

SENECA VALLEY SCHOOL DISTRICT

CURRICULUM

Course Title:	Science/Health
Grade Level(s):	5
Periods Per Week:	5
Length of Period:	35 Minutes
Length of Course:	Full Year
Faculty Author(s):	
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COURSE DESCRIPTION:

Fifth grade science will encompass 18 weeks of Environments and 9 weeks of Astronomy. Sections I, II and III are skills and processes to embed into the content areas in this curriculum. The first two sections will incorporate the PA Core Academic Standards for Reading in Science and Technology, and Academic Standards for Writing in Science and Technical Subjects. The third section, Inquiry Process Skills, provides an overview of the inquiry based approach to teaching science. All three of these sections need to be addressed to support the delivery of the content.

The Environments study will include: ecosystems, plants and animals, and human impact on environment.

The study of Astronomy will include: planet characteristics, and the relationship between and among Earth, Moon, Sun, and other celestial bodies.

Note: Nine weeks of health instruction is dedicated to the health curriculum (see fifth grade health curriculum document).

This document is based on PA Assessment Anchors and Eligible Content Anchors. Please review and follow the attached Pennsylvania Academic Standards for Science and Technology.

The following outline provides a general overview of the course content, not a chronological timetable. The weeks denoted for each area provide an idea for the overall time spent working with a given topic throughout the school year.

COURSE OUTLINE	OBJECTIVES (PA standard)			
<p>I. Reading in Science</p>	<p>CC.3.5.6-8.B. Determine the central ideas or conclusions of a text.</p> <p>CC.3.5.6-8.C. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>CC.3.5.6-8.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context.</p> <p>CC.3.5.6-8.E. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.</p> <p>CC.3.5.6-8.F. Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.</p> <p>CC.3.5.6-8.G. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</p> <p>CC.3.5.6-8.I. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p>			
<p>II. Writing in Science</p>	<p>CC.3.6.6-8.A. Write arguments focused on <i>discipline-specific content</i> by:</p>			

