



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

Planned Course for Technology Education/STEM

Course: Grade 4 STEM

Standards:

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

- 3.4.A Scope of Technology
- 3.4.B Technology and Society
- 3.4.C Technology and Engineering Design
- 3.4.D Abilities for a Technological World
- 3.4.E The Designed World

Course Description:

The 4-12 Technology Education/STEM program within Southern Lehigh School District will provide an authentic and hands-on learning experience for all students. Courses are designed to empower students to develop, refine, and apply technological solutions focused on improving the world around them. Students will work collaboratively to make sense of and solve problems. Learning experiences will be inquiry-based, challenging students to reflect upon and revise their thinking. Teachers will provide opportunities for students to apply technology, as well as concepts from science and mathematics, to the engineering and design processes.

In Grade 4 STEM, students are introduced to engineering and the design process to creatively solve problems. They also explore sequential programming logic and use reasoning skills. During this course, students work to program robots to complete a challenge and understand simple machines. They code animations to communicate and share ideas. Students also use the design process to manufacture and refine a finished product. Throughout this course, there is an emphasis placed on collaboration and teamwork.

Measurable objectives to be attained by students:

Specific objectives for this course are aligned to the National Standards for Technology Literacy and the Pennsylvania Academic Standards for Science and Technology and Engineering Education as outlined in the Scope and Sequence for Grade 4 STEM.

Instructional Strategies:

A well-rounded Technology Education/STEM program requires a wide range of instructional strategies that empower students to develop, refine, and apply technological solutions. Below is a list of suggested strategies for high-quality instruction:

- Instructional components outlined in the *Framework for Teaching* by Charlotte Danielson
- Provide hands-on learning experiences
- Following the engineering design process
- Inquiry and project-based learning focused on problem-solving
- Use of design notebooks

Estimated Instructional Time:

Once every five days for 45 minutes

Forms of Assessment to Measure Attainment of Course Objectives:

- Curriculum-Based Measures
- Summative Assessments
- Formative Assessments
- Performance-Based Assessment

Resources:**Technology:**

Lego Robotics

District approved supplemental technology

Other Resources:

Teacher created resources

District approved supplemental resources