Course Overview

Elementary School | 1 | Science - *Last Updated on March 28, 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 aims to cultivate scientific thinking and logical reasoning skills by incorporating science and engineering practices. A challenging curriculum will enable students to acquire the ability to pose questions, identify problems, and execute investigations. Through collaborative experiences, students will be encouraged to construct explanations and devise solutions, engaging in evidence-based arguments.

In first grade, students explore science through an inquiry-based approach to investigate Earth, physical, and life sciences. In Earth science, students will observe the sun, moon, and stars at different times of the year to discover patterns that can be predicted. In physical science, students use sound and light to discover how waves transfer both energy and information. In life science, students discover how offspring are like their parents, but not exactly alike. They will engage in science and engineering practices as they use materials to design a solution to a human problem by mimicking how plants and animals use their external parts to help them survive, grow, and meet their needs. Cross-cutting concepts of patterns, cause and effect, and structure and function will be addressed throughout the course.

STANDARDS

Pennsylvania - Grade 1 - Science, Technology & Engineering, And Environmental Literacy & Sustainability Standards (STEELS) (2023)

3.1.1.A 3.1.1.B 3.1.1.C 3.2.1.A 3.2.1.B 3.2.1.C 3.2.1.D 3.3.1.A 3.3.1.B

3.4.K-2.A 3.5.K-2.C 3.5.K-2.K 3.5.K-2.L 3.5.K-2.M 3.5.K-2.N 3.5.K-2.Q 3.5.K-2.S

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3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Y 3.5.K-2.BB 3.5.K-2.CC

3.5.K-2.DD

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

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
Student Text Resources: • Changes in the Sky: FOSS Science Resources. Delta Education/School Specialty, 2024. • Sound and Light: FOSS Science Resources. Delta Education/School Specialty, 2024. • Plants and Animals: FOSS Science Resources. Delta Education/School Specialty, 2024. Teacher Resources: Investigations Guides and Teacher Resources for: • Changes in the Sky: Full Option Science System (FOSS), Pathways Version. Delta Education/School Specialty, 2024. • Sound and Light: Full Option Science System (FOSS), Pathways Version. Delta Education/School Specialty, 2024. • Plants and Animals: Full Option Science System (FOSS), Pathways Version. Delta Education/School Specialty, 2024. Other Resources: • FOSS (2024 Pathways version) Resource Kits for: ◦ Plants and Animals ◦ Sound and Light ◦ Changes in the Sky • Teacher created resources		Technology: • “FOSSweb.” Online Resources, www.fossweb.com. • District-approved supplemental technology