	<ul style="list-style-type: none"> • Introduce claim(s) about a topic or issue, acknowledge and organize the reasons and evidence logically. • Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. • Establish and maintain a formal style. • Provide a concluding statement or section that follows from and supports the argument presented. <p>CC.3.6.6-8.B. * Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <ul style="list-style-type: none"> • Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. • Use precise language and domain-specific vocabulary to inform about or explain the topic. • Establish and maintain a formal style and objective tone. • Provide a concluding statement or section that follows from and supports the information or explanation presented. <p>CC.3.6.6-8.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p>CC.3.6.6-8.D. With some guidance and support from peers and adults, develop and strengthen writing focusing on how well purpose and audience have been addressed.</p> <p>CC.3.6.6-8.E. Use technology, including the Internet and present the relationships between information and ideas clearly</p>			
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<p>III. Inquiry Process Skills</p> <p>A. Scientific Method</p>	<p>and efficiently.</p> <p>CC.3.6.6-8.F. Conduct short research projects to answer a question drawing on several sources and that allow for multiple avenues of exploration.</p> <p>CC.3.6.6-8.G. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism.</p> <p>CC.3.6.6-8.H. Draw evidence from informational texts to support analysis reflection, and research.</p> <p>Differentiate fact and opinion through observation, prior knowledge, and the use of resources. S8.A.1.1.1</p>			
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<p>B. Conduct Investigations</p> <ol style="list-style-type: none"> 1. Pose questions 2. Make claims 3. Construct models 4. Collect data/evidence 5. Analyze data 6. Draw conclusions 7. Cite evidence 	<p>Students pose testable questions, conduct investigations, and make claims citing supporting evidence related to a specific content area. S8.A.1.1.2</p> <p>Analyze data to make claims and support inferences with evidence. S8.A.1.1.3</p> <p>Students will construct models to support their predictions using hypothesis-based evidence. S8.A.1.1.4</p> <p>Students will associate how scientific and technological concepts explain the solution for everyday problems. S8.A.1.2.3</p> <p>Introduce ratios to explain relationships. S8.A.1.3.1</p> <p>Interpret and analyze data to explain changes in a system over time. S8.A.1.3.2</p> <p>Interpret and analyze variables and data to explain changes in a system over time. S8.A.1.3.3</p> <p>Student will measure a variety of variables and interpret the data through the use of content specific measurement. S8.A.2.1.1</p> <p>Student will explore relationships in an inquiry-based environment. S8.A.2.1.2</p> <p>Student will conduct controlled experiments based on course content. S8.A.2.1.3</p> <p>Create and interpret various types of graphs, charts, and data tables. S8.A.2.1.4</p> <p>Draw conclusions supported by evidence and share them with an audience. S8.A.2.1.5</p> <p>Student will identify the appropriate tool and/or scale necessary to measure a specific variable. S8.A.2.2.1</p> <p>Student will use the appropriate tool and/or scale necessary to measure a specific variable under experimental conditions. S8.A.2.2.2</p>			
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<ol style="list-style-type: none"> 1. Biotic/Abiotic 2. Terrestrial/Aquatic Environments 3. Photosynthesis 4. Food Chain 5. Water Cycle 	<p>Create models to explain natural systems. S8.A.3.2.1</p> <p>Illustrate, label, identify, and define the components of a simple system. S8.A.3.1.1</p> <p>Illustrate and label the steps of a process within a system. S8.A.3.1.2</p>			
<p>B. Plants and Animals</p> <ol style="list-style-type: none"> 1. Characteristics of five Kingdoms <ol style="list-style-type: none"> a. Animal <ol style="list-style-type: none"> 1) Vertebrate 2) Invertebrate b. Plant <ol style="list-style-type: none"> 1) Vascular 2) Nonvascular c. Protist d. Bacteria e. Fungus 	<p>Distinguish the parts of a system and how they are interrelated. S8.A.3.1.1</p> <p>Explain the characteristics of the physical processes related to the water cycle. S8.D.1.3.1</p> <p>Trace the energy flow from the sun to living organisms. S8.C.2.2.1</p> <p>Diagram and describe energy flow through an ecosystem. S8.B.3.1.1</p> <p>Demonstrate outcomes based on various inputs (e.g., ecosystems). S8.A.3.1.3</p>			
<p>C. Cells (Plants and Animals)</p> <ol style="list-style-type: none"> 1. Structure 2. Function 	<p>Examine cause and effect relationships within a system. S8.A.3.1.5</p>			
<p>D. Parts of Plant</p> <ol style="list-style-type: none"> 1. Roots 2. Stems 3. Leaves 	<p>Utilize distinguishing characteristics to classify organisms. S8.B.1.1.3</p> <p>Recognize and explain patterns in nature. S8.A.3.3.2</p>			
<p>E. Human Impact</p> <ol style="list-style-type: none"> 1. Pest Management 	<p>Identify the characteristics of organisms that help them function affectively in a specific way. S8.B.1.1.1</p> <p>Describe similarities and differences of internal and external features of organisms. S8.B.1.1.2</p> <p>Illustrate and explain the specific structures and their role in organism function. S8.B.1.1.4</p> <p>Identify structures or behaviors of animals necessary for survival in various environments. S8.B.2.1.1</p>			

	<p>Identify and describe relationships among organisms in their habitat. S8.B.3.1.3</p> <p>Examine the affects of factors on populations. S8.B.3.2.1</p> <p>Explain an organism’s response to change. S8.B.3.2.3</p> <p>Identify impacts of product production on Earth’s resources. S8.D.1.2.1</p> <p>Recognize and report on the long-term health effects of environmental and societal developments. S8.A.1.2.2</p> <p>Identify and discuss waste management approaches. S8.B.3.3.3</p>			
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COURSE OUTLINE	OBJECTIVES (PA standard)			
<p>III. Astronomy</p> <p>A. Movement of Earth</p> <ol style="list-style-type: none"> 1. Rotation 2. Revolution 3. Tilt <p>B. Movement of Moon</p> <ol style="list-style-type: none"> 1. Moon phases 2. Tides <p>C. Celestial Bodies</p> <ol style="list-style-type: none"> 1. Identify 2. Classify 3. Differentiate <p>D. Gravity</p> <ol style="list-style-type: none"> 1. Define 2. Role <ol style="list-style-type: none"> a. Kepler's Laws b. Motion of System <ol style="list-style-type: none"> a. Keeps us on Earth 	<p>Explain and examine the Earth's movements in relation to the moon and sun. S8.D.3.1.1</p> <p>Classify and differentiate characteristics of celestial bodies found in the solar system. S8.D.3.1.3</p> <p>Examine the role of gravity and its importance in the solar system. S8.D.3.1.2</p>			

Health Curriculum

COURSE DESCRIPTION:

Health at the fifth grade level includes a review of the five major body systems and mastery of the endocrine, nervous and urinary systems. Other health related objectives are covered in guidance programs and building policies.

