Course Overview

Middle School | 6 | Science - *Last Updated on August 18, 2024*

DESCRIPTION

K-12 Content Area | Mission & Philosophy Statement

- Young people are born investigators, with natural curiosities about the physical, biological, and social worlds they experience. Anchoring science learning in real-world phenomena connects curiosities to core conceptual understandings.
- Students actively construct understanding through inquiry, experimentation, and analysis to develop science and engineering practices such as asking questions, planning and carrying out investigations, and constructing explanations.
- Integration of crosscutting concepts such as patterns, cause and effect, and systems thinking promote interdisciplinary understanding and sense-making of the natural world.
- Science learning occurs alongside other disciplines to foster holistic understanding and application of knowledge.

Course Description

The comprehensive K-12 science program at Saucon Valley Middle School aims to cultivate scientific thinking and logical reasoning skills by incorporating science and engineering practices. The curriculum is designed to challenge students, enabling them to pose questions, identify problems, and conduct thorough investigations. Through collaborative experiences, students are encouraged to construct explanations, devise solutions, and engage in evidence-based arguments, promoting a deep understanding of scientific concepts.

The 6th-grade science curriculum is crafted to provide students with a foundational understanding of scientific principles, focusing on the exploration of physical science and the diversity of life. Students begin by exploring how light interacts with materials and how visible light travels, modeling the workings of a one-way mirror. They then investigate thermal properties of different containers, analyzing energy transfer and designing effective drink containers. The weather, climate, and water cycling unit engages students in understanding small-scale storms and large-scale weather patterns through videos and real-world data analysis. The plate tectonics unit covers geological processes, including the movement of mountains and earthquakes, while the unit on natural hazards addresses tsunami detection and mitigation. The final unit focuses on body systems, examining how cells contribute to healing and growth. Through hands-on investigations, modeling, and data analysis, students construct explanations, design solutions to real-world problems, and develop scientific literacy skills to effectively communicate their findings and understand scientific texts.

STANDARDS

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COURSE OBJECTIVES

The objective of the course is to meet the performance expectations, science and engineering practices and cross cutting concepts outlined in the STEELS standards.

ASSESSMENT TYPES

The following assessment types will be used during the course:

- Curriculum-based Measures
- Formative Assessments
- Performance-based Assessments
- Summative Assessments
- Initial Models to Explain Phenomena
- Driving Question Board
- Lesson Progress Tracker
- Revised Explanations of Phenomena
- Peer Feedback Cycles
- Group Models and Building Understandings Discussion

SUGGESTED METHODS OF INSTRUCTION

A science program demands the use of a variety of instructional strategies to foster scientific thinking. Below is a list of suggested strategies for high-quality instruction:

- Instructional components outlined in *The Framework for Teaching* by Charlotte Danielson
- Experiencing phenomena
- Posing questions for investigation
- Cooperative learning and collaboration
- Inquiry, engineering, and design processes
- Sense-making discussions
- Recording observations and responding to questions in Science Notebooks
- Developing models

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RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
OpenSciEd Grade 7 Curriculum and Teacher's Resources Activate/OpenSciEd 7.1 Student Consumable Workbook Activate Consumable Kits	Activate Online Learning Platform Activate Insight Assessment Tool	