



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

Planned Course for Technology Education/STEM

Course: Grade 8 STEM: Automation and Robotics

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.

Grade 8 STEM: Automation and Robotics allows students to trace the history, development, and influence of automation and robotics as they learn about mechanical systems, energy transfer, machine automation, and computer control systems. Students use a robotic platform to design, build, and program for real-world situations.

Measurable objectives to be attained by students:

Specific objectives for this course are aligned to the National Standards for Technology Literacy, the Pennsylvania Academic Standards for Science and Technology and Engineering Education, and the Pennsylvania Core Standards for Reading and Writing in Science and the Technical Subjects as outlined in the Scope and Sequence for Grade 8 STEM: Automation and Robotics.

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:

46 minutes per day for one quarter of the school year (45 days)

Forms of Assessment to Measure Attainment of Course Objectives:

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

Resources:**Technology:**

“Homepage.” *Project Lead the Way*, www.pltw.org/.

VEX Robotic Systems

District approved supplemental technology

Other Resources:

Teacher created resources

District approved supplemental resources