# Course Overview

**Elementary School | 3 | Science** - *Last Updated on August 17, 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 third grade, students explore science through an inquiry-based approach to investigate Earth, physical, and life sciences. In Earth science, students investigate the properties of water and explore the interactions between water and other earth materials. Students engage in science and engineering practices as they investigate the role of water in weather and how weather conditions change around the world and throughout the year while exploring the cross-cutting concepts of patterns, cause and effect, and scale, proportion, and quantity. In physical science, students use their knowledge of forces and motion to enter the engineering and design process. They engage in science and engineering practices as they investigate phenomena and collect data to answer questions about the effects of magnetic force and gravity on objects. They explore the cross-cutting concepts of patterns, systems and system models, cause and effect, and structure and function as they define problems in order to design solutions. In life science, students explore how individual organisms have variations in their traits that may provide an advantage in surviving in a particular environment and how our knowledge of animals that survived in past environments is inferred by studying fossil characteristics. Students will observe, compare, categorize, and care for organisms. Students engage in science and engineering practices to investigate the structure and behaviors of organisms of the same kind, among organisms of different kinds, and between populations of organisms and their environment over time.

## STANDARDS

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**Pennsylvania - Grade 3 - Science, Technology & Engineering, And Environmental Literacy & Sustainability Standards (STEELS) (2023)**

3.1.3.A 3.1.3.B 3.1.3.C 3.1.3.D 3.1.3.E 3.1.3.F 3.1.3.G 3.1.3.H 3.2.3.A

3.2.3.B 3.2.3.C 3.2.3.D 3.3.3.A 3.3.3.B 3.3.3.C 3.4.3-5.A 3.4.3-5.B 3.4.3-5.E

3.4.3-5.F 3.5.3-5.V 3.5.3-5.Z 3.5.3-5.C 3.5.3-5.I 3.5.3-5.N 3.5.3-5.P 3.5.3-5.Q

3.5.3-5.R 3.5.3-5.U 3.5.3-5.Y 3.5.3-5.BB 3.5.3-5.M

## 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:<br>• Water and Climate: FOSS Science Resources. Delta Education/School Specialty, 2023.<br>• Motion: FOSS Science Resources. Delta Education/School Specialty, 2023.<br>• Structures of Life: FOSS Science Resources. Delta Education/School Specialty, 2023.<br><br>Teacher Resources:<br>Investigations Guides and Teacher Resources for:<br>• Water and Climate: Full Option Science System (FOSS), Pathways Version. Delta Education/ School Specialty, 2023.<br>• Structures of Life: Full Option Science System (FOSS), Pathways Version. Delta Education/ School Specialty, 2023.<br>• Motion: Full Option Science System (FOSS), Pathways Version. Delta Education/School Specialty, 2023.<br><br>Other Resources:<br>• FOSS (2023 Pathways version) Resource Kits for:<br>◦ Motion<br>◦ Structures of Life<br>◦ Water and | | Technology:<br>• “FOSSweb.” Online Resources, www.fossweb.com.<br>• District-approved supplemental technology |

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| Climate<br>• Teacher created resources | | |