Course Overview

Elementary School | 2 | Science - *Last Updated on April 10, 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 second grade, students explore science through an inquiry-based approach to investigate Earth, physical, and life sciences. In Earth science, students investigate the properties of rocks and soil, study weathering and erosion, locate natural sources of water, and determine how to represent the shapes and kinds of land and bodies of water on Earth. They use simple tools to observe, describe, analyze, and sort solid Earth materials and learn how the properties of the materials are suited for different purposes. Students explore how wind and water change the shape of the land and compare ways to slow the process of erosion. In physical science, students engage with core ideas dealing with matter and its interactions, as well as engineering design. In life science, students experience the biodiversity of Earth by becoming naturalists, studying insects and plants in and out of the classroom. They observe life cycles of insects and grow a flowering plant in the classroom.

STANDARDS

Pennsylvania - Grade 2 - Science, Technology & Engineering, And Environmental Literacy & Sustainability Standards (STEELS) (2023)

3.1.2.A 3.1.2.B 3.1.2.C 3.2.2.A 3.2.2.B 3.2.2.C 3.2.2.D 3.3.2.A 3.3.2.B

3.3.2.C 3.3.2.D 3.4.K-2.A 3.4.K-2.C 3.4.K-2.D 3.5.K-2.A 3.5.K-2.B 3.5.K-2.F

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3.5.K-2.G 3.5.K-2.H 3.5.K-2.K 3.5.K-2.L 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q 3.5.K-2.R

3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.W 3.5.K-2.X 3.5.K-2.Y 3.5.K-2.AA

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: • Water and Landforms: FOSS Science Resources. Delta Education/School Specialty, 2024. • Insects and Plants: FOSS Science Resources. Delta Education/School Specialty, 2024. • Solids and Liquids: FOSS Science Resources. Delta Education/School Specialty, 2024. Teacher Resources: Investigations Guides and Teacher Resources for: • Water and Landforms: Full Option Science System (FOSS), Pathways Version. Delta Education/ School Specialty, 2024. • Insects and Plants: Full Option Science System (FOSS), Pathways Version. Delta Education/ School Specialty, 2024. • Solids and Liquids: Full Option Science System (FOSS), Pathways Version. Delta Education/ School Specialty,		Technology: • “FOSSweb.” Online Resources, www.fossweb.com. • District-approved supplemental technology

2024. Other Resources: FOSS (2024 Pathways version) Resource Kits for: ◦ Solids and Liquids ◦ Insects and Plants ◦ Water and Landforms Teacher created resources		