.2.7.A,B,C 3.3.7.A,B,C,D
How are Human Body Structures Organized?	<ul style="list-style-type: none"> <li>*Recognize that many-celled organisms have specialized structures that transport materials</li> <li>Describe how the blood, heart, and lungs work together to help the body take in oxygen and give off carbon dioxide.</li> <li>* Analyze how the parts of the digestive system function.</li> <li>*Explain the role of the excretory system, and identify its organs.</li> </ul>	S8.B.1.1.2 S8.B. 1.1.3 S8A.3.1.2 3.3.7.A,B 4.6.7.A 4.7.7.B
How do bones, muscles, and Nerves work together?	<ul style="list-style-type: none"> <li>*Describe the structures that make up the skeletal system.</li> <li>*Identify and describe the structures that make up the muscular system.</li> <li>*Explain how the parts of the nervous system work to carry messages through the body.</li> </ul>	S8.B.1.1.4 S8.A.3.1.5 3.3.7.C
How does nature reuse materials?	<ul style="list-style-type: none"> <li>*Identify the significance of the carbon dioxide, oxygen, and nitrogen cycles.</li> <li>*Describe processes responsible for the formation of coal and petroleum.</li> <li>*Conclude that human activities can upset the balance of the carbon dioxide-oxygen cycle.</li> </ul>	S8.B.1 3.3.7.A,B,C 3.5.7.A,B

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**Course Name:** Grade 5 Science  
**Unit:** Cycles in Nature

**Time Line:**

<b>Essential Content/ Essential Questions</b>	<b>Performance Objectives</b>	<b>Standards/Anchors</b>
How does nature reuse materials?	*Identify the significance of the carbon dioxide, oxygen, and nitrogen cycles. *Describe processes responsible for the formation of coal and petroleum. *Conclude that human activities can upset the balance of the carbon dioxide-oxygen cycle.	S8.B.3.1.1 3.3.7.A,B,C 3.5.7.A,B
Why is the water cycle important?	*Describe the importance of the water cycle. *Describe the main processes in the water cycle. *Recognize that water is a limited resource that needs to be protected.	S8.D.1.3.1 3.5.7.A,C,D 4.1.&.A,B 4.3.7.B

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**Course Name:** Grade 5 Science

**Unit:** Living Things Interact

**Time Line:**

<b>Essential Content/ Essential Questions</b>	<b>Performance Objectives</b>	<b>Standards/Anchors</b>
What are ecosystems?	<ul style="list-style-type: none"> <li>*Describe interactions that occur within an ecosystem.</li> <li>*Analyze adaptive characteristics that result in an organism's unique niche in an ecosystem.</li> <li>*Identify factors that limit the number and type of organisms in an ecosystem.</li> </ul>	S8.A.3 4.6.7.A,B,C 3.3.7.A,C 3.8.7.B
How does energy flow through an ecosystem?	<ul style="list-style-type: none"> <li>*Identify the roles of producers, consumers, and decomposers in an ecosystem.</li> <li>*Describe how energy flows from one organism to another in food chains and in food webs.</li> <li>*Recognize that because energy is lost as heat at each level of consumption, ecosystems must have more producers than consumers.</li> </ul>	S8.B.3.2.1 S8.B.3.2.2 S8.B.3.1.2 S8.A.3.1.3 4.1.7.C,D 4.4.7.B
How do organisms compete and survive in an Ecosystem?	<ul style="list-style-type: none"> <li>*Identify ways in which organisms are adapted to compete for resources.</li> <li>*Describe some mutually beneficial interactions that occur within ecosystems.</li> <li>Compare instinctive behaviors with learned ones.</li> </ul>	S8.B.3.2.3 4.6.7.B 4.6.7.C
What is extinction and what are its causes?	<ul style="list-style-type: none"> <li>*Identify trends in resource use.</li> <li>*Describe some natural and human causes of extinction.</li> <li>*Identify ways humans can work to prevent the extinction of endangered species.</li> </ul>	S8.B.3.3.2 4.7.7.C 4.8.7.A,B,C,D,E

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**Course Name:** Grade 5 Science

**Unit:** Atoms and Elements

**Time Line:**

<b>Essential Content/ Essential Questions</b>	<b>Performance Objectives</b>	<b>Standards/Anchors</b>
What are atoms and elements?	*Identify an atom and its major parts. *Describe an element. Describe and compare the properties of metals.	S8.C.1.1.1 3.4.7.A,B
What are compounds?	*Recognize how the elements are grouped in the periodic table. *Identify a compound as a combination of two or more elements. *Describe what a chemical formula reveals about a molecule.	S8.C.1.1.1 S8.C.3.1.2 3.4.7.A,B

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**Course Name:** Grade 5 Science

**Unit:** Motion

**Time Line:**

<b>Essential Content/ Essential Questions</b>	<b>Performance Objectives</b>	<b>Standards/Anchors</b>
How are motion and speed related?	*Recognize and describe the relationships among speed, velocity, acceleration, and momentum.	S8.C.3.1.1 S8.C.3.1.2 S8.C.3.1.3 3.4.7.C 3.6.7.C
What are the three laws of motion?	*Analyze and explain the three laws of motion.	S8.C.3.1.3 3.6.7.C 3.1.7.B
Why do the planets stay in orbit?	*Describe how inertia and gravity interact to make an orbit. *Explain the law of universal gravitation.	S8.D.3.1.2 3.4.7.D

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**Unit:** Forms of Energy

**Time Line:**

Essential Content/ Essential Questions	Performance Objectives	Standards/Anchors
What are kinetic and potential energy?	*Describe potential and kinetic energy. *List the various forms of energy.	S8.C.3.1.2 S8.C.2.1.3 3.4.7.C 3.6.7.C
What is electric energy?	*Explain what electric energy is. *Tell what an electric current is. *Describe how electromagnets work.	S8.C.2.1.1 S8.C.2.1.2 3.4.7.B,C 3.2.7.C
What are light and sound energy?	*Describe the characteristics of light energy and sound energy. *Identify and compare the characteristics of light waves and sound waves.	S8.C.2.1.1 4.2.7.B 3.4.7.B,C
What are thermal and chemical energy?	*Describe thermal energy. *Explain how thermal energy moves. *Describe chemical energy.	S8.C.2.1.1 4.2.7.B,D 3.7.7.A