The state has developed anchors (points of focus) in Health. The anchors specify eligible content for the content areas. The anchors include standards 1.1, 1.2, and 1.3

The Objectives that address anchors have been bolded.

COURSE OUTLINE	OBJECTIVES (PA standard)			
I. Body Systems A. Nervous System 1. Structure and function a. Brain b. Spinal Cord c. Nerves B. Urinary System 1. Structure and function a. Kidneys b. Bladder c. Ureter d. Vein/artery C. Endocrine 1. Structure and function a. Pituitary gland b. Pancreas c. Thyroid d. Adrenal gland e. Ovaries f. Testes	Identify and describe the structure and function of the nervous, urinary, and endocrine systems. 10.1.6B			
II. Body Systems A. Circulatory	Review the five major body systems (circulatory, respiratory, muscular, skeletal, and digestive)			

COURSE OUTLINE	OBJECTIVES (PA standard)			
B. Respiratory C. Muscular D. Skeletal E. Digestive	Identify and describe the structure and function of the major body systems. 10.1.6B, 10.1.3B			
III. Drug Abuse Resistance Education A. Tobacco/Marijuana Facts B. Alcohol Facts C. Decision – Making Model D. Friendship/Peer Pressure E. Assertiveness Skills	Introduce and practice a decision-making model Identify normative beliefs about the use of tobacco and alcohol Apply tobacco and marijuana facts to a variety of situations using the decision-making model Examine friendship and peer pressure in situational dilemmas using the decision-making model Apply and practice assertiveness and decision-making skills Explain factors that influence childhood and adolescent drug use. 10.1.6.D Identify health problems that can occur throughout life and describe ways to prevent them. 10.1.6E Explain the relationship between health-related information and consumer choices. 10.2.6.B Explain the media’s effect on health and safety issues. 10.2.6.C Describe and apply the steps of a decision-making process to health and safety issues. 10.2.6.D			
IV. Conflict Resolution A. Bullying/Teasing	Identify and apply the conflict mediation using the steps of the “Talk it Out” and “PEACE” processes. Describe and apply the steps in a decision-making process to health and safety issues. 10.2.6D			

COURSE OUTLINE	OBJECTIVES (PA standard)			
	Describe strategies to avoid or manage conflict and violence. 10.3.6C, 10.1.6.D			
V. Healthful Living A. Safety and Injury Prevention	Establish healthy routines (e.g., hand-washing, tissue use, etc.) Follow effective practices against diseases transmitted through blood and body fluids Explain relationships between personal health practices and individual well-being. 10.2.6A Implement procedures for dealing with emergency situations. (e.g. Fire Drill, Emergency Weather Drill, Bus Evacuations, etc.) Follow school safety rules. (e.g., bus, playground, classroom, cafeteria, science labs, etc.) Demonstrate safe practices in emergency situations Identify ways to survive natural disasters (e.g., Fire Drill, Emergency Weather Drill, Bus Evacuations, etc.) Describe and apply the steps in a decision-making process to health and safety issues. 10.2.6D Analyze environmental factors that impact health. 10.2.6E Follow guidelines established in the Seneca Valley Acceptable Use Policy Explain and apply safe practices in the home, school, and community. 10.3.6A Apply safety rules dealing with strangers (e.g., public activities, internet, etc.). 10.2.6.D			

CARING FOR YOURSELF AND OTHERS

(Fourth and Fifth Grade)

Blood and Body Fluids Lesson

Objective: The fourth and fifth grade student will follow effective precautions against diseases transmitted through blood and body fluids.

Life skill: I will follow the correct steps to protect myself and others from diseases spread through blood and body fluids.

Motivational Steps:

1. Explain that we need to protect ourselves and others from contact with body fluids.
 - Consider the body fluids of all persons as containing potentially infectious organisms (germs).
 - The term body fluid includes blood, drainage from cuts and scrapes, urine, vomit, respiratory secretions (e.g. nasal drainage) and saliva.
 - Organisms (germs) may be carried by individuals that look healthy.
2. Explain ways that students can avoid contact with body fluids by:
 - Avoiding direct skin contact with blood and body fluids by following basic first aid procedures for skin wounds and nosebleeds.
 - Dispose of all soiled tissues properly.
3. Discuss the procedure for unexpected skin contact with body fluid.
 - Immediately wash the contact area vigorously with soap and water for at least ten seconds.
 - Notify a custodian or adult of all body fluid spills so that cleaning with an appropriate disinfectant can be completed.

Evaluation: Summarize lesson content. Encourage student discussion of personal experiences when these precautions were used.