SOUTHERN LEHIGH SCHOOL DISTRICT
5775 Main Street
Center Valley, PA 18034

Planned Course for Science

Course: Grade 4 Science

Standards:
This course is aligned to standards within the following categories of the Pennsylvania Academic Standards for Science and Technology and Engineering Education and the Pennsylvania Standards for Environment and Ecology:

3.1	Biological Sciences
3.2	Physical Sciences: Chemistry and Physics
3.3	Earth and Space Sciences
3.4	The Scope of Technology
4.1	Ecology
4.2	Watersheds and Wetlands
4.3	Natural Resources
4.4	Agriculture and Society
4.5	Humans and the Environment

Course Description:
The K-12 science program within Southern Lehigh School District will foster the development of scientific thinking and logical reasoning. A rigorous curriculum will provide opportunities for students to learn how to ask questions and define problems in order to plan and carry out investigations. Students will be challenged to construct explanations and design solutions through collaborative experiences where they engage in arguments that are based on evidence. Teachers will provide students with hands-on and authentic experiences aligned to a coherent progression of learning.

In GRADE 4 SCIENCE, students will explore science through a hands-on, inquiry-based approach to investigate energy, soil, rocks, and landforms, environments, and Earth's place in the Universe. Students will investigate how energy is transferred and conserved, how waves are used to transfer energy and information, how organisms live, grow, respond to their environment and reproduce, how and why the Earth is constantly changing, how Earth's processes and human activities affect each other, and what makes up our Solar System and Earth's place in the Universe.

Measurable objectives to be attained by students:
Specific objectives for this course are aligned to the Next Generation Science Standards, the Pennsylvania Academic Standards for Science and Technology and Engineering Education, and the Pennsylvania Standards for Environment and Ecology as outlined in the Scope and Sequence for Grade 4 Science.

Instructional Strategies:
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
- Hands-on learning
- Posing questions for investigation
- Cooperative learning and collaboration
- Inquiry, engineering, and design
- Sense Making Discussions using Sentence Frames
- Science Notebooks

Estimated Instructional Time:
43 minutes per day for one school year

Forms of Assessment to Measure Attainment of Course Objectives:

- Curriculum-based measures
- Benchmark Assessments
- Formative Assessments
- Summative Assessments
- Performance-Based Assessments

Resources:

Student Text Resources:
Energy: FOSS Science Resources. Delta Education, 2016.
Environments: FOSS Science Resources. Delta Education, 2016.
Soils, Rocks, and Landforms: FOSS Science Resources. Delta Education, 2016.

Teacher Resources:
Investigations Guides and Teacher Resources for:

- *Energy: Investigations Guide: Full Option Science System (FOSS).* Delta Education, 2019, NGSS.
- *Environments: Full Option Science System (FOSS).* Delta Education, 2019, NGSS.
- *Soils, Rocks, and Landforms: Full Option Science System (FOSS).* Delta Education, 2019, NGSS.

Technology:
"FOSSweb." Online Resources, www.fossweb.com/,
District approved supplemental technology

Other Resources:
Full Option Science System (FOSS) 2016 NGSS Resource Kits for:

- *Energy*
- *Environments*
- *Soils, Rocks, and Landforms*

Teacher created resources
District approved supplemental resources and labs